



May 16-17, 2013
UNY Hotel
Yogyakarta State University



Organized by :
Institute of Research and Community Services
Yogyakarta State University



PROCEEDINGS
INTERNATIONAL CONFERENCE ON EDUCATIONAL
RESEARCH AND INNOVATION 2013 (ICERI 2013)
STRENGTHENING THE TIES BETWEEN EDUCATION AND RESEARCH

May 16 – 17 , 2013 | UNY Hotel | Yogyakarta State University

Undang-undang Republik Indonesia Nomor 19 Tahun 2002 tentang Hak Cipta

Lingkup Hak Cipta

Pasal 2 :

1. Hak Cipta merupakan hak eksklusif bagi Pencipta atau Pemegang Hak Cipta untuk mengumumkan atau memperbanyak ciptaannya, yang timbul secara otomatis setelah suatu ciptaan dilahirkan tanpa mengurangi pembatasan menurut peraturan perundang-undangan yang berlaku.

Ketentuan Pidana

Pasal 72 :

1. Barangsiapa dengan sengaja atau tanpa hak melakukan perbuatan sebagaimana dimaksudkan dalam Pasal 2 ayat (1) atau pasal 49 ayat (1) dan (2) dipidanakan dengan pidana penjara masing-masing paling singkat 1 (satu) bulan dan/atau denda paling sedikit Rp.1.000.000,00 (satu juta rupiah), atau pidana penjara paling lama 7 (tujuh) tahun dan/atau denda paling banyak Rp.5.000.000.000,00 (lima miliar rupiah).
2. Barangsiapa dengan sengaja menyiarkan, memamerkan, mengedarkan, atau menjual kepada umum suatu ciptaan atau barang hasil Pelanggaran Hak Cipta atau Hak Terkait sebagaimana dimaksudkan dalam ayat (1) dipidanakan dengan pidana penjara paling lama 5 (lima) tahun dan/atau denda paling banyak Rp.500.000.000,00 (lima ratus juta rupiah).

PROCEEDINGS
INTERNATIONAL CONFERENCE ON EDUCATIONAL
RESEARCH AND INNOVATION 2013 (ICERI 2013)
STRENGTHENING THE TIES BETWEEN EDUCATION AND RESEARCH

May 16 – 17 , 2013 | UNY Hotel | Yogyakarta State University

Editor :
Bambang Sugeng, Ph.D
Sumarno, Ph.D
Suharso, M.Pd



2013

PROCEEDINGS
INTERNATIONAL CONFERENCE ON EDUCATIONAL
RESEARCH AND INNOVATION 2013 (ICERI 2013)
STRENGTHENING THE TIES BETWEEN EDUCATION AND RESEARCH

Editor :

Bambang Sugeng, Ph.D
Sumarno, Ph.D
Suharso, M.Pd

Tata Letak :

Ari Setyo Wibowo

Desain Cover :

Pudji Triwibowo

ISBN 978-602-7981-04-1

Perpustakaan Nasional : Katalog dalam Terbitan (KDT)
xi + 464 hlm; 21 x 29 cm

Penerbit:

UNY Press

Kompleks Fak. Teknik UNY, Kampus Karangmalang
Yogyakarta 55281 Phone : (0274) 589346
E-mail : unypress.yogyakarta@gmail.com

INTRODUCTION

Research is one of the three activities that should be conducted by the academic community of a university. Through research activities lecturers get empirical facts that are valuable for the improvement and development of theories and practices to bring about a qualified education.

In relation to the essence of a research to improve the quality of education, it is highly recommended that they do not conduct researches perfunctorily. Researches that are conducted should show special qualities recognized internationally. One effort to realize it is by conducting researches in the field of education and teaching and the field of community service integratedly.

Another important effort is by updating the knowledge and insights in the educational field either through reading related references or having discussions and meetings with other researchers and educational practitioners. In this context an international conference on educational researches and innovations constitutes a strategic forum to improve the researchers' insights and studies in contributing themselves to solve the educational problems through reseraches.

Hopefully, all materials in this conference are compiled into a proceeding that all related parties can read and are useful for us to improve the quality of education.

Yogyakarta, 10th of May 2013
Rector of Yogyakarta State University

Prof. Dr. Rochmat Wahab, M.Pd., M.A.

PREFACE

First of and above all, all praises and thanks be to Allah, the Lord of mankind and all that exists for His blessings and grace without which this international conference on educational researches and innovations would never be realized. This conference is a forum for the local, national and international educational researchers and practitioners to discuss strategic issues in the field of educational researches and innovations that are and will have been developing to realize effective schools.

This proceeding consists of three parts. The first is research policies, which include the management of educational researches, the development of teacher training in researches, and the participation of students and teachers in researches. The second part covers the model and implementation of educational researches, including collaborative researches between the educational world and industry, as well as society based researches. The third part includes researches on teaching and learning innovations in the areas of educational sciences, sport sciences, mathematics and science, engineering and vocational education, and informal education.

Hopefully, this proceeding can be beneficial for all of us to improve the quality of education.

Yogyakarta, 10th of May 2013

Head of Research and Community Service Institute of
Yogyakarta State University

Prof. Dr. Anik Ghufron

TABLE OF CONTENT

INTRODUCTION	v
PREFACE	vi
TABLE OF CONTENT	vii

INVITED SPEAKERS

EDUCATIONAL RESEARCH DEVELOPMENT IN INDONESIA (Rochmat Wahab)	
TEACHER EDUCATION DEVELOPMENT (Melissa Parker)	1
DEVELOPING EDUCATIONAL RESEARCH (Kevin G. Patton)	8
NEW TRENDS IN EDUCATIONAL RESEARCH METHODOLOGIES (Julismah Jani)	18
INNOVATIVE RESEARCH ON TEACHING AND LEARNING (Unsal Ali)	33
EDUCATIONAL RESEARCH PRACTICE IN INDONESIA (Graham Dawson)	44

EDUCATIONAL RESEARCH POLICY, MANAGEMENT, AND INNOVATION

SCHOOL QUALITY ASSURANCE MODEL IN THE LOCAL AUTONOMY ERA OF INDONESIA (Sutarto)	57
THE ROLES OF HIGHER EDUCATION INSTITUTIONS IN FACILITATING TEACHERS' NEEDS TO CONDUCT RESEARCH TO EFFECTIVELY ENHANCE EDUCATIONAL PROCESS (Della Raymena Jovanka, Triyono, Durri Andriani)	69
THE PERCEPTION ON UNIVERSITY'S QUALITY STANDARDS BY THE INTERNAL STAKEHOLDER AND STUDENTS (UNIKA ATMA JAYA CASE) (Rusminto Wibowo, MM. Wahyuni. Inderawati, A.Y. Agung Nugroho)	79
INNOVATIVE TEACHING - LEARNING RESEARCH ENVIRONMENT IN HIGHER EDUCATION : A CHALLENGE FOR BANGLADESH (Shanta Akther Sheema)	91

THE USE OF GEOGRAPHIC INFORMATION SYSTEM TECHNOLOGY FOR EDUCATION DATABASE CONSTRUCTION IN SOUTH WEST SUMBA DISTRICT (Qadriathi Dg Bau, Sulaiman A, Zaenuri Mastur).....	97
NEW PARADIGM OF RESEARCH ON ISLAMIC LAW: LEARNING FROM <i>PESANTREN</i> TRADITION FOR DEVELOPING THE ISLAMIC LEGAL STUDIES IN THE ISLAMIC HIGHER EDUCATION (Musahadi).....	109
THE DYNAMICS OF QUR'ANIC EXEGESIS IN SURAKARTA: 1900-1930 (Akhmad Arif Junaidi).....	123
TEACHER TRAINING AND DEVELOPMENT	
ELEMENTARY SCHOOL TEACHER PEDAGOGIC COMPETENCE DEVELOPMENT THROUGH LEARNING BASED EXPLORATION, ELABORATION, AND CONFIRMATION (EEC) IN SALATIGA (Slameto).....	135
INFLUENCE OF PROCEDURAL AND DISTRIBUTIVE JUSTICES ON TEACHERS' PROFESSIONAL COMMITMENT (Subarino, Abdul Jalil Ali, Tang Keow Ngang)	152
EDUCATIONAL RESEARCH POLICY TEACHER TRAINING DEVELOPMENT: PREPARING TEACHER'S FOR EARLY CHILDHOOD PROGRAMS OF COMPUTER ASSISTED INSTRUCTION IN INDONESIA (Luluk Asmawati).....	162
A GUIDANCE MODEL FOR ART AND CULTURE TEACHERS IN IMPROVING THEIR COMPETENCE THROUGH COLLABORATION BETWEEN UNIVERSITIES AND MGMP (PROFESSIONAL SUBJECT TEACHER ASSOCIATION) (Bandi Sobandi).....	172
TEACHERS' NEEDS TO CONDUCT RESEARCH : A COMPARISON BETWEEN PRE- SCHOOL AND ELEMENTARY-SCHOOL TEACHERS (Durri Andriani, Triyono, Della Raymena Jovanka, Sukiniarti).....	186
TEACHERS' SENSITIVITY TO SCIENTIFIC PAPER : ARTICLE REVIEW FROM GURU PINTAR ONLINE (Andayani, Dodi Sukmayadi, Suroyo).....	196

INNOVATIVE TEACHING AND LEARNING MODEL

INTEGRATIVE LEARNING MODEL ON EARLY CHILDHOOD EDUCATION FOR POOR CHILDREN IN TRADITIONAL MARKETS JAKARTA (Suhartono and Tetty Rachmi)	205
DEVELOPMENT OF M-EDUKASI. KEMDIKBUD.GO.ID A MOBILE LEARNING-BASED LEARNING MEDIA (M. Miftah. M.Pd.)	217
THE INTEGRATION OF OPEN MEETING FACILITY (OMF) INTO ONLINE TUTORIAL (Dodi Sukmayadi, Herawati)	229
IMPROVING STUDENTS' MOTIVATION OF LEARNING THROUGH THE USE OF BLENDED LEARNING: CASE STUDY OF SMKN 1 BANTUL (Alita Arifiana Anisa, Annisa Ratna Sari)	238
INTEGRATING CHARACTER DEVELOPMENT IN PROFESSIONALS CAPABILITIES STRENGTHENING (PKP) GUIDANCE OF STUDENTS OF S1 PGSD COURSE (Edi Prayitno).....	248
FACTORS OF TEACHING - LEARNING PROCESS AS TRIGGERS TOWARD SCHOOL ANXIETY TENDENCY (Moh. Nur Ali, Gazali).....	258
THE DEVELOPMENT OF THE ASSESSMENT SYSTEM OF LEARNING RESULT IN PHYSICAL EDUCATION AND SPORT HEALTH FOR HIGH SCHOOL IN YOGYAKARTA SPECIAL REGION (Guntur).....	269

INNOVATIVE TEACHING LEARNING IN SCIENCE

INNOVATION RESEARCH IN MATEMATICS EDUCATION THROUGH THINK PAIR AND SHARE IN ELEMENTARY SCHOOL (Lusi Rachmiazasi Masduki)	286
THE ANALYSIS OF SOCIAL MATHEMATICS TEACHER'S DIFFICULTIES IN SOLVING MATHEMATICS PROBLEM (Nidya Ferry Wulandari, Heri Retnawati)	296

THE DEVELOPMENT AND ITS IMPACT OF JAVA 2 MICRO EDITIONBASED MEDIA FOR MOBILE CHEMISTRY ENCYCLOPEDIA TO SENIOR HIGH SCHOOL STUDENT LEARNING (Amallia Nugrahaeni and Jaslin Ikhsan)	311
THE DEVELOPMENT OF CHARACTER-BASED MOBILE GAME “ <i>ROBOCHEM</i> ” ON THE REACTION RATE TOPIC AND THE RESPONSE OF GRADE 11 TH STUDENTS TO THE GAME (Septi Riyanningsih and Jaslin Ikhsan)	320
THE QUALITY OF CONTENT AND PERFORMANCE OF MODULES EVOLUTION (Ucu Rahayu, Mestika Sekarwinahyu)	329
THE EFFECT OF IMPLEMENTATION OF J2ME - BASED MOBILE ENCYCLOPEDIA “ <i>CHEMISTCLOPEDIA</i> ” AS INDEPENDENT CHEMISTRY LEARNING MEDIA FOR SENIOR HIGH SCHOOL STUDENTS (Melita Rachma and Jaslin Ikhsan).....	346
THE ANALYSIS OF MATHEMATICS TEACHERS’ DIFFICULTIES IN SOLVING MATHEMATICAL PROBLEMS (Fauzia Rahmawati, Heri Retnawati).....	353
 INNOVATIVE TEACHING LEARNING IN LANGUAGES AND ART	
THE INTRODUCTION OF INDONESIAN CULTURE IN BAHASA INDONESIA CLASS FOR SPEAKERS OF OTHER LANGUAGES BY USING THE CULTURAL COMPONENTS AT ISI YOGYAKARTA (Prima Dona Hapsari).....	361
IDENTIFYING THE CHALLENGES OF UNDERGRADUATE STUDENTS IN WRITING RESEARCH PROJECTS : A PRELIMINARY STUDY (Eny Winarti)	374
PROMOTING <i>SARJANA</i> [UNDERGRADUATE] PAPER WRITING SKILL THROUGH THE INDIGENOUS WISDOM <i>KATRESNANISM</i> BASED APPROACH : A CASE STUDY IN POETRY CLASS OF PBI USD YOGYAKARTA (Antonius Herujiyanto).....	383
A GRAMMATICAL ANALYSIS OF CODE SWITCHING PRACTICES EMPLOYED BY ENGLISH TEACHERS OF SENIOR HIGH SCHOOLS IN YOGYAKARTA (Margana).....	396

INNOVATIVE TEACHING LEARNING IN BASIC EDUCATION

BIG BOOK , A TEACHING ALTERNATIVE FOR IMPROVING CHILDREN’S READING READINESS IN KINDERGARTEN (Sri Tatminingsih)	417
BIOTECHNOPRENEURSHIP : AN INTRODUCTION OF BIOTECHNOLOGY AND ENTREPRENEURSHIP PROGRAM IN ADDRESSING BEHAVIORAL PROBLEMS OF GIFTED CHILDREN FROM TUMBUH INCLUSIVE ELEMENTARY SCHOOL , YOGYA- KARTA, INDONESIA (Wahyu Wido Sari and Admila Rosada)	432
THE INFLUENCE OF PARENTS’ ATTENTION ON STUDENTS’ ACHIEVEMENT IN ENGLISH AT SDN 47/IV JAMBI CITY (Sri Marmoah).....	446
OPTIMIZING THE LEARNING OUTCOMES FOR ENGLISH YOUNG LEARNERS THROUGH DEVELOPING A CHILD-FRIENDLY TEXTBOOK MODEL (Sri Setyarini).....	455

Melissa Parker
University of Northern Colorado, USA
University of Limerick, Ireland

Teacher Education Development: Informed Through Practice- Based Research

Melissa Parker
University of Northern Colorado, USA
University of Limerick, Ireland

What to Do?

- “If you had five million rupiah to spend either applying current research about teacher education OR conducting more research on teacher education, which would you choose?”
- It is as much about what we do with what we know, as what we know.

Teacher Education Purpose

- Develop teachers who matter
 - Possess professional capital (Hargreaves & Fullan, 2012)
 - Help **all** students achieve (Zimpher et al., 2010)
 - Have a strong sense of moral purpose (Hargreaves & Fullan, 2012)
- Programs that prepare these teachers:
 - Provide teachers core ideas & a broad understanding of teaching and learning (Darling-Hammond & Bransford, 2005)
 - View teachers as lifelong learners (Armour, 2010)
 - Educate teachers to teach well to the first students they encounter (Darling-Hammond & Bransford, 2005)

Presentation Overview

- Selected findings from research base
 - Teacher education
 - Physical education teacher education
- Links between research base and informed practice
- Outcomes of evidence-based programs
- The struggle between the known and reality

Selected Findings

- Connection and coherence
- Content knowledge
- The learning process and situating learning in productive contexts
- Clinical experiences
- Analysis of teaching and learning

Connection and Coherence

Selected findings

- Graduates of coherent programs are better prepared to teach (Howey & Zimpher, 1989; Lawson, 1983; Metzler, 2000)
- Not as congruent as we think (Blankenship et al, 2010)
- Hard to achieve and very fragile (Parker et al., 2006)
- Assessment of coherence allows for a comprehensive analysis & program improvement (Galluzzo & Craig, 1990)

Informed Practice

- PETE faculty develop a shared vision
- Cohort groups of students
- Class syllabi are programmatic; teaching is individualistic
- Faculty engagement in professional learning together around selected topics
- Faculty self-study

Content Knowledge

Selected findings

- CK, PK, & PCK necessary (Shulman, 1987; Smith et al., 2012)
- Typically low among physical education teachers (Kim et al., 2009; Stuhr et al., 2009)
- Ability to develop content progressions positively impacts student learning (Rink et al., 1992)
- Reduced curricular space in programs to teach content (Bugler, 2001)

Informed Practice

- Sufficient courses and time in courses to acquire
- Courses that link subject matter content with the teaching of subject matter
- Coherent focus
- Focus on not only learning the skill, but the knowledge to teach the skill
- Infuse content throughout rather than segregate

The Learning Process

Selected findings

- There is a readiness to learn (Bransford et al., 1999; Bruner, 1977)
- Learning in and from practice is powerful (Ball & Cohen, 1999)
- Learning is reinforced when applied (NRC, 2000)
- Contextually situating learning aids in developing expertise (Ball & Bass, 2000)
- Learning in communities provides for learning from teaching (Desimone, 2000; Neutzling et al., 2010)

Informed Practice

- Sequence courses
- Field experiences & courses directly linked
- Frequent field experiences to apply content
- Content specific pedagogy courses
- Development of cohort groups who learn together

Clinical Experiences

Selected findings

- Early and frequent field experiences increase learning (Denton, 1982)
- Viewed as most powerful (Kinchin, 2009; Zimpher et al. 2010)
- Student teaching (teaching practice) in its current form doesn't achieve its goals (Doolittle et al., 1993)
- Teaching practice placement needs to be congruent with the university (McCullick, 2001)

Informed Practice

- Faculty with students in the field
- Clear goals & purposes
- Frequent debrief
- Alter student teaching to allow pairs to be together with a teacher congruent with the university
- Design & implement professional development with teachers

Analysis of Teaching & Learning

Selected findings

- Analysis of teaching allows for reflection and thinking about the complexity of the classroom (Ball & Cohen, 1999)
- Analysis of learning provides insight into what TCs learn as they learn to teach (Hammerness et al., 2012 Sherin & Han, 2002)

Informed practice

- Need multiple opportunities to analyze teaching and student learning
- Accountability measures such as work samples
- Alternative methods such as cases, action research, metaphors, & autobiographies

Practiced Referenced Program Results

Program Type



Teacher Candidate Outcome



The Struggle

- Institutional culture and policy
 - Who conducts teacher education?
 - Resources
 - Long memory
 - Hard to change



Conclusions

- Successful programs despite “barriers associated with program, university, and regulatory contexts” (Darling-Hammond & Bransford, 2005, p. 453)
- One essential aspect to change in schools, and resultantly in student achievement, is teacher education programs conceived and delivered based on the best research informed practices available.

- Insanity is doing the same thing over and over again and expecting different results. - Albert Einstein
- Is that the fate of teacher education?

Kevin Patton, Ed.D.
Department of Kinesiology
California State University Chico, USA

Developing Educational Research: Addressing Research Quality

Kevin Patton Ed.D.

Department of Kinesiology

California State University Chico, USA

Presentation Outline

- ❑ What is the purpose of research?
 - ❑ What is good research and who says it is good?
 - ❑ What do we hope to accomplish with research?
 - ❑ Who do we serve with our research?
 - ❑ Who should we serve?
 - ❑ What are the researchers' responsibilities to the field, to colleagues, to practitioners, and to others?
-

Multiple Sources

- **Many books and authors give advice about research:**
 - Mechanics of doing research (design, data collection, and analysis)
 - **Doing scientific Inquiry** (Bogdan & Biklen, 2003; Denzin & Lincoln, 2000, 2005; Locke, Silverman & Spirduso, 2010; Robinson & Lui, 2005; Seidman, 1998; Schwandt, 2001; Thomas, Nelson & Silverman, 2005)
 - **Particularly helpful:**
 - Locke, Silverman, & Spirduso (2010). *Reading and understanding research*. 3rd Edition. Sage.
 - Locke, Spirduso, & Silverman (2007). *Proposals that work*. 5th Edition. Sage.

My Journey

- **What have I learned and where do I stand on issues of quality for the educational research community?**
 - Teacher and Teacher educator
 - Continue to work closely with teachers, prospective teachers, schools and physical education programs
 - Background and context makes a difference
-

Examples of Questions Asked in my Own Research

1. What factors facilitated the creation and maintenance of a teacher community of practice through the process of curriculum development? (Parker, Patton, Madden, & Sinclair, 2010)
2. What are professional development facilitators' collective knowledge and experience with ongoing physical education professional development, specifically regarding conceptions of their role in the process. (Patton, Parker, & Neutzling, 2012)
3. What are the perspectives of program facilitators and participants of Irish physical education communities of practice created to address teachers' interests. (Parker, Patton, & Tannehill, 2012)
4. What are the dynamics of promoting sustained physical education program reform and continuing teacher professional development through school-university partnerships? (Patton, 2012)
5. What are children's views of and meanings assigned to physical activity and physical activity experiences as embedded in the environments of their daily lives? (Patton & Parker, 2013)

Principles to Guide Our Thinking About the Notion of Quality Research

- **Principle 1: Pose significant questions that can be investigated empirically**
- **Principle 2: Link research to theory**
- **Principle 3: Use methods that permit direct investigation of the question**
- **Principle 4: Provide coherent, explicit chain of reasoning**
- **Principle 5: Disclose research to encourage professional scrutiny and critique**

(Locke et al., 2010; O'Sullivan, 2007)

Principle 1: Pose Significant Questions that can be Investigated Empirically

- **The nature of the questions posed:**
 - Research proceeds by posing significant questions
 - Multiple answers that lead to hypotheses or conjectures that can be examined or tested and refuted
 - **How questions are posed:**
 - The formulation of a problem is often more essential than its solution
 - **What are good questions?**
-
-

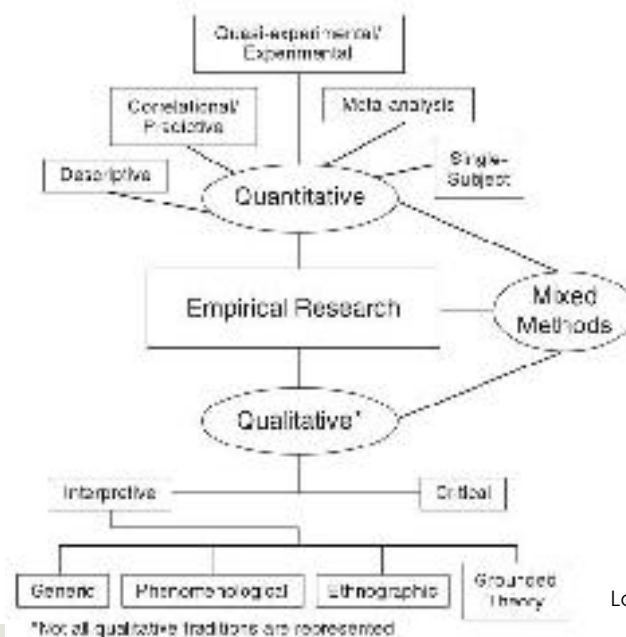
Principle 2: Link Research to Theory

- **Regardless of the type of research, it must link to some conceptual frame**
 - Essential to advancing the field
 - **Being open to multiple perspectives and seek to understand other scholar's point of view.**
 - Seek what we have in common, as nobody has a corner on truth
-

Principle 3: Use Methods that Permit Direct Investigation of the Question

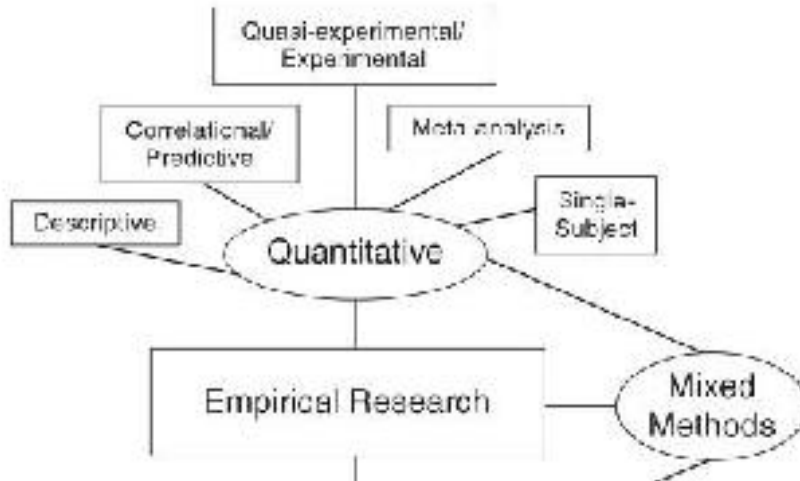
- Methods, design for collecting data, and the analysis should be selected in light of a research problem
 - Should directly address question
- Permits logical reasoning to reach justifiable conclusions
- Most importantly, the method to what is being investigated

Organization of Empirical Research



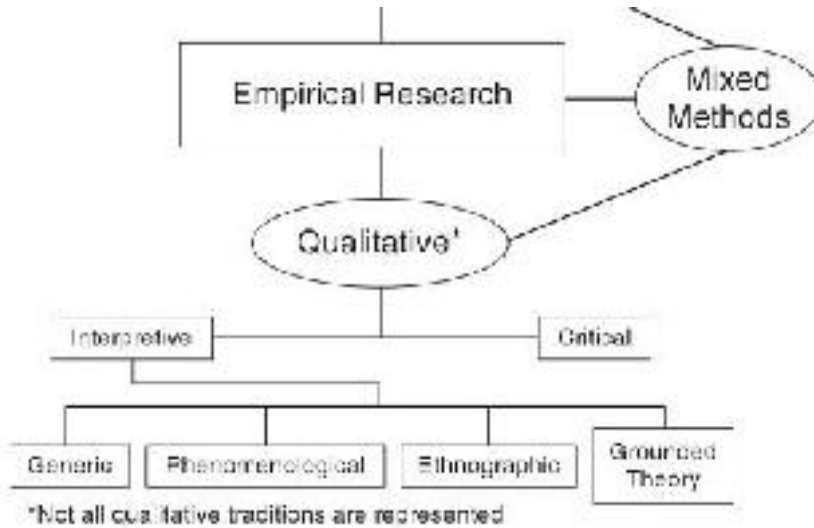
Locke, et al., 2010

Empirical Research: Quantitative



Locke, et al., 2010

Empirical Research: Qualitative



Locke, et al., 2010

Principle 4: *Provide Coherent, Explicit Chain of Reasoning*

- ▣ **Must address how conclusions reached:**
 - ▣ **How was the evidence judged to be relevant?**
 - ▣ **How were alternative explanations considered or discarded?**
 - ▣ **How were the links between data and the conceptual or theoretical framework made?**

Principle 5: *Disclose Research to Encourage Professional Scrutiny and Critique*

- ▣ **A characteristic of scientific knowledge is its contested nature**
 - ▣ **Professional review and criticism is *essential* to scientific progress** (Shavelson & Towne, 2002)
 - ▣ **Goals of research reporting:**
 - ▣ **Open the study to examination, criticism, review, and replication**
-

Responsibilities of Researchers and the Research Community

▣ Lessons learned:

- ▣ Contribute to development of good social order (i.e., just, equitable)
- ▣ Inform important educational problem or issue
- ▣ Communicate in a way that compels other to act
- ▣ Enrich the body of knowledge in the field

Some Guidelines...

1. Write when you have something substantive to say that you think can inform others.
2. Speak and write simply and parsimoniously.
3. Pay attention to the bigger picture.
4. Don't try to get too much out your data.
5. Give your students and colleagues credit.
6. Be informed.

O'Sullivan, 2007

Some Guidelines...Continued

7. Seek commonalities with your colleagues.
8. Read outside your field and help draw connections to our field.
9. Be passionate about your work and humble in that we are all limited by our experiences and our abilities to have the right answers.
10. Honor your participants and your audience when presenting ideas in the public domain.

O'Sullivan, 2007

Conclusions

- ▣ Discuss issues around the phrase of 'quality educational research'
 - ▣ Doing good work and contributing to the field is about consistency, commitment and flexibility
 - ▣ Advancement of the wellbeing of children and youth through the creation and dissemination of knowledge, informing policy and practice
-

New Trends in Educational Research Methodologies

Julismah Jari (Ph D)
Faculty of Sport Science and Coaching
Sultan Idris Education University
MALAYSIA
julismah@cski.cpsi.edu.my

Abstract

Insight professionals, who want to be successful researcher in 2013 and beyond, need to embrace new research methods, change their research process to deliver deeper and more aligned insights. The choice of a certain research approach depends on the appropriateness of research objectives/questions and research problem; and not on the fact that there is a method which is genuinely better than another. It is about paradigm on multiple, hybrid, synergistic, integrated, cultural, and mixed qualitative - quantitative empirical research approaches. Some of the trends influencing change are: the proliferation of online methodologies, with resulting hybrid qualitative - quantitative approaches; a shift from the respondent to participant model; the impact of neuroscience and physiological measurement; the continued push to faster/cheaper research. The ethnography revival; the developments in new types of focus groups (such as deliberative) and depth interviews (including via mobile phones), the expanded use of projective techniques; the technological developments: online tools (bulletin boards, live chats groups, immersive research, blogs), handheld voting machines, user-generated content (webnography, social networking), video diaries; the tie-ins to physiological measurements (voice analysis, eye tracking, etc.). New forms of analysis: the role of semiotics, analysis software, developments in discourse analysis. The methodology of mixed research has developed substantially and is a swiftly emerging research paradigm. Today, the number of publications using mixed methods research designs is quite high e.g., 24% in *American Educational Research Journal*, 1999 through 2008 and *International Journal of Multiple Research Approaches*, 2010-2012. Educationist need to embrace new research methods, change their research process to deliver deeper and more aligned insights, and build out collaborative relationships across the information supply chain. Researcher and practitioner need perspectives on multiple, hybrid (outcome of unusual blending), synergistic (combined effect), integrated and cultural research approaches. This new revolution in the new millennium, emerging research need to weaves various methodologies mediums into a cohesive whole.

Introduction

No one can predict the future. But that's never stopped us from trying. We can guess or even make a few educated predictions—perhaps publish reports on educational performance. But sometimes the best and most accurate means of projecting what's next or new trend about education is simply to carry out an educational research.

Educational research refers to a variety of methods in which individuals evaluate different aspects of education such like student learning, teaching methods, teacher training, and classroom dynamics (Ladino, Spaulding, Voegtle, 2010), IAR: Glossary, 2011). Educational research embodies various disciplines with rich histories of perspective and practice and is linked directly to the human condition simply because it involves people 'who are by far the most complex of all organisms' (Gay, Mills, & Airasian, 2012, p. 5). The varieties of disciplines include psychology, sociology, anthropology, and philosophy (Yates, 2004).

Anderson, & Arsenault (1998), have outlined ten characteristics that can be used to further understand what the field of educational research entails.

- a. Educational research attempts to solve a problem.
- b. Research involves gathering new data from primary or first-hand sources or using existing data for a new purpose.
- c. Research is based upon observable experience or empirical evidence.
- d. Research demands accurate observation and description.
- e. Research generally employs carefully designed procedures and rigorous analysis.
- f. Research emphasizes the development of generalizations, principles or theories that will help in understanding, prediction and/or control.
- g. Research requires expertise—familiarity with the field; competence in methodology; technical skill in collecting and analyzing the data.
- h. Research attempts to find an objective, unbiased solution to the problem and takes great pains to validate the procedures employed.
- i. Research is a deliberate and unhurried activity which is directional but often refines the problem or questions as the research progresses.
- j. Research is carefully recorded and reported to other persons interested in the problem.

The overlap in disciplines creates a broad range from which methodology can be drawn. The findings of educational research also need to be interpreted within the context in which they were discovered as they may not be applicable in every time or place. Educational researchers have come to the consensus that, educational research must be conducted in a rigorous and systematic way (Anderson, & Arsenault, 1998), although what this implies is often debated (Kincheloe, 2001).

Researchers need to identify methodologies that are transforming education and project how they will use them into the future. With several educational options available to students today, newer trends are emerging in this field which has completely changed the traditional hold perceptions about education.

Given the growing momentum of these trends, what does it mean for students, teachers, schools, and the education community at large? Teachers' and students' relationships are changing, as they learn from each other. Teachers' roles are shifting from owners of information to facilitators and guides to learning. Educators are finding different ways of using class time. Introverted students are finding ways to participate in class discussions online. Different approaches to teaching are being used in the same class. Students are getting a global perspective.

Amid a culture of flexible innovation, learners shape their own learning experiences, drawing upon a rich learning to identify resources that meet their needs. Smart networks of resource providers form lightweight, modular learning grids to offer flexible learning experiences as demand dictates. Gone are the days when the adults involved in learning primarily served as teachers, administrators, and tutors? Now a whole host of learning agents support learning, with some specializing in particular content and others focuses on pedagogy or assessment design. Networked collaboration is the norm.

Technology advances today have not only changed society, but also helped change and develop teaching and learning methods. And in the future, we can expect that technology's role will increase as new distance learning models enable innovation at the very heart of the teaching and learning relationship. Information communication technology has been used as a communication tool, a social tool, a work tool and now an educational tool.

In relation, an integrated approach to research methodologies is both necessity and increased access to technology advances. So, this new revolution in the new millennium, emerging research need to weaves various methodologies mediums into a cohesive whole. It is to advocate measures to improve the innate quality of humankind which are entirely voluntary. A future generation is about humanitarian evolution that strives to leave a genuine legacy of love to future generations: good health, high intelligence, and noble character. Therefore, the demand placed on researchers to embrace new trends in educational research methodologies.

Research Approach and Methods

There are many research approaches such like quantitative research, qualitative research and mixed-method research each with differing underlying approaches, tools and techniques. Quantitative, qualitative and mixed-method approaches have different disciplinary origins, developed distinctive tools and each has developed its critique of the other approaches.

Quantitative research refers to the systematic empirical investigation of social phenomena via statistical, mathematical or computational techniques (Criven, 2008). The objective of quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships (Huntz, & Yirin, 2008).

Franklin, (2012) in his book title *Understanding Research: Coping with the Quantitative-Qualitative Divide* stated that quantitative data is any data that is in numerical form such as

statistics, percentages, etc. This means that the quantitative researcher asks a specific, narrow question and collects numerical data from participants to answer the question. The researcher analyzes the data with the help of statistics. The researcher is hoping the numbers will yield an unbiased result that can be generalized to some larger population.

Quantitative research is widely used in social sciences such as: psychology, economics, sociology, marketing, and political science, and information technology, and less frequently in anthropology and history. However, research in mathematical sciences such as physics is also 'quantitative' by definition, though this use of the term differs in context. In the social sciences, the term relates to empirical methods, originating in both philosophical positivism and the history of statistics, which contrast qualitative research methods (Massachusetts Institute of Technology, 2011, p.4)

Qualitative research is a method of inquiry employed in many different academic disciplines, traditionally in the social sciences, but also in market research and further contexts (Denzin, & Lincoln, 2005). Qualitative researchers aim to gather an in-depth understanding of human behavior and the reasons that govern such behavior. The qualitative method investigates the *why* and *how* of decision making, not just *what*, *where*, *when*. Hence, smaller but focused samples are more often needed than large samples.

Qualitative researchers face many choices related to data collection (Savin Baden, & Major, 2013). The choices range from grounded theory practice, narrative, storytelling, classical ethnography, or shadowing. Qualitative methods are also loosely present in other methodological approaches, such as action research or actor-network theory. Forms of the data collected can include interviews and group discussions, observation and reflection field notes, various texts, pictures, and other materials.

Focus groups, in-depth interviews, content analysis, ethnography, evaluation and semiotics are among the many approaches that are used, but qualitative research in its most basic form involves the analysis of any unstructured data, including: open-ended survey responses, literature reviews, audio recordings, pictures and web pages.

Mixed methods research is a field of inquiry that uses both qualitative and quantitative methods to answer research questions within a single study. The application of mixed methods research in social sciences can be traced at least to the beginning of the 20th century. The research is considered "mixed" because it uses quantitative and qualitative approaches in one or several of the following ways: it combines different types of research questions, data collection procedures, data, analytical approaches, or conclusions. One of the main advantages of mixed methods research is its ability to unite exploratory and confirmation research in other words, it allows generating and testing a theory in the same study (Creswell, & Plano Clark, 2010).

Pragmatists are in favor of integrating mixed methods within a single study they argue that both quantitative and qualitative methods have their strengths and weaknesses (Kimberly, 2011). The integration can take various forms such as contrasting, comparing, combining, or building one type of conclusion on the other. One of the main manifestations of pragmatism is the notion that research questions should be the central issue in any investigation and should drive the choice of

methods. Methods are viewed as tools for the answering of research questions and not vice versa (Kimberly, 2011).

Another justification for mixed methods research is the principle of triangulation, which implies that a single social phenomenon is studied from different points of view. If research findings converge, their validity is increased. They can also complement each other solving different parts of the same "puzzle" and providing deeper understanding of a phenomenon under investigation (Marguerite, Dean, & Katherine, 2010). Unexplainable divergence in findings is also useful because it can lead to the rejection of previously accepted theoretical assumptions that turned out to be false and suggest directions for future research. There are different possibilities to combine quantitative and qualitative research, and various research designs are associated with them. Concurrent (triangulation) design with merged results is a study in which two types of data are gathered and analyzed independently (utilizing qualitative and quantitative methods). Subsequently, the results are merged in the discussion section to achieve deeper understanding (Marguerite, Dean, & Katherine, 2010).

There is evidence from the findings that there is some confusion and inconsistencies in the views of participants about the underlying methodological and philosophical principles associated with carrying out research in general and mixed methods research in particular (Franklin, 2012). One source of the confusion might be the continuing use of the qualitative/quantitative distinction. It is recommended that a re-conceptualizing of the research process is now needed, based on characteristics of integration and not just the mixing or combining of different approaches to research. It is about paradigm or multiple, hybrid, synergistic, integrated, cultural, and mixed qualitative - quantitative empirical research approaches (Franklin, 2012).

Insight professionals, who want to be successful researcher in 2013 and beyond, need to embrace new research methods, change their research process to deliver deeper and more aligned insights. Build out collaborative relationships across the information supply chain within educational research. The choice of a certain research approach depends on the appropriateness of research objectives/questions and research problem; and not on the fact that there is a method which is generally better than another. It seems appropriate that the choice of the different methods is theoretically justified, based on the concept that each method has weaknesses.

New Trends in Educational Research Methodologies

We live in a world where technological innovation and global competition are increasing at a pace never before seen. The computer and the internet's evolution these past few years have been staggeringly fast. Not only is technology playing a greater role at all stages of our research, so are new techniques and methodologies. Some of the trends influencing change are: the proliferation of online methodologies, with resulting hybrid qualitative-quantitative approaches; a shift from the respondent to participant model; the impact of neuroscience and physiological measurement; the continued push to faster/cheaper research. At the same time, with the growth of social media I see that respondents are more willing and able to share their lives, which extend the opportunities for researcher to dive into their world, researcher's thinking and hence for his or

her decisions about which methodology to follow and methods to apply when researching a problem.

A review of key trends influencing the development of qualitative research

More than ever, qualitative research is in the process of rapid change. Not only is technology playing a greater role at all stages of our research, so are new techniques and methodologies. Such like, the ethnography revival – what's behind its growing use, what it is (and isn't). Another is, the developments in “traditional” qualitative techniques – new types of focus groups (such as deliberative) and depth interviews (including via mobile phones), the expanded use of projective techniques. Next, is the technological developments – online tools (bulletin boards, live chats, groups, immersive research, blogs), handheld voting machines, user-generated content (weblogs, social networking), video diaries. Finally are the tie-ins to physiological measurements (voice analysis, eye tracking, etc.). New forms of analysis: the role of semiotics, analysis software, developments in discourse analysis.

An education revolution beckons in the digital age, the digital ethnography. With the increase in and embedding of digital and networked media in everyday life, researchers turned their gaze to the symbolic and cultural elements of technologies. From studying online game communities, locative and social media to YouTube and mobile media, ethnographic approaches to digital and networked media have helped to elucidate the dynamic cultural and social dimensions of media practice. Ethnography has been useful in conceptualizing and analyzing the often uneven and messy role of ‘participation’ from various perspectives (i.e. players, users, producers) and the types of attendant cultural practices across online and offline spaces. In addition, the focus upon participation and reflexivity has been critical to ethnography's incorporation in disciplines ranging from cultural studies, media studies, design internet, and games studies.

Featured project of digital ethnography

Title: The role of lifestyle television in transforming culture, citizenship and selfhood in China, Taiwan, Singapore and India

Researcher: Martin, Lewis, & Sun (2010)

Description: This research project sees lifestyle advice programming as a barometer of broader cultural changes currently transforming social life in Asia. In such programs, entertainment media addresses itself in a uniquely direct way to the everyday practice of ordinary social life: these programs are etiquette manuals for the 21st century. Researchers are interested in what the rise of such programming can tell them about broader shifts in contemporary Asian societies in relation to identity, culture and citizenship.

What kinds of tele-modernities are being represented and promoted through lifestyle shows across these varied locations? Does the rise of lifestyle advice TV in Asia prove the triumph of global consumerism and westernized taste cultures? Or does it instead indicate highly contested, contingent, and localized reworking

of market-based governance and cultural citizenship? To what extent does lifestyle advice television and culture travel between the various sites in our study as well as between these sites and others in the Asian region? Does the mobility of lifestyle advice media consolidate regionally specific formations of lifestyle culture within capitalist East and South Asia?

Methodology: This project addresses these complex questions through a large-scale comparative study of lifestyle advice programming in China, India, Taiwan and Singapore. We apply a three-pronged method in each site, focusing on industry, textual and audience analysis. Hundreds of hours of television have been recorded and interviews have been conducted in all four sites with key TV industry professionals (in Delhi, Mumbai, Shanghai, Bengbu, Singapore and Taipei) and with TV audiences (in Mumbai, Shanghai, Bengbu, Taipei and Singapore). Based on analysis of this data, this project will produce the first ever large-scale, transnational comparative study of life advice television in Asia as indicative of globally interconnected yet specific formations of media modernity.

Title: Summer Research Experience for Undergraduates in Ethnography and Geographic Information Systems

Researcher: The Western Apache Ethnography and Geographic Information Systems Research Experience for Undergraduates is a National Science Foundation REU Site, and receive major funding from the National Science Foundation under Grant No. 1004556 (2010-2013).

Description: In partnership with the White Mountain Apache Tribe, the University of Arizona hosts the Western Apache Ethnography and Geographic Information Systems Research Experience for Undergraduates each summer, 2010-2013. A National Science Foundation-supported REU Site, this field school introduces undergraduate students to ethnographic field research and to the use of Geographic Information Systems in the analysis and interpretation of ethnographic data.

Methodology: Participants engage in community-based participatory research, working with Western Apache elders, tribal natural resource managers, and heritage program personnel to contribute to the Western Apache tribes' efforts to document cultural histories, traditional and local ecological and geographic knowledge, and issues of historic and contemporary resource management. Students' final projects provide content that will be included in a Western Apache cultural and historical atlas.

Technological developments : online tools (bulletin boards, live chats groups, immersive research, blogs), handheld writing machines, user-generated content (webography, social networking), video diaries.

Technology has affected society and its surroundings in a number of ways. In many societies, technology has helped develop more advanced economies (including today's global economy) and has allowed the rise of a leisure class. Many technological processes produce unwanted by-products, known as pollution, and deplete natural resources, to the detriment of the Earth and its environment. Various implementations of technology influence the values of a society and new technology often raises new ethical questions. Examples include the rise of the notion of efficiency in terms of human productivity, a term originally applied only to machines, and the challenge of traditional norms.

Title: A Study on the Efficacy of a Thin Client School Technology Infrastructure Final Report

Researcher: Daniel Light, & Andrew Gersick (2003)

Description: In this study, we examined the impact ClassLink's thin client infrastructure has on network administration, on the management of student work products and practices, on communication patterns within the school community, and on technology budgeting issues.

For our investigation, we selected Union City, New Jersey, an urban, Northeastern district, where ClassLink has been working for the last three years. Union City is a national leader both in terms of systemic educational improvement and large-scale technology integration (Honey, Hawkins et al. 1998; EDC Center for Children and Technology 2000). Three middle schools volunteered to participate in the study. One school has been using ClassLink's thin client networking solution for three years. The other two have local area networks (LANs) not based on thin client technology.

Methodology: We designed a research program of interviews, observations and surveys to build a broader picture of the relationship between technology infrastructure and the learning environment. By looking at three schools in the same district with comparable student and teacher populations, a common curriculum, and a common approach to technology, we are able to make robust observations about the particular affordances and liabilities of ClassLink's thin client infrastructure.

Conclusions: An effective, functional infrastructure is a necessary but not sufficient condition for a rich technology environment. In the best technology environments, the technology itself fades into the background, allowing teachers and students to focus on learning (Hawkins et al. 1996). The questions we considered in this study were whether ClassLink reduces common obstacles and impediments to technology integration, and if its central server structure affords other valuable

opportunities to teachers and students. In nearly every dimension we investigated, the answer is an unqualified yes.

Most current methodology publications still tend to reinforce a polarized view and understanding of research methodologies with a continuing use of qualitative and quantitative distinctions (Muijs, 2004; Silverman, 2004). Even publications specifically about mixed methods research continue to draw on a traditional paradigmatic explanation, referring for example to *quantitative methods and qualitative procedures* (Creswell, 2003). Claims are made that it is legitimate to use methods drawn from both approaches and to *mix* these in the same study.

Mixed Methods Research

Mixed methods research is becoming increasingly articulated, attached to research practice, and recognized as the third major research approach or research paradigm, along with qualitative research and quantitative research. Today, the number of publications using mixed methods research designs is quite high e.g., 24% in *American Educational Research Journal*, 1999 through 2008 (Riss & Onwuegbuzie, 2010).

In studies using mixed methods research approaches such steps are rarely undertaken. For instance, Leech and Onwuegbuzie (2009), when discussing the articles of a special issue of *International Journal of Multiple Research Approaches* devoted to mixed research for novice researchers, sketched 13 steps of a mixed method research procedure: '(a) determining the mixed goal of the study; (b) formulating the mixed research objective(s); (c) determining the rationale(s) for mixing quantitative and qualitative approaches; (d) determining the purpose(s) for mixing quantitative and qualitative approaches; (e) determining the mixed research question(s); (f) selecting the mixed sampling design; (g) selecting the mixed research design; (h) collecting quantitative and qualitative data; (i) analyzing the quantitative and qualitative data; (j) legitimating the mixed research findings; (k) interpreting the mixed research findings; (l) writing the mixed research report; and (m) reformulating the mixed research question(s)' (p. 106).

Mixing Methods in Innovation Research

Title: Studying the Process-Culture Link in Innovation Management

Researcher: Meissner, J. O. & Sprenger, M. (2010)

Description: Two trends in innovation management have influenced the basic idea of this paper. The first trend shows increased attempts by managers to utilize linear innovation processes derived from literature and from practice. The second trend is an increasing acceptance of the dynamics created in an "innovation culture," as being one of the key drivers of innovation. Both approaches partially contrast each other. Researching the literature in more detail, we found that studies explaining the link between innovation culture and innovation project management are rare. Indeed there is a study by Shana Brown and Kathleen Eisenhardt (1995) which gives an excellent overview of innovation management research, but again the issue of "culture" was lacking. This missing link between innovation process

design and innovation culture at the firm-level provides the theoretical framework of this paper.

Methodology: Behind the scenes of innovation management studies, we realized a methodological gap existed between the research of innovation cultures and their impact upon an organization's innovation processes. Thus, we applied a methodological mix of problem centered interviews, structural analyses, and context analyses to study the phenomenon. We conducted an interview-based single case study in a Swiss telecommunications company. From these methodologies we created a thematic landscape comprising relational topics of the innovation dynamics within an innovation project in the company (one year duration) and briefly described each topic. The main finding in our study is the dynamic role-model that innovation managers in large service firms have to apply to succeed in their innovation management work. Thus, our methodological mix proved to be helpful, although some weaknesses remain to be solved in the future.

Title: A mixed research study of pedagogical approaches and student learning in doctoral level mixed research courses.

Researcher: Onwuegbuzie, A. J., Frels, R. K., Leech, N. L., & Collins, K. M. T. (2011)

Description: The purpose of this mixed research study was to compare and to contrast pedagogical approaches used by instructors in mixed research courses, as well as the learning experiences of students enrolled in a mixed research course.

Methodology: This investigation involved the use of a fully mixed concurrent dominant status design and a mixed sampling design that involved a combination concurrent, identical, sequential, nested, and multilevel sampling. The teacher participants were eight instructors of mixed research courses from institutions around the United States who were purposively selected via critical case sampling such that they represented first generation instructors of mixed research courses. These participants were interviewed either face-to-face or remotely (e.g., via Skype). The student participants were 48 doctoral students enrolled in one of three sections of a doctoral-level mixed research course taught by one of the teacher participants who provided both quantitative and qualitative data.

Conclusions: Among the numerous findings emerging from the instructor interview data was the emergence of a three-dimensional model for categorizing and organizing pedagogical approaches used in mixed research courses. For the student participants, the number of prior research methodology courses was positively related to the quality of mixed methodological dissertation research proposals. Further, the vast majority of students (91.7%) reported positive course experiences and expressed positive perceptions about mixed research.

Design-Based Research

Harah and Squire (2004) argue that Design-Based Research (DBR) is a context where the research moves beyond simply observing to involve systematically engineering learning contexts in ways that allow researcher to improve and generate evidence-based claims about learning (Van den Akker et al. 2006). One of the problematic issues of DBR is that there are many labels attached to it, such as 'design experiments', 'design research', and 'developmental research'.

Design-Based Research is a new paradigm or methodology in educational research that is based on both theory and previous research with the aim of improving educational practice. It is conducted in the real, complex, and messy learning/teaching contexts through interactive cycles of analysis, design, development, and implementation mediated by some interventions. It originates from real educational problems and/or challenges, and ends with design principles and/or learning theories subject to continuous refinement and improvement. Thus, the products/outputs of DBR are design principles, learning theories, interventions, curricular products, instructional tools, and/or practical solutions/prescriptions.

Examples of Design-Based Research

Title: SCRATCH-ED: Working with teachers to develop design-based approaches to the cultivation of computational thinking

Researcher: Martin, F., & Tally, B. (2013)

Description: International Center for Children and Technology (ICCT) serves as the evaluator of this National Science Foundation DRK-12 Research and Development project, awarded to Mitch Resnick and colleagues at the MIT Media Lab in 2010. In 2003, Dr. Resnick's research group was awarded a grant from the National Science Foundation to develop a new programming environment, called Scratch, which enables young people to create their own interactive stories, games, animations, and simulations, and share their creations with one another, online. Much of the early use of Scratch, following its launch in 2007, took place in homes and after-school settings, but some educators began to use Scratch in their classrooms. The ScratchEd project was initiated to develop, implement, and study new strategies for professional development and collaboration among educators, so that they are better able to support STEM learning in the context of Scratch.

Title: A Report on the 'Technological Enhancements Project Evaluation: Deepening early learning experiences through technology

Researcher: Francisco Cervantes (2010)

Description: The report presents information about each of the properties, provides logic models describing each program's components and expected outcomes, describes evaluation methods for data collection and analysis, discusses findings for individual properties, presents a discussion of findings across properties, and

finally offers recommendations to further the use of technological enhancements to increase the reach of media products targeting early literacy skills.

Methods: Researchers collected data from multiple sources to inform the evaluation, including print and Web-based documents; interviews with teachers, parents, and property producers; site visits that included observations of adults and children interacting with each evaluated property; and online surveys.

Qualitative data analysis methods were used to review notes and analyze the range of data collected. Print and web-based material was reviewed and catalogued; interview data were transcribed, entered into Atlas.ti, a qualitative data analysis tool, and coded; observations were reviewed and analyzed for common themes as well as property-specific themes; and survey data were analyzed through generation of response frequencies and review and coding of responses to open-ended questions.

Out of the Blue Enterprises developed an online games extension that built on their existing Super WHY! Summer Reading Camp. The camps provide access to literacy-oriented games, hands-on activities, video viewing that is linked to early literacy skill activities, and computer games that reinforce early literacy skills. The computer games introduce practice targeting a different early reading skill each day. Each game focuses on the particular literacy "power" possessed by one of the four Super WHY! Characters including: alphabet power, spelling power, word power, and reading power.

Conclusions: Overall, responses from camp facilitators were positive with regard to the content, design, and implementation of the Super WHY! Summer Reading Camp with technology add-on. The program was described as engaging, fun, colorful and stimulating for campers, and also offered a chance to engage with technology. Some facilitators stated that the program included games that were too challenging for their campers and others suggested that games requiring more basic early literacy skills were more popular choices for participating children.

Title: Rural Virtual Schooling: Research on the Teaching and Learning Experience

Researcher: Michael Barbour (2010)

Description: Research on Virtual School Site Facilitator project has attempted to build virtual school competencies by developing a tool that can be shared within the teacher education community. Initial findings suggest that such a tool can influence future educators thinking about teaching and learning in the 21st century.

Methods: Distance Education & Rural Schooling had randomly selected 39 school districts. 85% of the schools districts had used or were using distance education. Another 81% were using it to offer advanced-level courses. While, 35% using it for foreign language, 12% for algebra. The most common barriers or district barriers

– not needed, funding, not a priority, logistical barriers – scheduling, difficult to implement, personnel barriers – not trained to support distance education or not available to support distance education.

Conclusions: The study thus far has found that the program reduced drop-out rate (i.e., student in an individual course and schools leaving the distance program), but did not appear to affect student learning. Based on the qualitative data, the teachers felt that the presence of a facilitator was crucial. Thus, the study creates a training program for school - based language arts facilitators in rural schools in North Carolina.

Design-based research requires interactive collaboration among researchers and practitioners. Without such collaboration, interventions are unlikely to affect changes in the real world context (Design-Based Research Collective, 2003; Reeves, Herrington, & Oliver, 2005; Wang & Hannafin, 2005). Also, design-based research usually takes a long period of time because theories and interventions tend to be continuously developed and refined through an iterative design process from analysis to design to evaluation and redesign (Bannan-Ritland, 2003; Design-Based Research Collective, 2003; Van den Akker & et al., in press; Wang & Hannafin, 2005). This ongoing recursive nature of the design process also allows greater flexibility than do traditional experimental approaches. Design-based research is integrative because researchers need to integrate a variety of research methods and approaches from both qualitative and quantitative research paradigms, depending on the needs of the research.

Ongoing support for the development of programs and outreach efforts that include digital tools requires a willingness to experiment with new and existing technologies and with innovative approaches, to integrating media into learning experiences for young children and their care-providers. Undertaking such a development process may be out of the ordinary for many traditional public media producers. Yet fostering an environment where this kind of development is encouraged and supported must take place if new ways of reaching new and existing audiences are to be discovered. I recommend that design-based research continue supporting this kind of innovation and exploration by integrating the following into their current and future programs.

Conclusion

Educational need to embrace new research methods, change their research process to deliver deeper and more aligned insights, and build out collaborative relationships across the information supply chain. Researcher and practitioner need perspectives on multiple, hybrid (outcome of unusual blending), synergistic (combined effort), integrated and cultural research approaches. The challenge will be to find the time and resources to make this happen while handling the increased pressure on the market insights team to deliver faster, better, more insightful, and less costly results.

References

- Anderson, G., & Arsenault, N. (1998). *Fundamentals of Educational Research*. Routledge.
- Bannan-Ritland, B. (2003). The role of design in research: The integrative learning design framework. *Educational Researcher*, 32(1), 21-24.
- Burub, & Squire. (2004). Design-Based Research: Putting a Stake in the Ground. *The Journal Of The Learning Sciences*, 13(1), 1-14.
- Harbour, M. K. (2010). *Royal virtual schooling: Research on the teaching and learning experiences*. A keynote presented to the second annual Innovative and Digital Education and Learning.
- Brown, S., & Eisenhardt, K. (1995). Product development: Past research, present findings, and future directions. *Academy of Management Review*, 20(2), 343-378.
- Cervantes, F. (2010). A Report on the Technological Enhancements Project Evaluation: Deepening early learning experiences through technology. *Center for Children and Technology (CCT)*. New York City.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE: London UK.
- Creswell, J. W., & Plano Clark, V. J. (2010). *Designing and conducting mixed methods research*. Thousand Oaks. SAGE.
- Denzin, N. K. & Lincoln, Y. S. (Eds.). (2005). *The SAGE handbook of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.
- Design-Based Research Collective. (2003). Design-based research: An emerging paradigm for educational inquiry. *Educational Researcher*, 32(1), 5-8.
- Education Development Centre: Center for Children and Technology (2000). *The Center for Children and Technology (CCT)*. New York City.
- Franklin, M.I. (2012). *Understanding research: Coping with the quantitative-qualitative divide*. London and New York: Routledge.
- Guy, I., R., Mills, C. E. & Airasian, P. (2012) *Educational Research: competencies for analysis and applications*. Addison Wesley; London UK.
- Given, L. M. (2008). *The Sage encyclopedia of qualitative research methods*. Los Angeles, Calif: Sage Publications.
- Hawkins, J. D., Farrington, D.P., & Catalano, R.F. (1998). Reducing violence through the schools. In D.S. Fillion, R.A. Hamburg, & K.R. Williams (Eds.), *Violence in American schools: A new perspective* (pp. 188-216). Cambridge, UK: Cambridge University Press.
- Hawkins, J. D., Meltonish, D. N., Silver, R. C., & Holman, E. A. (1996). *Early responses to school violence. A qualitative analysis of students' and parents' immediate reactions to the shootings at Columbine High School*. The Haworth Press, Inc, Denver U.S.A.
- Hunter, L., & Erin, L. (2008). Collaborative research in sociology: Trends and contributing factors. *American Sociologist* 39:290-306A.
- IAE: Glossary. (n.d.). *Instructional Assessment Resources*. University of Texas at Austin. 21 September 2011.
- Kimberly, A. G. (2011). Paradigmatic Pragmatism, mixed methods, and intersectionality consideration in mixed-methods research design. In Kimberly, A. Griffin, & Samuel, D. Museus. (Eds). 2011 Using Mixed Methods Approaches to study intersectionality in higher education. 151 Fall 2011. wileyonlinelibrary.com

- Kincheloe, J. (2004). *Rigour and Complexity in Educational Research*. McGraw-Hill International.
- Leech, N. L. and Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality & Quantity International Journal of Methodology* 43: 265-275.
- Ligh, D. & Gorsick, A. (2003). *A study on the efficacy of a thin client school technology infrastructure final report*. Center for Children and Technology (CCT). New York City.
- Loäico, M. G., Spaulding, D. T. & Yvegiše K. H. (2010). *Methods in educational research. From theory to practice*. (2nd ed.). Jossey- Bass San Francisco.
- Martin, V., Lewis, L., & Sun, W. (2010). *The role of lifestyle television in transforming culture, citizenship and selfhood in China, Taiwan, Singapore and India*. Funded by the Australian Research Council 2010-2013: DP1094355.
- Martin, F., & Tally, B. (2013). SCRATCH-ED: Working with teachers to develop design-based approaches to the cultivation of computational thinking Center for Children and Technology. A special issue of *Media International Australia* (May 2013) co-edited by Tania Lewis (RMIT), Fran Martin (University of Melbourne) and John Sinclair (University of Melbourne).
- Massachusetts Institute of Technology. MIT Open Course Ware. 11.201 *Gateway to the Profession of Planning*, Fall 2010. P. 4.
- Meissner, J. O. & Sprenger, M. (2010). Studying the Process-Culture-Link in Innovation Management. *Person: Qualitative Social Research* Volume 11, No. 3, Art. 13 September 2010.
- Muijs, J. (2004). *Doing quantitative research in education: With SPSS*. SAGE; London U.K.
- Onwuegbuzie, A. J., Frels, R. K., Leech, N. L., & Collins, K. M. T. (2011). A mixed research study of pedagogical approaches and student learning in doctoral level mixed research courses. *Mixed Methods Research: Philosophy, Policy and Practice in Education* Volume 5 Issue 2 PP: 169 – 199.
- Reeves, T. C., Harrington, J., & Oliver, R. (2005). Design research: A socially responsible approach to instructional technology research in higher education. *Journal of Computing in Higher Education*, 16(7), 97-116.
- Ross, A., & Onwuegbuzie, A. J. (2010). Mixed methods research design: A comparison of prevalence in *JRMI* and *AJMI*. *International Journal of Multiple Research Approaches*, 4(3).
- Savin-Baden, M. & Major, C. (2013). *Qualitative research: The essential guide to theory and practice*. Routledge.
- Silvaman, D. (2004). *Qualitative research: Theory, method and practice*. SAGE; London UK.
- The Western Apache ethnography and geographic information systems research summer research experience for undergraduates in ethnography and geographic information systems School of Anthropology. Grant No. 1004556 (2010-2013). University of Arizona Tucson, AZ.
- Van den Akker, J., Gravemeijer, K., McKenney, S. & Nieveen, N. (in press) (2006). Introducing educational design research. In Van den Akker, J., Gravemeijer, K., McKenney, S. & Nieveen, N. (in press) (Eds.), *Educational design research*. (pp. 1-8). London:Routledge.
- Wang, F., & Hannafin, M. J. (2005). Design-based research and technology-enhanced learning environments. *Educational Technology Research and Development*, 55(4), 5-23.
- Yates, Lyn (2004). *What Does Good Educational Research Look Like? : Situating a Field and Its Practices*. Conducting Educational Research. McGraw-Hill International.

INNOVATIVE RESEARCH on LEARNING AND TEACHING: GÜLEN'S IDEAS on EDUCATION AS A MODEL

Unsal Ali

INTRODUCTION

To educate and train the people play an unfailing and important role in every society and in every period. Every nation has been in quest of innovative researches for teaching and learning continuously and exerted to find one better than the previous methods.

M. Fethullah Gülen is an Islamic scholar, writer, thinker, inspirer and poet. He has been teaching whole society in Turkey and last two decades in around the world in an innovative way. He has big influence on millions to pay attention on education in an effective and innovative way. Because of his encouragements thousands educational institutions are opened and became successful in their field in around the world.

This article deals the ideas of Fethullah Gülen on education which have been trained and realized in the whole world and become a model by successful results.

IMPORTANCE OF EDUCATION: TEACHING AND LEARNING

Education is an essential fact of human life. Human being comes to the world unaware and uneducated unlike many other creatures. Young duck can walk and swim after the birth. It is like they were taught them before they came into the world. Mosquitoes hatch and immediately begin to fly in a day or two days. If human being can learn how to walk in a year at least, to talk in two years and learn how to separate the good and bad in 6-7 years. Then, learning in all area of the life continues until the death. The creation of human beings in this way shows us that the human are creatures which are programmed to learn. In this aspect he is better and more talented from all beings.

Even though the form of education has some changes according the time or their own ages, people are in need of education all the time. Fethullah Gülen, considers education as the essential ingredient for the future of each society. After all, it is the society through which moral and social values manifest themselves. For social harmony, it is very essential to teach these values to the general public in that society. He explained this fact in one of his articles

by stating that, “whatever role marriage and reproduction plays for the continuity of generations, education plays [a] similar role for the continuity of their moral and social life” (Gülen, 1998, pp. 98-101).

Uneducated generations are source of many problems for their families and for society as well. Today, many criminal offenses, bad habits, and social problems rooted in uneducated generations. Remarkable statistical information in the following is very impressive.

Forty-two million adult Americans can't read. Fifty million adult Americans are limited to a 4th or 5th grade reading level or can only recognize a few printed words. The number of illiterate adults is increasing by 2.25 million people each year. The number of illiterate adults includes nearly 1 million young people who drop out of school before graduation - 400,000 legal immigrants - 100,000 refugees - 800,000 illegal immigrants - and 20% of all high school graduates. Illiterate people are missing out on 237 billion dollars total each year in money that they could be earning if they knew how to read. The total amount of money being spent on illiteracy by the federal government is at more than ten billion dollars each year, which grows steadily. (http://www.nrrf.org/essay_Illiteracy.html)

Indonesia also struggling with ignorance from long time. According to the Indonesian National Population census 2010, the remaining illiterate population was 15.4 million in 2004. The Indonesian government addressed the solution to these problems by issuing the Presidential Instruction No. 5 of 2005 on “The National Movement of Compulsory Nine Year Basic Education and the Fight against Illiteracy.” Following this Presidential Instruction, in 2006, Directorate of Community Education Development accelerated literacy program as A National Movement and this program has resulted in the achievement of 8.07% of illiterates with gender disparity of 5.33. After this program in 2010 this percentage decreased until 5.02% or 7,547,344 illiterate people.

(<http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/Indonesia.pdf>)

Today, many nations are suffering with their uneducated people. They are spending billion dollars to solve some criminal problems and social crisis which uneducated people caused. According the reality to solve the problems before happened is more simple and cheaper. So, education is like hygienic measures before disease.

On the other hand, we should have some targets for education. First, we have to ask ourself some important questions. Why should we educate our people? What is the purpose of education? What is the essentials of education? All system of education, foundation of education and road map will be designed according our answers to these questions.

Concerning knowledge and its' targets Gülen says, "Since "real" life is possible only through knowledge, those who neglect learning and teaching are considered "dead" even though they are still alive, for we were created to learn and to communicate what we have learned to others.

Right decisions depend on having a sound mind and on sound thinking. As science and knowledge illuminate and develop one's mind, those deprived of science and knowledge cannot reach right decisions and are always exposed to deception and misguidance" (Gülen, 2006, p. 50)

PURPOSE OF EDUCATION

Importance of education is not arguable. However, to determine aspirations or purposes of education is as important as education itself. Education should have some important purposes. In every nation, country or educational system these purposes can be slightly changed. However, almost all of them agree in many purposes. UNESCO, prepared a report about the purpose of educational systems. The report addresses that "The purpose of educational systems will focus on the improved condition of the citizenry of a country. This may take many forms, some of which will include the acquisition of formal qualifications and others of which will be related to the humanitarian purposes of education."

The purpose of education for sustainable development is to help young people acquire the skills, knowledge, and understanding to help them take better informed decisions, whether corporately, or on behalf of others, or individually in their own lives. It is an attempt to ensure that they are able to act in ways that are consistent with a sustainable future for the world. Part of this education is to have sufficient knowledge and understanding to be able to appreciate the importance of biological, ecological, social, and economic principles that act in combination to produce a society and environment in harmony with each other.

It is also important that education helps the young people to learn how to learn the developing environment and ways in which it can be improved in the interests of society without it becoming unsustainable.

Importantly, education should also ensure that young people are able to operate within the environment so that they can improve it for future generations.

There are certain main threads of thinking in pre-school and primary education, including some specialist approaches such as that currently pertaining in Regio Emilia in Italy. There are other charismatic figures who have done a great deal to develop education and their

influence continues at the present time; for example, the schools developed through the inspiration of Maria Montessori, Friedrich Froebel, Rudolph Steiner, etc. (Mc Getrick)

These purposes are acceptable by all educational systems, nations or ideologies. In my opinion, if an educational system targets to educate a generation that gets along well with the environment and the world only is not enough to prepare the generation for the future. In addition on these purposes Fethullah Gülen mentions very important point. He says that non-educated people will never find the meaning of their existence, why they are created, where they come from, and where exactly they are going. More importantly, they cannot succeed to do what is needed for these. Therefore, according to him, a public education campaign should be done everywhere. Training activities for people of all ages is a necessity. Of course, the goal which will be achieved only by training, education and knowledge, is very important. According to Gülen, science should lead the person to the understanding of the meaning of his/her entity. In other words, it should lead the person to the knowledge of the Supreme Creator and his position before Him and to fulfilling his liabilities to Him. Gülen also believes that education gives the opportunity that people with different religions, languages, cultures and nations can live in peace with each other. This is because people learn, with education, how to understand others, or at least how to respect them and their values.

FETHULLAH GÜLEN'S IDEAS ABOUT EDUCATION:

Gülen looks forward to ideal generations yet to come. Provided that today's young people are educated with high ideals and guided with appropriate targets, they will grow into young people full of potential and energy. This will be the awaited generation by all humankind. Gülen, further says, From then on, they use all their abilities to maintain their posts and win the favor of their superiors, things which humiliate a man, and become more and more degraded. If they show a capacity to be promoted, they will no longer think of anything other than getting promotion even if at the cost of losing all their honor and dignity, and doing things contrary to the dictates of their conscience and faith. They will bow down before every person from whom they anticipate benefit, and display so weak a character that they may speak excessively ill of one whom they praised to the skies a day before. (*Gülen, 1998, pp. 25-27*).

Gülen believes that young people who are well-trained and firm in their beliefs, will play major roles in solving the problems of humanity. He takes examples from the prophets to show the desired qualities that this new generation should possess. He dreams of a generation that, "...Their spirits are cleaner than the cleanest angel, their

ideas are powerful enough to solve the problems of their era, their hearts are as soft as angels, and their wills are strong enough to overcome the fear of hell fire. This is the awaited generation, who will clean the market of rhetoric, will make words meet with the words' master, will say the things that need to be said, and will do the things that need to be done." This generation possesses Adam's fidelity and loyalty, Noah's determination and commitment, Abraham's softness and surrender to the righteous, Moses' bravery, and Jesus' tolerance (*Gülen, ibid, pp. 105-108*).

Referring to the importance of the school in education, Gülen underlines that the school is a place for both learning and education. In fact, as schools may appear to be appealing to a period of human life, their natures dominate all times, and foundations gained here seem to have dominated the rest of human life.

Referring to the importance of teacher education, Gülen indicates that the teacher must integrate substance with meaning before presenting it to child. The teacher should possess a sense of being useful to the student and should have feelings of self-sacrifice. A teacher should suffer deep inside searching for ways to help kids learn better. A teacher should be systematic, disciplined, and possess exemplary behavior. A Bedouin who has found an ideal teacher may surpass even the angels; the life of Prophet Mohammad (saw) is an example of such escalation (*Gülen, ibid, pp. 98-101*).

Gülen also puts forward some opinions about the nature of knowledge to be given at schools. For example, according to him, anything that does not help solve the mystery of the universe with the human personality is useless and an unnecessary load and bother for students. "...Just during the early years of schooling, loading kids heavy load with world geography, human history or philosophy, will be a misfortune not only for the course, but also for the kids. As for tutor who often leaves his students with doubts and several hesitations for the sake of science, cannot be considered as true teacher. A building with its laboratories if that does not guide teachers to the right cause cannot be named as school." "During the initial years of schooling, kids first should gain language, ideals, belief, morality, and character. Based on these foundations, one must reach to a new understanding in terms of building social identity, and bringing new revival by demonstrating reformist approach of his / her era when dealing science. Then, starting at this point, it will be desirable to have children engage in art, trade, agriculture, science and technology." (*ibid*)

Gülen also lists some methods to be followed in education. For example, such principles as knowing the students, principle of gradualism, tolerance, use of beautiful words, equipping one's heart with lofty ideals, principle of materialization of abstract matters, principle of keeping a balance between fear and love, guilt and punishment, and the principle of opposites in explaining mutually exclusive concepts (Gülen, 1996, pp. 15-18).

Thus, we see that Gülen's educational philosophy includes not only ideas about the nature and importance of education for raising human beings to the level of khalifah or vice-regent and to bringing about ideal generations for the benefit of humanity, but he also specifies how education should proceed and what methods should be used. But not only that; Gülen is not interested in developing a philosophy and methodologies just for their sake. He does not believe that mere rhetoric is beneficial to anyone. Rather, Gülen is someone who consistently lives his life along the lines of his thoughts and he encourages others to do the same. In this way, Gülen is unique among modern Islamic philosophers; he inspires others not to just listen to his ideas, but to take action. Thus, in this section of the paper, we explore how Gülen translated his ideas into actions.

FETHULLAH GÜLEN'S IDEAS ABOUT EDUCATION IN ACTION:

The educational perspective of Gülen is the illumination of the mind to science and knowledge, and the lighting of the heart in faith and virtue. This can be accomplished through teachers who are committed to devoting their lives, time and knowledge to teach the younger generations in these educational institutions (Michel 2010). Thus, the inspired teachers pervade the inspiration of Gülen's educational philosophy as volunteer educators around the world; since teaching is a sacred activity and teachers help students to develop their capacity to bring about positive change. Teachers are responsible for teaching knowledge with the wisdom to use it. As a result of Gülen's teachings and his moral example, teachers are inspired to take action, to sacrifice and to serve human beings rather than themselves. Besides this, the teachers provide knowledge, wisdom and moral guidance through embodying spirituality rather than preaching values.

According to Gülen, through the new educational style, the students are to be given non-material values such as the profundity of ideas, clarity of thought, and depth of feeling. Thus, Gülen's educational vision aims to embrace societies throughout the world, and would be a solution for various societal problems (Michel 2005). Furthermore, Gülen describes this as a duty to serve humanity particularly in the field of education with no expectation of material

or political gains. Gülen's education philosophy does not include utilitarian, social and political activity. Besides this, the teachers in the Gülen-inspired schools do not seek to maximize the advantages of the actor in political decisions, as Gülen emphasizes that sincerity and purity of intention should never be harmed (Williams 2007).

Gülen states that a good school is not only a building where students learn theoretical information, but also an institution or a laboratory in which students are to be prepared for life by educators (Said 2006). Besides this, a school is a safe place where students are to be protected from bad habits and learn important concepts for this life and the next. Also, a school is to shed light on important notions and events, and help students to clearly understand their natural and human environment.

Gülen first put his philosophy into action while teaching at the Qur'anic School in Kestanepazari, Izmir. He immediately noticed the fruits of his teaching method. Soon after, he started encouraging people to participate in conversations, seminars, and conferences in mosques and homes. His aim with this pursuit was to create awareness among the people and convince them about this important service. He encouraged them to get involved and make sacrifices to facilitating the good training of the new generation. There are a few important points here; first, a role model with an exemplary life must be presented to the new generation. For him, Prophet Muhammad (pbuh)'s biography which includes specific examples covering nearly every aspect of human life, provided an agreeable prototype — a role model for the uplifting of new generations. With the prophet's life history, Gülen found an opportunity to showcase the prophet's lofty morality as an example for universal moral values to the new generation. Additionally, in order for his teaching, guidance and actions to be effective on others, he worked to live his own life according to the role models provided by the Prophets' lives. Through this, he proved that the lives of these role models are not a utopia for us, but rather a livable reality that can be attained.

Gülen went to each city in Turkey to give speeches and sermons. He called people to become not a destructive but a constructive force, and not a divider but a unifier. He described his target generation as the "Altın Nesil" — the Golden Generation. After noticing his sincerity and seriousness, first university students and later business people joined with him to answer his call. Later, dedicated people from all walk of life — university students, teacher, workers, artisans, women, and men, joined him to mobilize a massive educational effort throughout the entire country. These people first started by setting up educational foundations, and small companies became devoted to the cause in their cities. Later, they opened schools, university preparation centers, and reading centers. The teachers working

at these institutions were all qualified university graduates and idealistic teachers well equipped with Gülen's ideals and with a sense of responsibility.

When the time came, this educational campaign moved beyond the borders of Turkey. Gülen, gave thoughtful advice to his followers to initially emigrate (as in the context of holy pilgrimage) to Central Asia, and later to all over the world in order to pass the beauties they possessed to all humanity. Followers of him took his advice as an order and went the extra mile and well beyond the call of duty, and they opened hundreds of elementary, middle, and high school to help train the new generation in high moral values, who would believe in peace, harmony, dialogue, and respect science and intellectual development. Shortly after the school openings, these schools demonstrated great success. The success especially became more visible in the behavior of students and in their relationship with their parents. For this reason, the people were pleased with the opening of these schools, and they wanted to increase the number of such schools in their cities. For example, speaking at the grand opening ceremony, Moscow's director of education stated, "There are two important events in Russia's recent history; one is the travel of Gagarin to Moon, and the second one is the opening of a Turkish school here" (<http://tr.fGülen.com/content/view/12486/11/>). In Afghanistan and in Kyrgyzstan, more than a thousand applications were submitted to these schools even though the enrollment slots available were just around hundred. Another school in the Philippines teaches Christian and Muslim students side-by-side in harmony and peace despite ongoing conflicts in that country. This reality made people highly satisfied with the mission of these schools. A school in Northern Iraq, a place simmering with daily violence and terror, has been teaching students from Sunni, Shi'a, Arab, Turkmen and Kurdish descent, and no slightest discomfort has been reported so far. Therefore, it is a reality that these schools in both Northern Iraq and Eastern Turkey have helped keep the young generation away from joining terrorist groups and instead have involved them purposefully in the community as a contributing member.

The achievements of these schools have been first noticed and assessed by the academicians and scholars of these countries. For example, the Macedonian educational researcher Bekim Agai, just says: "These well-equipped schools provide education that no other school in this region can offer. The consequences of this initiative can be seen as a great success not only in the national but in the international arena as well" (*Koray, 1997*).

Another author, after having visited and observed several of these schools, speaks highly about them, and says, "The purpose here is not simply to increase religious knowledge, not to create religious awareness of a Sharia thru a series of symbols, but to facilitate the moral change and character uplifting of the new generation. When closely observed, we noticed

that students all obtained a degree of self-discipline, and show great respect for their own tradition as well as Islamic-values" (*Bayramoğlu, 1996*).

Hulusi Turgut, in his series about these schools, underlines that the majority of students quit smoking and stopped consuming alcohol. Mehmet Altan mentions about two mothers who chose to send their kids to these schools only because students here do not smoke, and English is the medium of instruction (*Altan, 1998*).

These schools do not carry any political, ethnic, or materialistic agenda. The people who established these school and the teachers being deployed there are working with great sacrifice. As the founding business people do not make money out of these schools, teachers are also paid a meager salary. In addition, these schools provide science and technology education, and they are far from being religious schools. However, high moral, and universal values which bind all humanity are central theme in the daily discourse (*Bayramoglu, 1996*).

We see these volunteers and followers of Gülen going to Tajikistan, while the county experienced civil war, we see going to Bosnia even while the country was being sucked into a war, we see them in Georgia when that country had much social unrest, all with the sole purpose of opening new schools. Despite facing serious difficulties, and occasional danger of losing their lives, they did not give up and leave the countries in which they were working. They have proven to be true friends without any materialistic expectation. Their perseverance is best described in the words of Georgian President Saakashvili, "They came during such a hard time that no one wanted to come to Georgia. They came in a real difficult time, and never left us" (*Demir, 2010*).

The educational philosophy of Gülen-inspired schools is to nurture a generation that will benefit humanity. The graduates of these schools who are studying at universities devote two to three days or evenings a week to helping students by tutoring them voluntarily. Apart from their academic assistance, these graduates organize various social activities where they motivate students and share their knowledge and experience about moral values and positive attitudes. Very similar activities are organized by senior students who mentor junior students during and after school hours. These students and young graduates sacrifice their time and prefer to assist others, even though it is not obligatory, while many of their peers spend most of their free time on leisure activities.

CONCLUSION

Today, in around the world, more than 160 countries, thousands educational institutions including primary schools, secondary schools, high schools, institutes, universities, language courses, training, and preparation courses for university enter exam are established by civil society which inspired from Fethullah Gülen's ideas. These schools have very successful achievements in many international science and project olympiads. On the other hand, the students from different ethnic groups, religious and cultural backgrounds are studying together in peace and harmony in these schools like in Afghanistan, Northern Iraq, Philippines, and Pakistan. The key factors of behind the success of Gülen-inspired schools are in short: the role of teachers, teacher and student relationship, individual approach, family visits and parent-teacher relationship, extra-curricular and social activities, teacher professional development programs, dormitories and mentor programs, teacher-student ratio, schools' physical conditions, clubs and etc. Each factor needs more explanation to understand their important roles for the success. I hope we will write it in another article.

REFERENCES

- Altan**, Mehmet, Newspaper "Sabah", 22 January, 1998
- Bayramoglu**, Ali, YeniYüzyil, 31 October – 2 November, 1996
- Bayramođlu**, Ali, YeniYüzyil, 2 November, 1996
- Demir**, Fatih, Newspaper "Zaman", Batumi, 10 March, 2010
- Gülen**, Fethullah, Pearls of Wisdom, s. 50-51, Light Publishing, New Jersey, 2006
- Gülen**, Towards The Lost Paradise, pp. 25-27, 98-101, 105-108, Second Edition, Kaynak, Izmir, 1998
- Gülen**, Buhranlar Anaforunda İnsan / The Man in the Gulf of Crises, pp. 15-18, 9th edition, T.Ö.V. Publication, Izmir, 1996
- Koray**, Cenk, Newspaper "Aksam", 16 May, 1997
- McGetrick**, B.J., *Foundations of Educational Systems, Quality of Human Resources Education, Encyclopedia of Life Systems, UNESCO-EOLSS SAMPLE CHAPTER*,
- Said**, M. (2006). "Reading the World in FethullahGülen's Educational Philosophy " Retrieved 19 sep, 2010, from <http://www.fethullahGülen.org/conference-papers/the->

[fethullah-Gülen-movement-ii/2224-reading-the-world-in-fethullah-Gülens-educational-philosophy.html](#)

Turgut, Hulusi, "FethullahGülenveOkullar / FethullahGülen and Schools," Newspaper "YeniYüzyıl", 15 January, 1998

<http://www.eolsshttp://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/Indonesia.pdf.net/Sample-Chapters/C11/E1-12-01.pdf>

http://www.nrrf.org/essay_Illiteracy.html

<http://tr.fgulen.com/content/view/12486/11/>

<http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/Indonesia.pdf>

EDUCATIONAL RESEARCH PRACTICE IN INDONESIAN

DR. GRAHAM DAWSON

Leader, Education Quality

Australia's Education Partnership with Indonesia

**Paper presented at the Yogyakarta State University
Conference**

Strengthening the Ties Between Research and Education

17 MAY 2013

Page 44 of 464

EDUCATIONAL RESEARCH PRACTICE IN INDONESIA – A PRACTICAL PERSPECTIVE

1. Introduction – Background and Context

In the paper I am presenting today I will consider some important issues about the relationship between educational research in Indonesia and the application of its findings to policy and practice within the Indonesian education system. The ideas are presented from a personal and practical perspective as an educator who has worked on development assistance programs, funded by AusAID, in a range of countries including, on a number of separate occasions, Indonesia.

During my time in Indonesia I have worked as a researcher, program manager and technical adviser to Ministry of Education and Culture (MoEC), The National Education Standards Board (BSNP) and the Ministry of Religious Affairs. My work has varied from leading a review of the organisational capacity of Quality Assurance Institutions (LPMP), reviewing the National Education Standards for BSNP, assisting MoEC to develop an educational quality assurance system, researching the competence of principals and supervisors to guide their professional development, and currently leading a team of advisers, funded by AusAID under the Education Partnership with Indonesia, who are supporting MoEC to implement a national system of professional development for education personnel, especially school and madrasah principals.

These roles have enabled me to gain a national perspective on the relationship between educational research, educational policy making and the practical implementation of education policy. I will use my personal experience to comments on the relationship between these three issues – research, policy development and policy application. However, more specifically, I will relate my comments to the two different roles that I have undertaken since December 2011 as these encapsulate my observations from all the work that I have done in Indonesia.

From December 2011 to February 2012 I was the team leader for a research study called the School and Madrasah Principal and Supervisor Competency Baseline Study. This study was funded under the Education Sector Analytical and Capacity Development Partnership (ACDP)

which is sub-component of the Australia Indonesia Education Partnership. The objectives of the study were to:

1. Assess the level of competence of school supervisors and school principals based on the competencies in Ministerial Decrees No. 12/2007 and 13/2007
2. Develop a profile of the attributes of school supervisors and school principals to inform future Continuing Professional Development (CPD) programs
3. Analyse the future CPD needs of school supervisors and school principals
4. Determine the extent to which Ministerial Decrees No. 12/2007 and 13/2007 have been implemented by districts
5. Assess the impact of the 2010 Interim Presidential Staff Strengthening Program (INPRES) on participating school supervisors and principals.

The study was conducted in seven regions of Indonesia, Java, Sumatera, Nusa Tenggara, Kalimantan, Sulawesi, Papua and Maluku.

Today I will present details of the methodology, the main findings and their implications for education policy and practice, and the implications of the study to help us understand some of the challenges facing education research in Indonesia and the interface with education policy. Before I do this however, I need to give you some details about my current position and work.

One of the advantages or disadvantages, depending on your perspective, of being a researcher is that when you have finished the report and presented the findings you can usually leave it to someone else to take responsibility for implementing the findings. However, my situation is different. In my current role as Manager of Component 2 of the AusAID funded School Systems and Quality Education Partnership with MoEC, I have become responsible for assisting MoEC to implement the findings of my study through the development and implementation of a national system of professional development for education personnel, particularly principals and supervisors. The advantage of this situation is that I am in a position to ensure that policy and practice reflects the research. This disadvantage is that I cannot readily accuse the researcher of being unrealistic and out of touch with the reality of implementation context.

However, the benefits of being involved in the research and the application of the research findings outweigh the disadvantages. It is this experience, as researcher and policy implementer that I wish to focus on in my presentation.

2. The Study

The School and Madrasah Principal and Supervisor Competency Baseline Study collected data to address the five objectives using quantitative survey methodology followed by qualitative data collection. The quantitative and qualitative samples included principals and supervisors from urban, semi urban, rural and remote locations.

The quantitative data were collected from a randomly selected sample of principals, supervisors, teachers and heads of district education offices from 55 districts through the completion of detailed surveys. A total of 1,000 supervisors, 5,000 principals from schools and madrasah, 4,000 teachers and 102 heads of district education offices.

There were a number of significant challenges in conducting the surveys and ensuring their validity, especially for supervisors and principals.

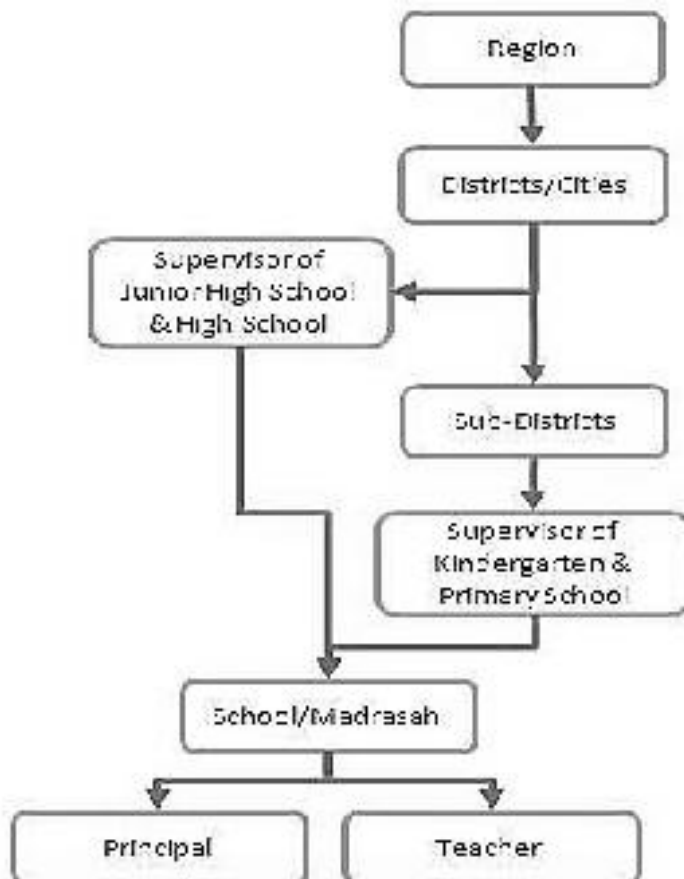
First, the survey was more detailed and contained more items than the literature on survey research methodology advises. This problem was caused by the fact that the ratings of competence were to be based on government Regulations 12/2007 and 13/2007 which detail the competency standards for supervisors and principals. These contain detailed lists of competency indicators, some of which needed to be unpacked as separate survey items. A related issue was that MoEC wanted additional detailed data collected about the profile of respondents, information about their professional development needs, data about the application of the regulations and data about the impact of INPRES training in 2010.

Second, the nature of the sample meant that some respondents were located in very remote locations and there was concern about the rate of response if the surveys were sent and returned by post or courier.

Third, even though the terms of reference, including the methodology to be used, had been developed with MoEC, some senior officers were concerned that the study relied totally on the perspectives and perceptions of the respondents and that this would affect the validity of the findings. Some MoEC senior officers requested that the surveys be replaced by a test as they considered testing would provide “more objective” findings. This seems to be a particular concern among Indonesian policy makers and will be discussed in more detail later in the paper.

For these reasons three actions were implemented to increase validity and response rates. The principal, supervisor and teacher samples were linked so that the teachers selected were linked to their principals, the principals selected were linked to their supervisors and supervisors were linked to heads of district education offices. Diagram 1 illustrates the relationship between the quantitative samples.

Diagram 1: Quantitative Sampling Process



In the surveys, as well as providing self-ratings of their own competence:

- supervisors were asked to rate the competence of their principals in the sample
- principals were asked to rate the competence of their supervisors in the sample
- teachers were asked to rate the competence of their principals and supervisors in the two samples.

This approach enabled the team to cross-check the ratings of the different groups and check validity of self-ratings.

To improve response rates principals, teachers and supervisor respondents for the different districts were brought together in one or two locations and completed the surveys at the same time with data collectors present to assist. ACDP met the cost of bringing the respondents to each of the locations.

The qualitative sample was a purposively selected sub-sample of the quantitative sample and comprised eighty-eight (88) schools and nineteen (19) district education offices. Qualitative data was collected from principals, teachers, parents, supervisors and heads of district education offices using interviews, focus group discussions, observation and document analysis. Some of the quantitative data (from about 30% of districts) were analysed prior to the conduct of the qualitative data collection. This enabled the team to identify key issues and to examine these in more detail during qualitative data collection. Table 1 provides an overview of the qualitative data collection.

Table 1: Qualitative Data Collection

Target Group	Respondents	Methodology	Triangulation
Supervisors	Supervisors (MoEC/MoRA) Principals(MoEC/MoRA) Teachers(MoEC/MoRA) Heads of District Education Office(MoEC/MoRA)	One-day visit to district/sub-district for supervisors in sub-sample <ul style="list-style-type: none"> Key Informant Interviews (KII) – Supervisor, Head of District/Sub-District Education Review of documentation Focus Group Discussion (FGD) – Supervisors 	<ul style="list-style-type: none"> Comparison with quantitative data KII with district education heads KII with sub-sample of school/madrasah principals (during school field visits) FGDs with sub-sample of school/madrasah teachers (during school field visits)
Principals	Principals(MoEC/MoRA) Teachers(MoEC/MoRA) School Committee Supervisors(MoEC/MoRA)	One-day field visit to each school in subsample <ul style="list-style-type: none"> KII – principals Structured school observation Document analysis FGD – teachers, parents 	<ul style="list-style-type: none"> Comparison with quantitative data FGDs with groups of teachers, parents (school committee), KII with supervisors during supervisor qualitative study

The qualitative and quantitative data collection were conducted by more 150 approved personnel, mainly lecturers from six universities through their research centres. They were:

- STAIN Syaikh Abdurrahman Siddik (Bangka Belitung)
- Universitas SYAH Kuala (UNSYAH - Aceh)
- Universitas Negeri Jakarta (UNJ)
- Universitas Pendidikan Indonesia (UPI)

- Universitas Negeri Yogyakarta (UNY)
- IAIN – Surabaya (qualitative only)

The ACDP team provided training and detailed implementation manuals for data collectors to improve the quality and reliability of data collection. All instruments were piloted and revised before the commencement of national data collection.

3. Study Findings

While the focus of this paper is not to present the findings of the study a summary of the main findings is presented to provide important data about the future challenges for education in Indonesia and to provide a context for the comments that follow about the relationship between research and policy development and implementation.

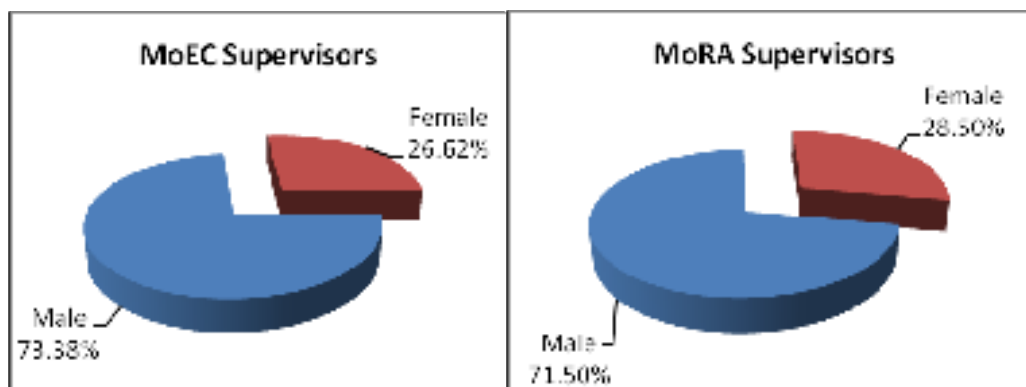
In general, the findings from the quantitative and qualitative data analysis were similar. Most differences between the quantitative and qualitative findings could be attributed to the weaknesses in the survey methodology and these were discussed in some detail in the research report which should be available on-line through the ACDP website in the near future.

The main findings are presented below.

Profile of Respondents

1. There is a significant gender imbalance between the number of male and female principals and supervisors compared to the number of male and female teachers.

Diagram 2: Gender of Supervisors and Principals



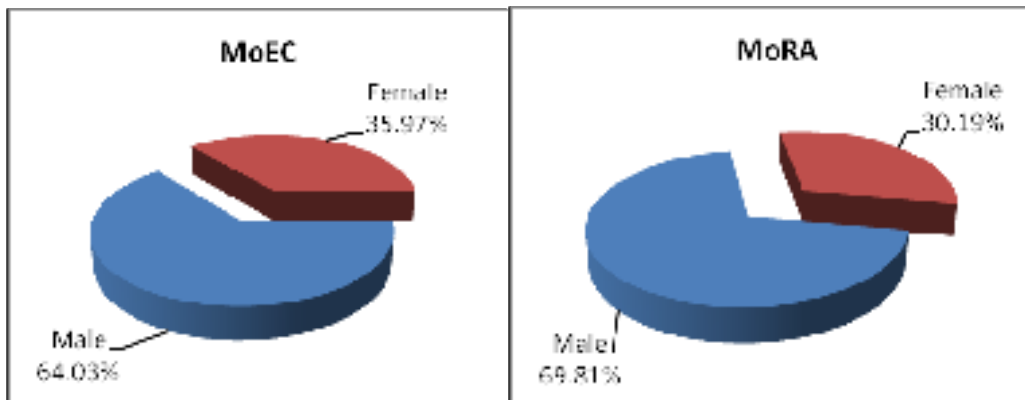
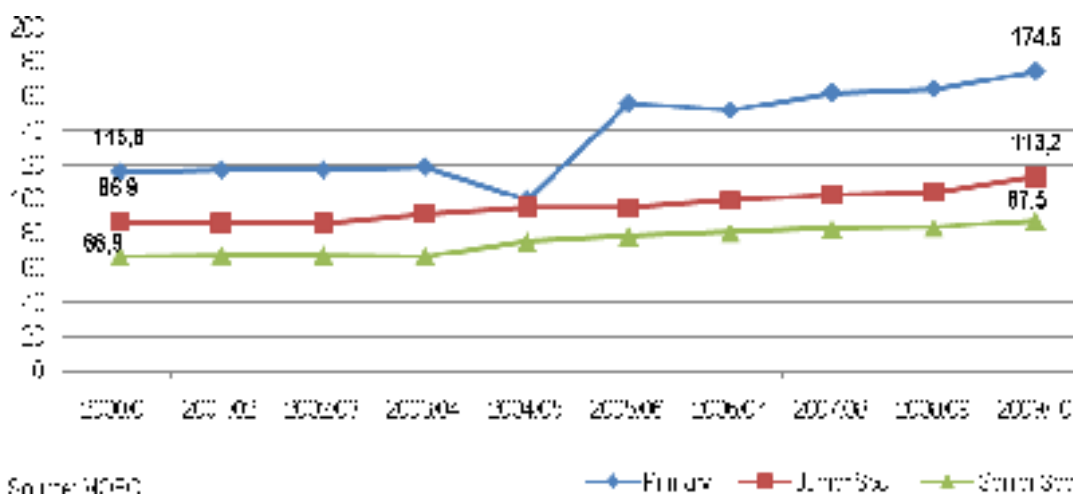


Diagram 3: Ratio of Male to Female Teachers – MoEC



- Over 80% of the madrasah in the sample were private foundation madrasah and these madrasah had lower levels of BAN S/M accreditation and their principals were rated significantly lower in competence on almost all indicators.
- MoRA supervisors and principals tended to be younger and less experienced than MoEC counterparts when first appointed as principals or supervisors. More MoRA supervisors than MoEC supervisors were teachers when first appointed as supervisors.

Supervisor Competency

- Supervisors were most competent in the Personality and Social Dimensions
- Supervisors were least competent in the Research and Development and Academic Supervision dimensions

3. The level of competence varied on individual competency indicators within each competency dimension
4. Supervisors lacked competency in key areas related to their roles – particularly the provision of advice to teachers about effective teaching and learning, use of laboratories to support learning, developing indicators of effectiveness, analysing and using the results of the supervision and all aspects of research and development.
5. Sex of the supervisor, educational qualifications and location were all significant factors in the competency of supervisors.
6. The competency levels of MoRA and MoEC supervisors were similar although MoEC supervisors generally had higher ratings of competence.

Principal Competency

1. Principal competency was rated lowest on Supervision competency dimension and using ICT for management and teaching and learning purposes.
2. MoEC principals were rated higher than MoRA principals on most dimensions.
3. Female principals rated their competency lower than males on Managerial, Entrepreneurship and Supervision.
4. Level of principal qualification and school status (public or private) were significant variables for Managerial, Entrepreneurship, Supervision and Teaching and Learning for MoEC principals. The higher the qualification the higher the ratings of competency
5. Public school principals rated their competency higher than private school principals – especially for MoRA.
6. Private madrasah principals had lowest ratings of competency.
7. Level of school accreditation is a significant factor on all dimensions for MoEC principals. The higher the accreditation level, the higher the competency.
8. Elementary and kindergarten principals tend to rate their competency lower than principals of other school types.
9. On specific competency indicators rural and remote school principals generally rate their competency lower than urban or semi urban principals.

Professional Development for Principals and Supervisors

1. Most districts do not have well-developed programs to prepare and support principals to undertake their roles as school leaders.

2. This situation is much worse for supervisors. There is no formal preparation or induction program to prepare them and assist them to undertake their roles and there is very little effective supervision or professional support for them after they take up the position.

Use and Understanding of Regulations 12/2007 and 13/2007

1. Findings indicated that more work needs to be done by district offices to socialise the regulations.
2. A significant number of district education heads, supervisors and principals did not have an adequate understanding of the content of the regulations.
3. District offices did not regularly use the regulations for selection, appointment, promotion, supervision, performance appraisal and professional development purposes. This was a major concern of supervisors and principals who said that appropriate selection procedures were not always implemented.
4. For supervisors and principals there was a positive between level of understanding of the regulations and self-ratings of competence on the surveys.

4. Implications of the Study for Alignment between Research and Policy Application in Indonesia – Issues and Challenges

Apart from the importance of study's findings from an education policy perspective, the design, implementation and outcomes of the study have important implications for education research in Indonesia and the alignment of research and policy development in education.

This study was designed to link educational researchers at universities with policy makers within the national education system. How well did it achieve this goal?

There is some evidence that the study at least partially achieved this objective. The methodology used by the study provided an opportunity for six institutions and 150 researchers to participate in a large scale study, receive training and implementation experience in qualitative and quantitative data collection and analysis, and engage with school, district and national education personnel over an extended period.

Two of the most important outcomes of the study were that researchers in universities have increased their research capacity, especially in qualitative methodologies, and have a greater understanding of the issues facing schools and school leaders in Indonesia.

One of the criticisms made of tertiary educators in Australia, especially in the field of education, and I assume it is the same in Indonesia, is that they do not understand the reality of the school and the challenges faced by principals and teachers. In Australia there is a fierce and ongoing debate about how well universities prepare teachers and school leaders.

One important way of responding to this criticism is to provide tertiary educators with more opportunities to engage with and work alongside school-based educators through research studies, school-based action research and joint program evaluations. The additional benefit of this partnership approach, and MoEC has agreed to this in relation to the present study, is that researchers can use the findings from studies to improve their personal understanding of current issues in Indonesian education and to publish papers to build their credibility and standing in the international research community.

The implementation of the study also identified some priorities for capacity development for researchers. In particular, the ability of researchers to collect and analyse rich qualitative data varied considerably across the participating institutions, despite the guidance and training provided by the study team.

It was apparent that even some highly qualified tertiary educators lacked experience in conducting, recording and analysing data from interviews and focus group discussions. There was a tendency for qualitative data collectors to accept at face value the response of interviewees and there was a lack of capacity or willingness to ask more probing questions of interviewees and to help them reflect more deeply on their responses. In some cases the qualitative interviews were conducted like quantitative surveys.

This is an important issue that needs to be addressed by educational research institutions. For education research, observation, questioning, analysing documents and other qualitative data collection methodologies are crucial for providing rich and credible data about schools, students and principals.

Related to this is the fact that many senior education policy-makers in Indonesia are not prepared to rely on data based on self-perception or the perceptions of others to guide policy development. They want hard data, by which many of them mean test results.

I believe this is a very problematic approach for them to take. The self-perceptions and perceptions of colleagues, gathered through valid and reliable quantitative and qualitative data collection methods, provide very important information for policy-makers about the development and support needs of school personnel and school. Observation in the field by trained personnel is essential for understanding schools and school education. If the education system relies only on cognitive testing to guide policy making it will have a consequent effect on the relevance and quality of the resulting policies. For this reason it

will be important to improve the skills of education researchers in qualitative data collection methodologies.

In addition, from a policy perspective it will be crucial for MoEC and MoRA to develop more effective performance management and appraisal processes that are used to provide data about competence and performance. This type of information is essential for guiding decisions about how to allocate resources for professional development.

Before the team designed, developed and implemented the study we searched for studies about supervisor and principal competence in Indonesia. There was almost no data held by the education system and the team could only find one quantitative study about supervisor competency which was conducted under an earlier AusAID program. Until this study was completed there was virtually no reliable information available to education policy makers about principal and supervisor competency and their professional needs. This is a significant deficiency as developing the capacity of principals is crucial for improving education outcomes in Indonesia. If policy is not based on evidence it runs the risk of being irrelevant and wasting resources.

For this reason, even though this study only provided baseline data about competence and professional development needs, policy-makers are using the findings to guide decision-making regarding future professional development for principals and supervisors. In addition, policy makers are committed to gathering ongoing data about principal and supervisor competence. However, it is also clear that there is a significant opportunity for tertiary institutions to work in partnership with MoEC and MoRA to conduct further studies about these important issues.

Also there is an urgent need in Indonesia to move beyond the collection of data about principal, supervisor and teacher competence and professional development priorities, and to conduct studies that investigate the extent to which principal and teacher competence, and principals' and teachers' participation in professional development have an impact on student learning outcomes. This information is essential to guide policy development and implementation yet there is little evidence that this type of research is being considered on a national scale. This is a major challenge for education research in Indonesia and should be given high priority over the next ten years.

Another major issue for policy-makers that was emphasised by the study's findings was how to ensure that national policies are implemented throughout Indonesia. This is a particular challenge for Indonesia because of the numbers of schools and teachers, the geographic dispersion of schools and teachers, and the extensive devolution of responsibility for the operation of schools to districts and foundations. As the study found,

while the BSNP promulgated national standards for principals and supervisors, there were many districts that had not used the standards in any meaningful. Indeed there were many principals who had never seen the standard let alone used it. Also, there had been no national effort to collect data about the relevance or applicability of the standards nor the extent to which the standards were being achieved.

The challenge for national policy-makers is both to develop policies and practice that meet identified needs and to develop strategies to maximise their implementation at the district and school levels. In the Australian context this achieved by governments linking resource allocations to policy implementation and the achievement of policy objectives and outcomes.

5. Conclusion

There are many other issues that could be considered but time prevents this. However, the implementation of this national study demonstrates that the importance of:

1. Building strong linkages between education policy-makers and researchers
2. Developing the capacity of researchers especially in qualitative methodologies
3. Extending research and evaluation to determine the impact of principal and teacher competence and participation in professional development on student learning
4. Developing methods to ensure that national policy is implemented and that its effectiveness and impact is evaluated.

These are important challenges for researchers and policy-makers but I am confident from my experience in Indonesia that these challenges can be met.

**SCHOOL QUALITY ASSURANCE MODEL
IN THE LOCAL AUTONOMY ERA OF INDONESIA**

By: Sutarto HP, M.Sc., Ph.D.

Abstract

The aim of this paper is to formulate school quality assurance model (SQAM). Conceptually, SQAM is a procedure of activities mainly consisted of Deming cycle (PDCA) combined with Kaizen principle (continuous quality improvement) that leads school operationally and step by step improving quality of school outputs. In local autonomy era, each school needs to conduct SQAM then be accredited independent body as a public accountability. By exercising SQAM, schools will be accustomed to do self evaluation: collect quality data, analyze it, and draw conclusion as a basis for developing annual school programs. In addition, school will be ready to follow accreditation procedure and honestly present school data and physical quality evidences required by accreditation assessor. When school internally driven implements the model, quality culture will grow to lead school incrementally reaches or exceeds national education standard. Furthermore, education quality map developed from accreditation data will be valid which is very important for decision makers at local and national levels.

The approach used in formulating the SQAM, firstly, is to explore existing regulations that mandate the availability school quality assurance and describe the role and function of Central Government, Provinces, and Districts to facilitate and guide schools to exercise education quality assurance. Secondly, describe existing national polices, programs and practices articulated with literatures, research findings, and other nation practices on education quality assurance. Finally, this paper will formulate a tentative model of school quality assurance which is appropriate for Indonesia context.

The SQAM resulted from this paper needs to be discussed with relevant stakeholders in province and district levels as well as with school representations for having inputs. Piloting the model will be the next step to know whether the model is applicable effectively to lead schools improving their quality outputs.

Keywords: *school, quality assurance, model, local autonomy era.*

A. Introduction

Decentralization Era in Indonesia that started in 1999 gives authority to local governments to manage public services to their citizen base on their style and local contexts including the service of education. Some local governments have high commitment, while others do not really care to education services. In addition, geographically, Indonesia is a large country and archipelago that indicates variety in terms of human capacity and their income resources. As a consequence, the quality of education in nationwide spectrum may vary from one to other districts.

The role of Central Government is to set national education standard as a barometer to measure education quality. Through National Body for Education Standard called BSNP, in 2005 Central Government has enacted eight National Education Standards (8 SNP). Each individual school must be accredited by independent body called Badan Akreditasi Nasional Sekolah/Madrasah (BAN S/M) against this national standard. Local Government needs to lead and facilitate their schools to be accredited and the appropriate approach to prepare accreditation is that school needs to hold the philosophy of Quality Assurance and implement it.

The problem, up to now there is no national school quality assurance model yet as a reference for schools to plan, implement, and evaluate school programs to reach or exceed the national education standard. Therefore, formulation of the problem of this paper is to develop a school quality assurance model (SQAM) which is appropriate for Indonesian context and how it works.

B. Discussion

In fact, there are adequate number of legislation and regulation that mandate the need of quality assurance model and its implementation in education unit (school). Followings are some representing constitution, government, and ministry regulation relevant to education quality assurance. Indonesia Constitution of 1945, Article 28 letter C has mandated that every citizen has a right to have education. Republic of Indonesia Law number 20, year 2003 on National Education System, Article 50 states that Government determines policies and national education standard for national education quality assurance. Then, Government Regulation number 19 year 2005 on National Education Standard, Article 91 states that each education unit (school) on formal and non-formal education system is obligated to do education quality assurance. Article 92 number 1- 4 of the same regulation above states that education ministry, religious ministry, province and district offices do supervision and help education unit under their authority to manage and

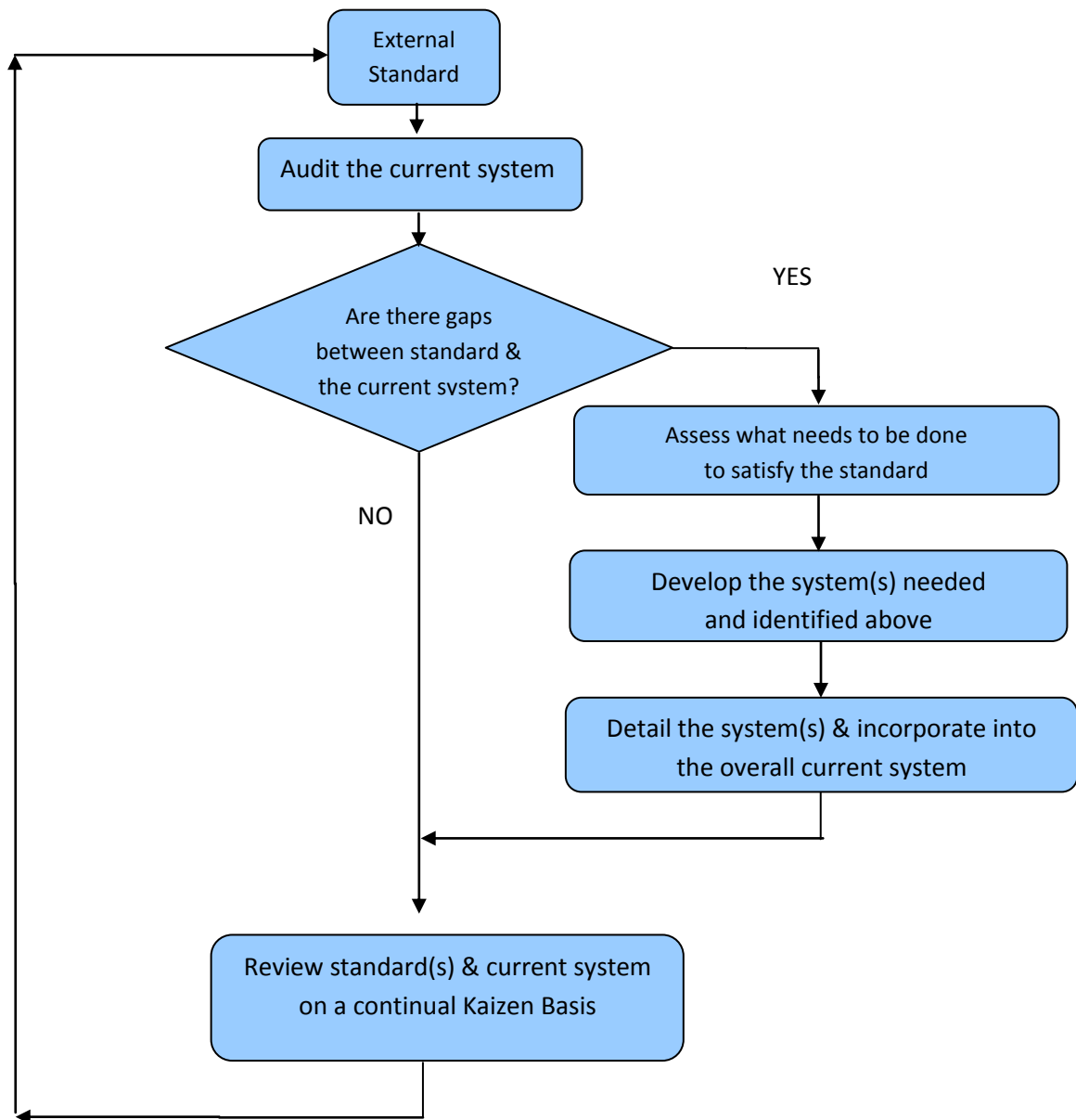
organize the implementation of quality assurance. All of these legal aspects do not describe yet in detail what education quality assurance looks like and how schools implement it.

The latest legal aspect on the matter that provides more detail information is that Education Ministry Regulation number 63 year 2009 on Education Quality Assurance System. This regulation describes the matter for national, province, and district levels. This regulation also describe from the point of national view on quality assurance aim, its paradigm, coverage, and distribution of role and responsibility for relevant stakeholders. This regulation defines that Education Quality Assurance is a systemic and integrated activities done by education unit, executor or foundation, local government, Central Government, and community for improving the level of intelligence of the nation's life through education.

The specific objective of education quality assurance of this regulation are to (1) develop education quality culture; (2) distribution of task and responsibility clearly and proportionally among education unit, organizer/foundation, local government, and Central Government; (3) having education quality map for the level of education unit/school, district, province, and national; and develop information system of education quality that are valid, integrated, and connected to education units and their stakeholders both local and national levels. Article 20 of this regulation mandates that each individual education unit (school) has to have standard operational procedure (SOP) for the implementation of education quality assurance. This SOP is also mandated for each individual organizer/foundation. Nationally, these SOP have not yet available, therefore there is a need for the development of those SOP which is in line with the Objective of this paper.

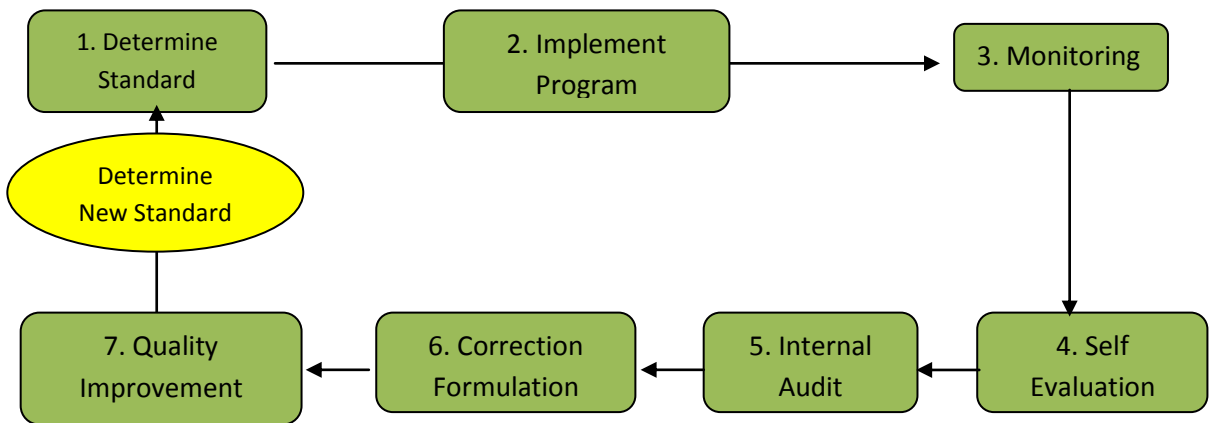
The objective of this paper is to develop School Quality Assurance Model (SQAM) that covers what the model of quality assurance looks like and how the model should be implemented step by step which is the needed SOP above. As it is briefly explained in abstract, quality assurance (QA) is a procedure of activities mainly consisted of Deming cycle (PDCA) combined with Kaizen principle (continuous quality improvement) that leads organization (school) operationally and step by step achieving and improving the quality of outputs. More detail and in general organization, Jones, et al. (2006: 119) stated that "*Quality assurance is all activities that guarantee the products that come out of the process.*" Furthermore, explained that important activities in quality assurance are primarily to identify the gap between the existing and expected quality, identify activities or components that may minimize or even eliminate the gaps, and plan program development required needed by the systems. Operationally, Jones, et al., (2006: 10) describes eight quality assurance steps which are (1) establish the quality standards, (2) audit or assess the

aspects under question against the standard, (3) identify and collate gaps, (4) identify what needs to be done; (5) detail action(s) to be resolved the gaps, (6) evaluate the new system; (7) review previous steps: the standards, assessment tools, and the improvements done to date; (8) prepare QA sheet that summarizes all the actions that have been done according to the previous seven steps. The eight steps are illustrated in Figure 1 below.



Picture 1: The Quality Assurance (QA) Steps (Jones, et al., 2006: 10)

In the education field, Asean University Network (AUN) quality assurance model in Toni Atyantoko D. (2006) describe the quality assurance cycle consists of seven stages: (1) Quality Standards, (2) Implementation, (3) monitoring, (4) Self-Evaluation, (5) Internal Quality Audit; (6) Formulation of Correction; (7) Continuous Quality Improvement. The seven stages shown in Figure 2 below.



Picture 2: AUN Quality Assurance

Furthermore, relevant to school/madrasah, Tony Atyntoko D. (2006: 39) adds the model with suggestion to the development of guidance book for each step as shown in Picture 3.

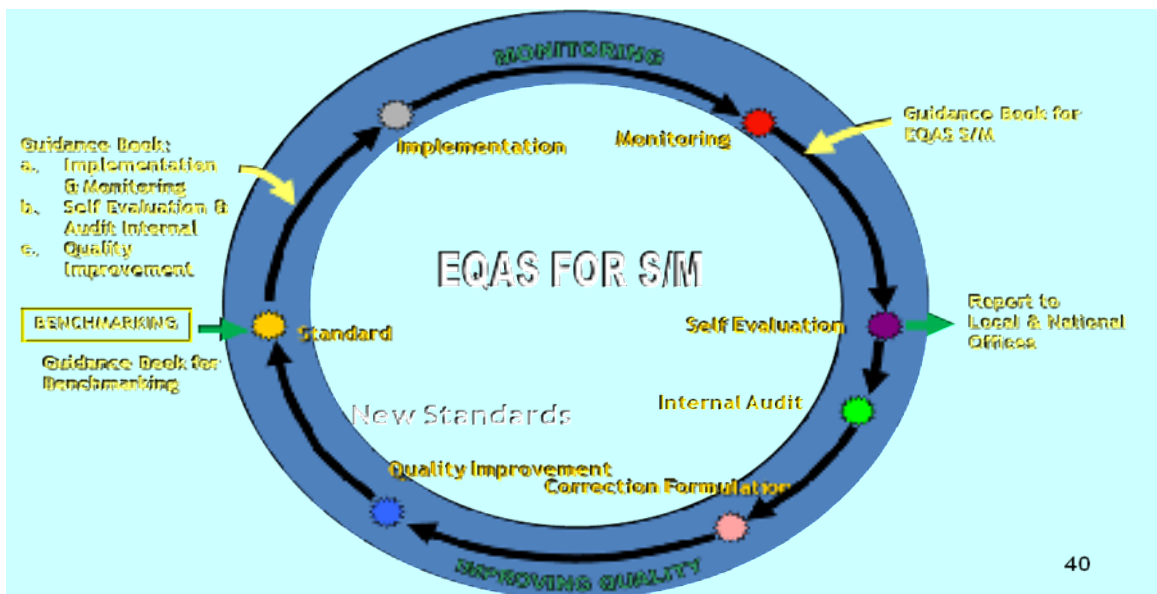
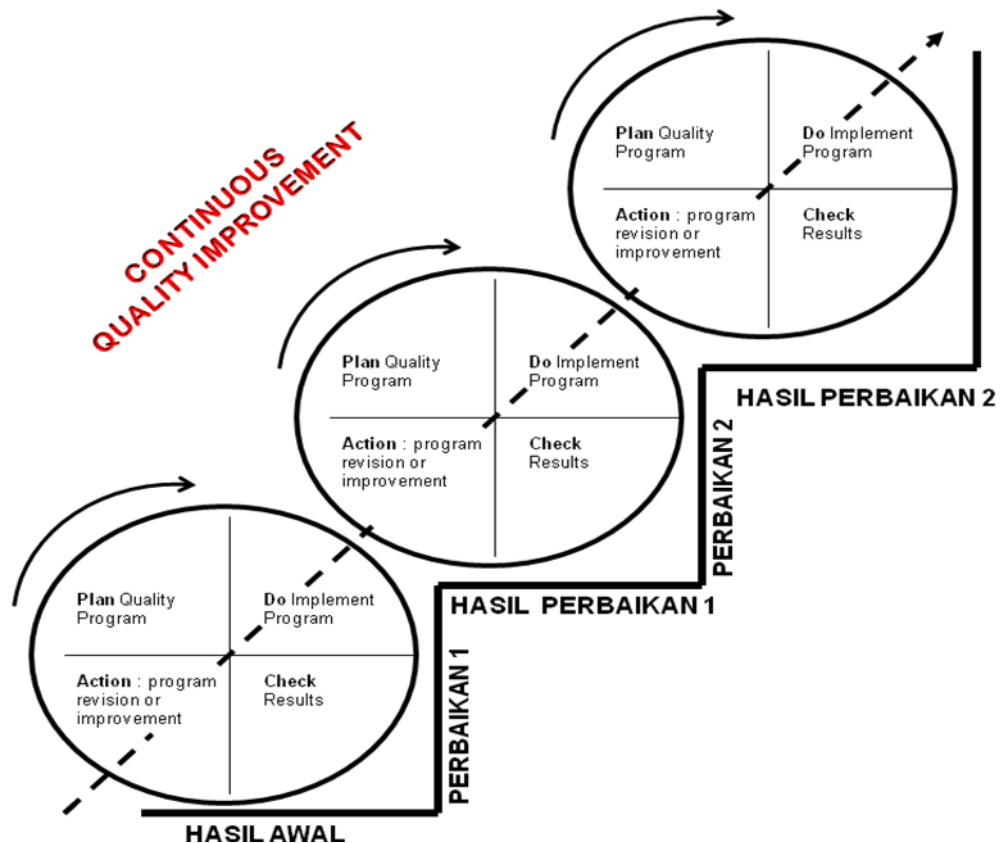


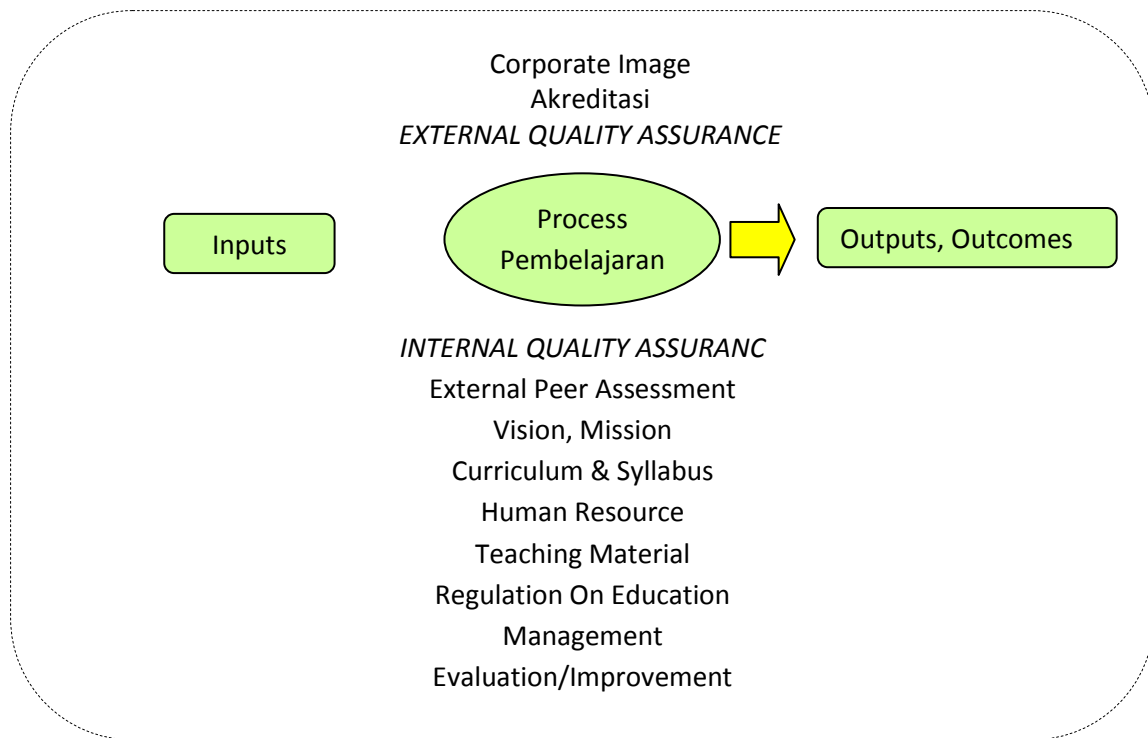
Figure 3: A Cyclic System of Quality Assurance for School/Madrasah

The next model of quality assurance is precisely based on Deming cycle (plan, do, check, and action - PDCA) and Kaizen principle (continuous quality improvement-CQI). The advantage of this model is a simple one to be memorized and easily implemented. This model may fit for small institution and may needs more additional form and explanation for big institution. The model shown in the following Picture 4.



Picture 4: Quality Assurance Model of Deming & Kaizen Principle

In regard to audit, Parri (2006: 107) in Journal of Vodyba-Management explains that there are two types of audit which are internal and external audits. Internal Audit is self institution audit with the purpose of internal accountability and the development of the institution. Internal audit focus on inputs, processes, and outcomes with physical evidence and information about the compliance program, vision, and mission of the institution. While External Audit is undertaken by outside institution team to determine institution performance. External Audit action and analysis is necessary as a form of accountability to the public on institution's goal achievement. The form and object of internal and external audits in the quality assurance school context are shown in Figure 5.



Picture 5: Form and Object of Internal & External Audits in QA School Context

When internal quality assurance has been implemented by internally driven by quality obsession from all staff therefore, quality culture has been grown in the institution. In relation to grow the quality culture, Parri (2006: 107) explains that institution needs to conduct he call As (plural of A) and Es (plural of E). The *As consists of accountability, audit, and assessment, while Es consists of empowerment, enthusiasm, expertise and excellence of the staff.*

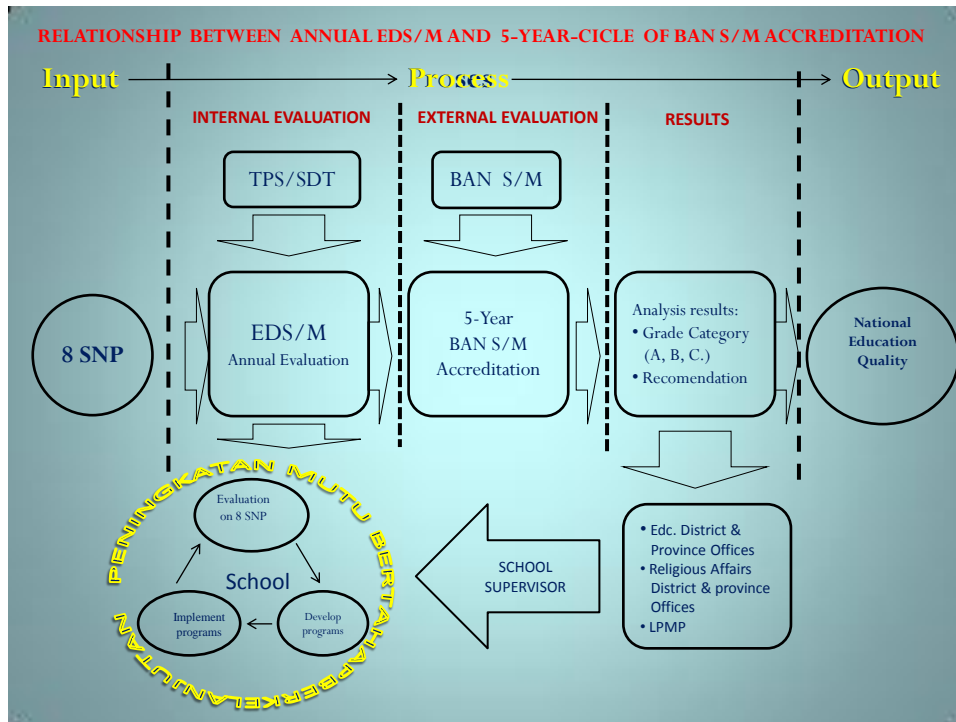
In regard to Internal Quality Assurance, Agency for Human Resources Development and Education and Culture – Education Quality Assurance dam (BPSDMPK-PMP) together Directorate General of Islamic Education have formulated one important component of the steps in quality assurance cycle at school/madrasah level called Supported School Self-Evaluation-Evaluasi Diri Sekolah/Madrasah (EDS/M) . This self-initiated evaluation model started in 2009 and has ended up in two versions: EDS/M 2011 and EDS/M 2012. Technically, EDS first version (2011) put more emphasis on the qualitative approach, while the second version (2012) over the quantitative one.

Depdiknas (2011) emphasizes that the implementation of EDS/M-2011 should hold a philosophy or motto that “EDS/M is to be conducted honestly, there is no lie among us, and

EDS/M is done by and for school/madrasah". The motto means that EDS/M must be done honestly and driven by school itself (internally driven), not because it was commanded by District Office of Education. EDS/M analysis should provide a valid portrait of school/madrasah's achievement against education national standard (8 SNPs). Physical evidence of the quality achievement needs to be identified correctly and accurately. EDS/M analysis results should come up with quality variety of education improvement programs. Some programs should go to school and need to be accommodated by district through school supervisor, and some others may go to community or business industry, or other relevant parties. Annual honestly EDS/M implementation will lead school/madrasah to be ready in 5-year cycles of accreditation done by BAN S/M. School/madrasah has been ready with quality physical evidences for 8 SNP that will be reviewed by BAN's assessor. If it is done so, accreditation results should come up with a valid map of school/madrasah quality and will reflect the real condition of school/madrasah quality in Indonesia against 8 SNP. This map is very important as a basis in decision making at school, district, province, and national levels.

In reality, most schools are not well prepared yet in exercising accreditation process. Research findings done by Soedjono (2012: 8) reported in *Journal of Education Management* Volume 1 Number 2, Augustus 2012, reported that in accreditation process (preparation, implementation, and follow-up) schools have not yet addressed accreditation is external quality assurance which is a part of quality assurance that cannot be separated from the effort of improving school quality. In preparation step, school just filled in the form without making effort to connect with management process in the school. In the step of implementation, schools lead assessors in such a way so that assessor just reviewed and asked quantitative data within short time frame. For follow up action, accreditation results were not yet followed by all school personnel and were not yet become school priority program.

Sutarto (2010: 8) illustrates the relationship between annual EDS/M implementation and 5-year cyclic accreditation process can be shown in the following Picture 6.



Note: TPS stands for Tim Pengembang Sekolah or School Development Team(SDT)

Picture 6: The Relationship between Annual EDS/M and 5-year Cyclic of BAN S/M Accreditation

Reviewing all models of quality assurance above, writer proposes Model 2- AUN Quality Assurance. This model is easily understood and simple. In addition, it is quite detail representing the spirit of Deming Cycle (PDCA) combined with Kaizen Principle (CQI). The model is cyclic continuous quality improvement that consists of seven steps. One cycle of the model implementation should be designed coincidentally with academic school year (one year). To meet or exceed 8 SNP or international standard(s) a school/madrasah should do cycle by cycle quality assurance model. The model is just general procedure applied in each continuing activity. To be detail, operational, and step-by-step of doing one job or task, school needs to develop standard operating procedure (SOP) for each of 8 SNP. One initiation in developing education SOP was done by Institution of Education Quality Assurance (LPMP) of Yogyakarta Province. The SOP is provided In attachment section of this paper. Following description will present SOP definition, its rational, the benefit of implementing it, and how should SOP be written.

United States Environment Protection Agency - U.S. EPA (2007:1) defines a Standard Operating Procedure (SOP) is a set of written instructions that document a routine or

repetitive activity followed by an organization. The development and use of SOPs are an integral part of a successful quality system as it provides individuals with the information to perform a job properly, and facilitates consistency in the quality and integrity of a product or end-result. In addition, SOPs describe both technical and fundamental programmatic operational elements of an organization that would be managed under a work plan or a Quality Assurance (QA) Project Plan. SOPs detail the regularly recurring work processes that are to be conducted or followed within an organization. They document the way activities are to be performed to facilitate consistent conformance to technical and quality system requirements and to support data quality.

Substantially, SOPs are to be specific to the organization or facility whose activities are described and assist that organization to maintain their quality control and quality assurance processes and ensure compliance with governmental regulations. If not written correctly, SOPs are of limited value. In addition, the best written SOPs will fail if they are not followed. Therefore, the use of SOPs needs to be reviewed and re-enforced by management, preferably the direct supervisor. They also need to be readily accessible for reference in the work areas of those individuals actually performing the activity, either in hard copy or electronic format, otherwise SOPs serve little purpose.

The benefits of having SOPs, they should minimize variation and promotes quality through consistent implementation of a process or procedure within the organization, even if there are temporary or permanent personnel changes. SOPs can indicate compliance with organizational and governmental requirements and can be used as a part of a personnel training program, since they should provide detailed work instructions. It minimizes opportunities for miscommunication and can address safety concerns. When historical data are being evaluated for current use, SOPs can also be valuable for reconstructing project activities when no other references are available. In addition, SOPs are frequently used as checklists by inspectors when auditing procedures. Ultimately, the benefits of a valid SOP are reduced work effort, along with improved comparability, credibility, and legal defensibility.

Writing style of SOPs should be concise, step-by-step, easy-to-read format. The information presented should be unambiguous and not overly complicated. The active voice and present verb tense should be used. The term "you" should not be used, but implied. The document should not be wordy, redundant, or overly lengthy. Keep it simple and short. Information should be conveyed clearly and explicitly to remove any doubt as to what is required. Also, use a flow chart to illustrate the process being described. In addition, follow the style guide used by your organization, e.g., font size and margins.

C. Conclusion:

In autonomy era, it is appropriate Central Government has formulated 8 National Education Standards as a reference to measure local/district education achievement. This measurement has been conducted by BAN S/M and resulted a national map of educational quality against 8 SNP. There is an allegation that accreditation process has not been objectively conducted due to some schools are not honest in reporting their achievement. Political tension has drive school principals to do so. Some district leaders wants their schools gain a high percentage of A grade in accreditation with minim or may be no support to schools.

School Quality Assurance Model (SQAM) proposed in this paper is AUN one. It is simple model however it is quiet detail procedure/steps and stick into the spirit of Deming cycle and Kaizen principles. The model provides schools with tools and procedures to improve their quality achievement. Capacity building for school personnel on this matter is a must. When schools conduct SQAM properly, they will be accustomed to do self evaluation, collect relevant physical evidences to prove their quality achievement. This activity should leads school to be honest and ready to follow school accreditation process properly. At the same time, socialization and awareness of this model to province and district offices needs to be done with an intention having support and facilities from them. SQAM should improve school quality and grow school quality culture. In addition, SQAM should raise number of A grade schools in accreditation. One important thing that objective accreditation process will end up with a valid map of education quality achievement at the level of school, district, province, and national that is very important as a basis in decision making.

The SQAM needs to be equipped by SOP to achieve or exceeding each national standard from 8 SNP. Then, SOP needs to be written in a concise, step-by-step, easy-to-read format. The information presented should be unambiguous and not overly complicated. The active voice and present verb should be used. The term "you" should not be used, but implied. The document should not be wordy, redundant, or overly lengthy. Keep it simple and short. Information should be conveyed clearly and explicitly to remove any doubt as to what is required. Also, use a flow

chart to illustrate the process being described.

REFERENCES

- Depdiknas, Direktorat Peningkatan Mutu Pendidik dan Tenaga Kependidikan (PMPTK). 2011. *Pedoman Evaluasi Diri Sekolah/Madrasah (EDS/M)*.
- Depdiknas. (2008). *Peraturan Pemerintah Republik Indonesia, Nomor 19 Tahun 2005, tentang Standar Nasional Pendidikan*.
- Depdiknas. (2010). *Peraturan Menteri Pendidikan Nasional, Nomor 63 Tahun 2009, tentang Sistem Penjaminan Mutu Pendidikan*.
- Jones, M., Idrus, N., & Buchara, U. (2006). *Quality Assurance Handbook*. Jakarta: Dikti.
- Parri, J. 2006. Quality In Higher Education. *Journal of Vadyba / Management*. Nr, 2(11), 107-11
- Soedjono. 2009. Pengembangan Model Penyelenggaraan Akreditasi Sekolah Menengah Atas di Kota Semarang. *Jurnal Manajemen Pendidikan*, Volume 1 Nomor 2, Agustus 2012, h. 1-12.
- Sutarto Hp. (2011). *Problem Identification in EDS/M Implementation*. Jakarta: Training Material - unpublished
- Tony Atyntoko Dharoko. (2006). *Prinsip – Prinsip Penjaminan Mutu Pendidikan Dasar dan Menengah sebagai Inspirasi*. Jakarta: Presentation paper - unpublished
- United States Office of Environmental Protection Agency. 2007. *Guidance for Preparing Standard Operating Procedures (SOPs)*. Washington, DC: Information EPA/600/B-07/001, 20460 April 2007.

THE ROLES OF HIGHER EDUCATION INSTITUTIONS IN FACILITATING TEACHERS' NEEDS TO CONDUCT RESEARCH TO EFFECTIVELY ENHANCE EDUCATIONAL PROCESS

Della Raymena Jovanka¹, Triyono², Durri Andriani³

¹²³Faculty of Education and Teacher Training, Open University of Indonesia

dla@ut.ac.id, triyono@ut.ac.id, durri@ut.ac.id

Abstract

This paper reports a research on higher education institutions' roles in facilitating teachers' needs to conduct research to enhance educational process. Higher education institutions, especially those offering programs in educational and teacher trainings, have resources to facilitate the needs while teachers should have access to and benefit from those resources. Based on Government Regulation Number 14 Year 2005 and Ministry Decree Number 16 Year 2009, teachers are required, as professionals, to produce scientific article(s). One way to enable teachers to produce such article(s) is through conducting research. However, many articles reports difficulties teachers faced in conducting research. In this paper, analysis of pre-school teachers' perception of the importance of research to enhance learning process and teachers' abilities and hindrances to conduct research are presented. The research was conducted in Banten and Yogyakarta areas. A number of 49 pre-school teachers from 20 pre-schools were served as respondents. Both the schools and the teachers were randomly selected. All of the respondents agreed as to the importance of research to enhance learning process and 85.7% of the respondents have managed to conduct at least one research in the last five years. Nevertheless, they pointed out their concern about their lacks of skills in research especially in determining research method (70.6%), gathering data (59.2%), analyzing data (57.1%), formulating research question (49%), and developing instruments (44.9%). The respondents also mentioned their needs to increase their knowledge in teaching method (75.5%), research method in education (63.3%), students' characteristics (61.2%), and research method (42.9%). Based on these results, higher education institutions are advised to facilitate teachers in the area most needed.

Keywords: educational process, higher education, research management, teacher

Introduction

Reference [1] stipulates that teachers have to be professional in order to be able to fully function as agent of learning in increasing educational quality (verse 4). In addition, verse 20 states that in conducting their professional duties, teachers are required to:

- a. Plan and implement quality learning process, as well as assessing and evaluating learning results
- b. Increase and develop academic qualification and competencies continuously in accordance with science, technology, and arts.

It is not an easy task for teachers to carry out all of these requirements.

One way to achieve these requirements is through conducting research. Research is an effective tool to increase teachers' professional as well as teachers' competencies.

Doing research, one has to follow certain rules, be responsible, can present the facts underlying the research conducted. Nonetheless, it is not easy to conduct quality research. One has to poses skills and knowledge on formulating problems, determining method to be used, developing instruments, choosing samples, gathering data, analyzing data, and presenting research results.

This is especially important for early childhood teachers. National Association for the Education of Young Children (NAEYC) in United States of America recognizes the importance of research. Since they beliefs that excellent teachers are decision makers, engaged in a continuous interplay of theory, research, and practice [2]. NAEYC set up standards for early childhood teachers which required application of knowledge and skills through field or clinical experiences[4]

Table 1. What Tomorrow’s Teachers Should Know and Be Able to Do

STANDARD	KEY ELEMENTS	
1. Promoting Child Development and Learning	1a.	Knowing and understanding young children’s characteristics and needs, from birth through age 8.
	1b.	Knowing & understanding the multiple influences on early development & learning
	1c.	Using developmental knowledge to create healthy, respectful, supportive, & challenging learning environments for young children
2. Building Family and Community Relationships	2a.	Knowing about and understanding diverse family & community characteristics
	2b.	Supporting and engaging families & communities through respectful, reciprocal relationships
	2c.	Involving families and communities in young children’s development & learning NAEYC Professional
3. Observing, Documenting, and Assessing to Support Young Children and Families	3a.	Understanding the goals, benefits, & uses of assessment – including its use in development of appropriate goals, curriculum, & teaching strategies for young children
	3b.	Knowing about and using observation, documentation, & other appropriate assessment tools and approaches, including the use of technology in documentation, assessment and data collection.
	3c.	Understanding & practicing responsible assessment to promote positive outcomes for each child, including the use of assistive technology for children with disabilities
	3d.	Knowing about assessment partnerships with families & with professional colleagues to build effective learning environments
4. Using Developmentally Effective Approaches	4a.	Understanding positive relationships & supportive interactions as the foundation of their work with young children
	4b.	Knowing & understanding effective strategies & tools for early education, including appropriate uses of technology
	4c.	Using a broad repertoire of developmentally appropriate

STANDARD	KEY ELEMENTS	
		teaching /learning approaches
	4d.	Reflecting on own practice to promote positive outcomes for each child
5. Using Content Knowledge to Build Meaningful Curriculum	5a.	Understanding content knowledge and resources in academic disciplines: language & literacy; the arts – music, creative movement, dance, drama, visual arts; mathematics; science, physical activity, physical education, health and safety; and social studies
	5b.	Knowing & using the central concepts, inquiry tools, and structures of content areas or academic disciplines
	5c.	Using own knowledge, appropriate early learning standards, and other resources to design, implement, & evaluate developmentally meaningful and challenging curriculum for each child
6. Becoming a Professional	6a.	Identifying & involving oneself with the early childhood field
	6b.	Knowing about & upholding ethical standards & other early childhood professional guidelines
	6c.	Engaging in continuous, collaborative learning to inform practice; using technology effectively with young children, with peers, & as a professional resource.
	6d.	Integrating knowledgeable, reflective, & critical perspectives on early education
	6e.	Engaging in informed advocacy for young children & the early childhood profession
7. Early Childhood Field Experiences	7a.	Opportunities to observe and practice in at least two of the three early childhood age groups (birth – age 3, 3-5, 5-8)
	7b.	Opportunities to observe & practice in at least 2 of the 3 main types of early education settings (early school grades, child care centers and homes, Head Start programs)

Source: NAEYC, September 2012

Table 2. Percentage of “Yes” Responses to Possible Current Priorities to Enhance Students’ Effectiveness

(Multiple Responses)

NO.	PRIORITIES LISTED	PERCENT SELECTING AS PRIORITY
1	Working more effectively with infants & toddlers	30.6
2	Working more effectively with primary-grade children	14.4
3	Produce positive child outcomes in specific areas	45.4
4	Improved content knowledge in certain area	37.0
5	Comfort & skill working with diverse children	62.5
6	Comfort & skill working with children with disabilities	55.1
7	More frequent developmentally supportive interactions	46.8
8	Working more effectively with families	64.8
9	Better skills to address children’s challenging behaviors	63.9
10	Better skills in using appropriate assessments	66.2
11	Promoting children’s health, safety, & nutrition	28.7
12	Developing more professionalism & ethical standards	63.4
13	Implementing quality curriculum effectively	71.3
14	Working more effectively with other professionals	28.2
15	Knowing about & using research in practice	29.2
16	Developing students’ own research skills	22.2
17	Being more effective leaders & advocates	42.1

Source: M. Hyson, H.B. Tomlinson, & C.A.S. Morris. 2011. Quality Improvement in Early Childhood Teacher Education: Faculty Perspectives and Recommendations for the Future. <http://ecrp.uiuc.edu/v11n1/hyson.html> downloaded 1 May 2013

NAEYC developed seven standards for early childhood teachers. As can be seen in Table 1, in all of the standards, research plays important roles. The ability to conduct research will assist teachers to master the standards. Moreover, knowing and understanding will likely be achieved by doing some research. In addition, observation and evaluation appears several times in the key element of some standards (see Standard 3 and Standard 4 for examples).

Furthermore, a research by [3] found out that “Knowing about & using research in practice” and “Developing students’ own research skills” were among 17 highest priorities for

students in early childhood education. Higher education institutions need to address these priorities in order to provide early childhood teachers skills and knowledge they need to be functioned effectively. Based on table 2, the most priority to enhance students’ effectiveness is in implementing quality curriculum effectively (71.3%). While the less priority is working more effectively with primary grade children (14.4%). These results indicate that the main priority is to apply the curriculum effectively. This is consistent with what teachers should do in the future according to [4].

Method and Results

Aware of the importance of research for early childhood teachers, this research is carried out. This research aims at analyzing early childhood teachers’ need in order to conduct quality research to facilitate them in enhancing educational process. A number of 49 samples were chosen randomly from 20 early childhood facilities in Banten and Jogjakarta. Banten and Jogjakarta were chosen purposely for the first batch of the research due to their proximity to Universitas Terbuka. The convenience is justified since it is only the first step of a bigger research to involve more regions. The results of this step will be used to sharpen the instruments.

The respondents who had conducted research at least once in the last five years accounts for 87.7%. Looking at the age group, the youngest and the oldest groups shows more activities in research compared to other groups (detail in Figure 2). All of the research was on teaching-learning process. Here are examples of topics in the respondents’ research: developing children's drawing skills through descriptive method, increasing children’s social skills through playing, the usage of media for learning, developing reading eagerness in children, and children's emotional control during learning process.

Although 12.3% of the respondents have not done any research in the last five years, all agreed on the importance of conducting research for early childhood teachers.

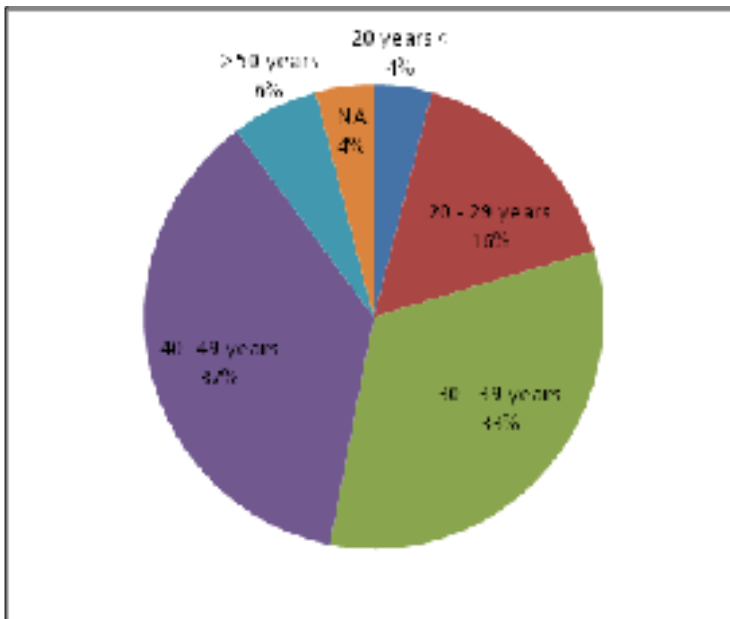


Figure 1. Respondents' Age



Figure 2. Respondent at Least Conduct One Research in the Last Five Years

Figure 3 shows that most of the respondents strongly agreed on the importance of research. Again, there is a similar tendency for the youngest and the oldest groups: 100% of members of the two groups agreed that research is very important for them.

Nonetheless, the respondents mentioned their lack of skills in conducting quality research. From seven skills deemed necessary to carry out research, determining research method was perceived as the highest and it was agreed in all age groups. It is also interesting to note

that for respondents in above 50 years group, the one and only skills they need to conduct quality research is determining research method.

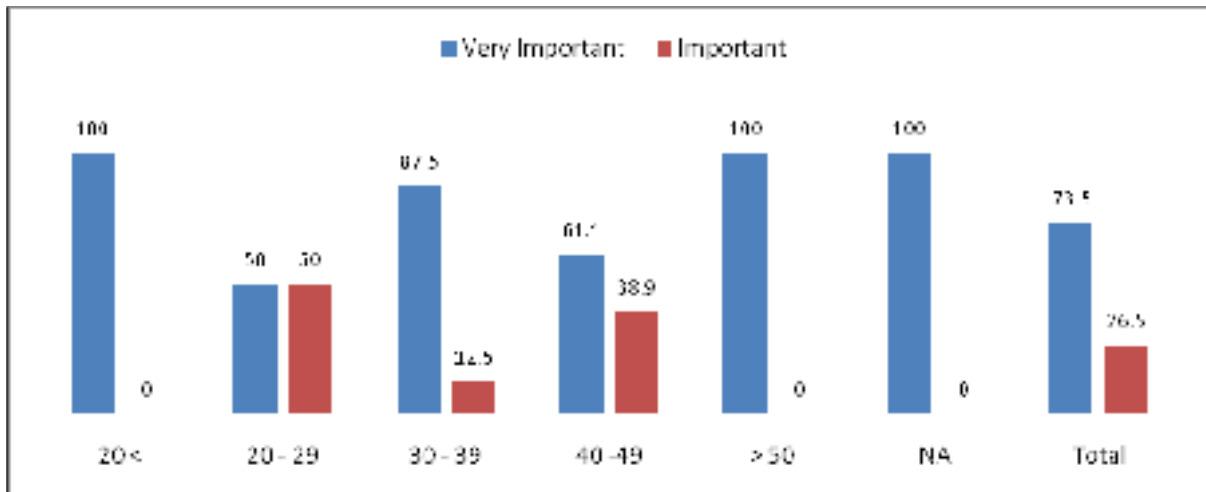


Figure 3. Respondents' Opinion on the Importance of Research for Early Childhood Teacher

Table 2. Skills Necessary to Conduct Quality Educational Research (Multiple Responses)

Age (Year)	Skills Necessary to Conduct Quality Educational Research						
	Formulating Research Question	Determining Research Method	Developing Instruments	Gathering Data	Analyzing Data	Writing Report	Presenting Research Results
20 <	50	100	50	50	50	50	50
20 - 29	50	75	62,5	75	75	87,5	87,5
30 - 39	62,5	75	56,3	68,8	62,5	62,5	62,5
40 - 49	38,9	77,8	33,3	50	50	44,4	44,4
> 50	0	100	0	0	0	0	0
NA	100	100	50	100	100	100	100
Total	49,0	79,6	44,9	59,2	57,1	57,1	57,1

Table3. Knowledge Necessary to Conduct Quality Educational Research
(Multiple Responses)

Age (Year)	Knowledge Necessary to Conduct Effective Research				
	Students' Characteristics	Teaching Method	Research Method	Research Method in Education	Research by Other Teachers
20 <	50	100	50	50	0
20 - 29	75	87.5	62.5	87.5	25
30 - 39	62.5	68.75	31.25	75	25
40 -49	55.6	66.7	38.9	44.4	27.8
> 50	33.3	100.0	33.3	33.3	33.3
NA	100	100	100	100	100
Total	61.2	75.5	42.9	63.3	28.6

Meanwhile, the respondents also mentioned their lack of knowledge to carry out quality research (Table 3). In total, most of the respondents (75.5%) pointed out their need for improvement in teaching methods. They felt they lack of knowledge related to the development of teaching method. Second in the respondents priority is knowledge in research method in education. The still need enrichment in the area. Some respondents mention they did classroom action research. Nevertheless, they need to be enlightened with more research method in education, especially in early childhood setting. Generally, teachers' skills in doing research need to be improved. In addition, teachers also mention their lack in knowledge to carry out research especially in term of teaching method and research method in education.

Based on the age of the respondents, there is similar priority given to knowledge necessary. However, there is only small number of respondents viewed research by other teachers necessary. Learning from other teachers seems to be not popular among the respondents. While the necessity to improve knowledge in research method in education is relatively high (63.3%), it is strange that the respondents overlooked research by other teachers. Not with standing students' characteristics was high on the priority (61.2%). This is in line with the [3] research.

Regarding to teacher as a profession in the implementation of its functions and duties, bears certain requirements certain requirements as stated in [5], educational personnel in charge of carrying out administrative, management, development, supervision, and technical services for support the educational process in educational unit. Teachers are the

professionals in charge of planning and implement the learning process, assessing learning outcomes, coaching and training, and conduct research and dedication to the community, especially for lecturers on the university. A teacher as professionals in education in order to carry out the above duties and responsibilities are required to have 4 competences, those are (1) pedagogical, (2) personal competence, (3) social competence, and (4) professional competence. Competence needed by teachers to improve their qualification and performing well.

NAEYC. 2012. *Where we STAND on professional preparation standards* NAEYC. <http://www.naeyc.org/files/naeyc/files/2009%20Where%20We%20Stand%20Standards%20rev%204%2012.pdf>

Constitution of the Republic Indonesia Number 20 of 2003 on National Education System in versa 39 (1) and (2)

Conclusion

Early childhood teachers are required, by regulation and experiences, to poses certain competencies and qualities. Conducting research could assist teachers to acquire some of the competencies and qualities. At the same time, the teacher themselves aware of some skills and knowledge to conduct quality education. Based on the results of this research, higher education institution could develop courses, both in degree program or short training forms, that suit the needs of teachres' lack of both knowledge and skills to carry out research. Determining research method, gathering data, analyzing data, writing report, and presenting research results are perceived to be the top priority of teachers' need to be improved.. Therefore, higher education institution, with existing resources, could facilitate early childhood teachers to be able to conduct quality research to better cater the need of the children nurturing their potential to its full. In other word, the facilitation could make teachers easier conducting research which resulted in enhancement of teaching-learning process.

REFERENCES

- Republic of Indonesia Regulation Number 14 Year 2005 on Lecturer and Teacher
- NAEYC *Standards for Initial & Advanced Early Childhood Professional Preparation Programs*. September 2012. National Association for the Education of Young Children.
- M. Hyson, H.B. Tomlinson, & C.A.S. Morris. 2011. *Quality Improvement in Early Childhood Teacher Education: Faculty Perspectives and Recommendations for the Future*. <http://ecrp.uiuc.edu/v11n1/hyson.html> downloaded 1 May 2013

The Perception On University's Quality Standards By the Internal Stakeholder and Students (Unika Atma Jaya Case)

Rusminto Wibowo, MM. Wahyuni. Inderawati, A.Y. Agung Nugroho,

Atma Jaya Catholic University of Indonesia (Unika Atma Jaya)
rusminto.wibowo@atmajaya.ac.id, wahyuni.inderawati@atmajaya.ac.id,
agung.nugroho@atmajaya.ac.id,

Abstract

Service quality is one of the major factors that determine the success of an organization including education institution. According to High Education Directorate, the quality of university is the confirmity between university's management with both the National Education Standard (SNP) and the standards determined by the university itself based on its vision and stakeholders' needs. A university is considered qualified when it is able to meet SNP (imperative aspect), determine and actualize its vision by implementing the mission (deductive aspect), as well as meet the stakeholders' needs (inductive aspect).

This study aims at seeing the stakeholders'(academic staff and students) perception on the courses' quality by viewing the gap between the expectation and the real performance of the courses that is measured using Servqual dimension. Furthermore, this study intends to look at the correlation between the courses' performance assessed in the SNP and the stakeholders' perception on the performance of the courses. The research is conducted using gap analysis method through a survey of the levels of expectation and perception on the university's performance by taking a case of two courses in Unika Atma Jaya. The results show that the perception of stakeholders on the courses' quality, measured using Servqual dimension, is in general consistent with the result of program accreditation assessment by BAN-PT. Generally, it can be concluded that there is no real correlation between the gap of perception on the performance and the courses' expectation (by stakeholders) that is assessed in SNP standards and measured using service quality dimension.

Key words: expectation, perception on performance, servqual, SNP.

Introduction

The quality of university is the conformity between the university's management with the SNP as well as the standards determined by the university itself based on its vision and the stakeholders's needs (Ditjen Dikti, 2008). Therefore, there are the standards determined by the government; shared in the university (vision), expected by the stakeholders. A university is considered as qualified when it is able to meet SNP (imperative aspect), determine and actualize the vision by implementing the mission (deductive aspect) as well as fulfill the stakeholders' needs (inductive aspect).

The government has established several activities as a monitoring action over the Quality Control System of the University (SPM-PT) such as National University Database (PDPT), **Internal Quality Control System** (SPMI) and **External Quality Control System** (SPME). The **Internal Quality Control System** (SPMI) is a systemic activity of the university's management quality control that is internally driven to monitor the management of the university by the university itself through a continuous improvement, as mandated in Article 50 point (6) UU Sisdiknas juncto Article 91 PP No. 19 Year 2005 on SNP. Meanwhile, the **External Quality Control System** (SPME) is a systemic activity of properness assessment of the program and/or university by BAN-PT (Higher Education – National Accreditation Board) or any independent institutions outside the university that are approved by the government to monitor the university's management for and on the behalf of society, as a form of public accountability as mandated in Article 60 point (2) UU Sisdiknas and Article 86 point (3) PP No. 19 Year 2005 on SNP (so called Accreditation).

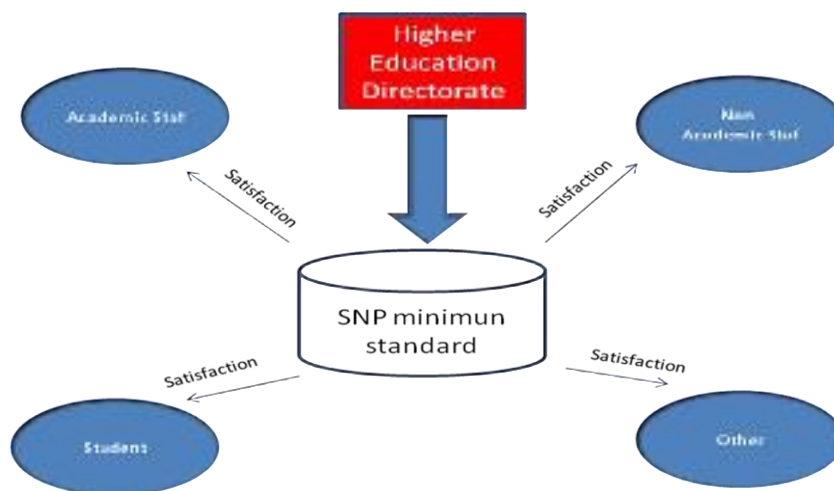
To implement SPMI, Ditjen Dikti determines National Education Standards (SNP) that contain eight minimum standards namely Content Standards (Curriculum), Process Standards (Learning Process), Competency Standards for Graduates, Standards for Educators and Education Staff, Standards of Medium and Infrastructure, Management Standards, Financing Standards, and Assessment Standards of Education. Dikti evaluates whether those eight minimum standards are met and grants the ratings to the best university implementing SPMI.

SPME is conducted by BAN-PT who conducts evaluation using certain standardizing instruments. BAN-PT issues the evaluation result in the form of accreditation A, B, C or unaccredited.

The standards assessed in the above quality control are those determined by the government. UAJ has carried out the quality control system well referring to the standards. Of 27 courses in UAJ, 20 have got their accreditations. Those with A accreditation are 13 and the rest 7 are granted B accreditation.

In this study, the standards used as references are the eight minimum standards of SPMI. The standards represent standard needs of education proces while the measurement indicators that are represented in the question items take the **borang (accreditation form)** indicators of BAN-PT for S1 (undergraduate program). The eight minimum standards of SNP are established by the government. The fulfillment of those standards also necessarily meets the satisfaction of the university's stakeholders, that are internal staff (lecturers) and students. This may happen when stakeholders have shared perception on the determined standards.

The socialization action done by UAJ can hopefully give information to the stakholders about the quality standards of UAJ that are based on Dikti's standards. Nevertheless, a study on how stakeholders perceive the quality standards applied in UAJ has never been done. In this research, the stakeholders chosen as respodets are the academic staff and students of UAJ. The reason of taking those respodets is because they are the ones who directly deal with the indicators assessed by the accreditation question items of BAN-PT. The academic staff chosen represent the courses with accreditation A that is Business Administration Studies and accreditation B that is Management.



Picture 1. The Stakeholders' Satisfaction on The Eight Standards

Literature Review

The choosing of academic staff and students as stakeholders is based on one of the research done by Chua (2004) mentioning the assessment of education quality from the stakeholders' perspective can contribute to the learners the quality of education they want to get.

In several studies on university, Servqual concept (service quality) is widely used to identify the gap between what is expected and what is received from the provider, in this case university, from some stakeholders' perspectives such as students, lecturers, and parents (Cuthbert 1996; Snipes & Thompson 1999; Chua 2004; and Legcevic 2009). Regarding to the standards of SNP by Dikti and their implementation by the universities, it is interesting to examine whether the service quality based on SNP has met the stakeholders' expectation. Using Servqual, the performance of university in giving service can hopefully be assessed.

Studies on service quality have been held in various fields using various parameters such as Service Quality or more well-known as Servqual (Parasuraman et al. 1988). Servqual Concept can also be used in various service industries including university (Aldridge & Rowley 1998; Wright & O'Neill 2002; Owlia & Aspinnal 1996; Welsch & Dey 2002; Hill et al 2002; Chua 2004; Reinecke 2006).

Some researchers did studies from several perspectives such as Comm (2000) examining the satisfaction and service quality of university from the staff perspective that is academic staff (educators). Others took perspective of students in their researches (Lim 2008; Aldridge 1998; Tahir 2010). Their studies have given descriptions that service quality and stakeholders' satisfaction have strong relation. In addition, each stakeholder has different perception in understanding the service quality standards.

In operationalizing the Servqual Concept, Parasuraman et al uses five dimensions to know the difference between the expected and perceived performance by the service recipient. The five dimensions are tangibles, assurance, responsibility, responsiveness and empathy (Parasuraman et al 1988). Tangibles include the factors related with medium and physical infrastructure, equipment, and staff appearance. Reliability involves the ability of giving promised service accurately and dependably. Responsiveness is a willingness to help customer and provide the timely service. Assurance refers to the staff's ability to create sense of security and trust towards the service provider. Empathy is the individual attention given by the company to the customer (Parasuraman et al 1988)

To put the five Servqual dimension into their operations, Parasuraman et al (1988) set 22 items that can be used in various service businesses. In the real practice, those 22 items have to be suited with the characteristics of the intended field. In this study, the assessment of university's service quality used Servqual dimensions by referring to the eight minimum standards of SNP determined by Dikti.

Research Problems

1. How do the stakeholders perceive the quality of courses seen from the gap between the expected and the real performance of courses measured by Servqual dimensions?
Is there any correlation between the courses' performance assessed in SNP standards and stakeholders' expectation on the courses' performance measured by Servqual dimensions?

Research Objectives

The objectives of this study is to know the perception of stakeholders on courses' quality seen from the gap between the expected and the real performance of the courses measured by Servqual dimensions and get the correlation between the performance of the courses assessed in SNP standards and the stakeholders' expectation on the courses' performance measured by Servqual dimensions.

Research Method

The study is the descriptive one using survey technique to give a description of academic staff's and students' perception on university's quality.

Sample Population and Sampling Technique

The population is all the academic staff and students of UAJ. Considering the time and human resources limit experienced by the researcher, the sampling technique is done purposively representing a course with A accreditation that is Business Administration Studies and Management that has B accreditation. The respondents of academic staff are the permanent lecturers of each course while the students sample is taken in an accidental purposive way that is the students who have run 2 semesters. Data collection is conducted by survey technique distributing questionnaire to the chosen sample.

Questionnaire for academic staff (lecturers) is constructed by:

1. Mapping the eight minimum standards into the BAN-PT's accreditation indicator items for S1 (undergraduate program).
2. Mapping the indicators in the accreditation **borang** of BAN-PT into Servqual criterias.

Research Results

The stakeholder respondents' profiles are permanent lecturers and students of Business Administration Studies (ABI) and Management (MAN). The number of lecturer respondents is 10 from ABI and 11 from MAN with the average teaching period 13 years for ABI's lecturers and 14,91 years for MAN's lecturers. Student respondents from ABI are 43 persons fewer than MAN's, 70 persons with the average Cumulative Achievement Index 2.52 which is lower than ABI's 3.14.

The Perception of Stakeholders on the Quality of Business Administration Studies

The service quality examined in this study is evaluated using Servqual dimensions (Parasuraman & friends 1988) which are Tangibles (physical proof), Reliability, Responsiveness, Assurance and Emphaty. The stakeholders in this study include lecturers as internal stakeholders and students as external stakholders. The indicators of quality dimensions for the lecturer respondents are based on the eight standards of SNP.

The Perception of Lecturers on Business Administration Studies Program (ABI)'s Quality

The expectation of ABI's lecturers on course's quality is quite high, in fact, in some dimensions very high such as in tangibles responsiveness and assurance. Meanwhile, the perception of ABI's lecturers on the course's quality is neutral in general or moderate except for tangibles aspect that is well valued. From the calculation of the expected and perceived quality by the ABI's lecturers, it can be seen that all dimensions show negative values meaning the perception is under the expectation. In general, ABI's lecturers feel dissatisfaction for the course' s quality except for tangibles and reliability dimensions that are perceived to meet the expectation. The values and degrees of expectation, perception and satisfaction of lecturers on the quality of ABI is as follow in Table 1.

Table 1. Expectation, Perception and Satisfaction Degree of Lecturers on ABI Program's Quality

No.	Dimension	Expctation	Percetion	Satisfaction Degree	Information
1	<i>Tangibles</i>	4.1526	3.5	-0.6526	Fair satisfactory
2	<i>Reliability</i>	4.04	3.3333	-0.7067	Fair satisfactory
3	<i>Responsiveness</i>	4.2	3.2	-1	Dissatisfactory
4	<i>Assurance</i>	4.2167	3.1667	-1.05	Dissatisfactory
5	<i>Empathy</i>	4.0667	2.6667	-1.4	Dissatisfactory
	Overall average	4.1352	3.1733	-0.96199.	Dissatisfactory

Source: Processed Primary Data

The Perception of Students on ABI Program's Quality

ABI's students in general have very high expectation on the service of the course. Meanwhile, the students perception on the given service is quite good for all dimensions. Overall, the ABI's students feel quite satisfied with the service quality of the course. The values of expectation, perception and satisfaction degree of ABI's students can be seen in Table 2 as follow:

Table 2. The Expectation, Perception and Satisfaction Degree of ABI's Students on the Course's Quality

No.	Dimension	Expectation	Perception	Satisfaction Degree	Information
1	<i>Tangibles</i>	4.1953	3.5209	-0.6744	Fair satisfactory
2	<i>Reliability</i>	4.214	3.6047	-0.6093	Fair satisfactory
3	<i>Responsiveness</i>	4.1209	3.4279	-0.693	Fair satisfactory
4	<i>Assurance</i>	4.307	3.6419	-0.6651	Fair satisfactory
5	<i>Empathy</i>	4.1907	3.3953	-0.7953	Fair satisfactory
	Overall Average	4.2056	3.5181	-0.6874	Fair satisfactory

Source: Processed Primary Data

The Perception of Lecturers and Students of ABI on the Course's Quality

The perception and expectation of the students compared to of the lecturers of ABI are averagely higher. In addition, the gap generally perceived by the students is smaller which means that they are quite satisfied with the course's quality compared to the lecturers' perception. Although the average expectation of ABI's stakeholders on the program's quality is higher than the perception, the stakeholders feel quite satisfied, based on the gap level, with the the program's quality. The expectation, Perception and Satisfaction Degree of Lecturers and Students on the program's quality can be seen in Table 3 as follow:

Table 3. The Expectation, Perception and Satisfaction Degree of Lecturers and Students of ABI on the Course's Quality

No	Stakeholder Respondents	Expectation	Perception	Satisfaction Degree	Information
1	Lecturers of ABI	4.1352	3.1733	-0.96199.	Dissatisfactory
2	Students of ABI	4.2056	3.5181	-0.6874	Fair satisfactory
	Average of stakeholders of ABI	4.1704	3.3457	-0.8247	Fair satisfactory

Source: Processed Primary data

The Perception of Lecturers on Management Course's Quality

MAN lecturers in general have a very high expectation on the course's quality. Meanwhile, their perception is generally considered neutral or average. Therefore, there is a quite big gap between the perception and the expectation. The lecturers of MAN feel dissatisfaction on the the program's qality in all dimensions. The degree of expectation, perception and satisfaction degree of MAN lecturers on the course's quality can be seen as follow in Table 4. Table 4. The Expectation, Perception and satisfaction Degree of MAN Lecturers on the Course's Quality.

No.	Dimension	Expectation	Perception	Satisfaction Degree	Information
1	<i>Tangibles</i>	4.4928	3.2297	-1.2632	Dissatisfactory
2	<i>Reliability</i>	4.6121	3.2364	-1.3758	Dissatisfactory
3	<i>Responsiveness</i>	4.5325	3.1818	-1.3506	Dissatisfactory
4	<i>Assurance</i>	4.4848	3.3333	-1.1515	Dissatisfactory
5	<i>Empathy</i>	4.5455	3.0303	-1.5152	Dissatisfactory
	Overall Average	4.5335	3.2023	-1.3313	Dissatisfactory

Source: Processed Primary Data

The Perception of MAN Students on The Course's Quality

Averagely, the degree of MAN students' expectation is high for all dimensions; further, the assurance is considered very high. Meanwhile, their perception on the course's quality in general neutral or average except in the reliability dimension which is perceived as good. Based on the gap degree between the expectation and perception on the course's quality, the students of MAN generally feel dissatisfaction, with the different degree of gap in every dimension. The gap of tangibles, reliability and assurance dimensions is considered fairly dissatisfactory. The value of the perception and satisfaction degree of MAN students on the course's quality is described in the following Table 5:

Table 5. The Expectation, Perception and Satisfaction Degree of MAN Students on the Course's Quality.

No.	Dimension	Expectation	Perception	Satisfaction Degree	Information
1	<i>Tangibles</i>	4.1057	3.26	-0.8457	Fair Satisfactory
2	<i>Reliability</i>	4.0771	3.5257	-0.5514	Fair Satisfactory
3	<i>Responsiveness</i>	4.0971	3.1457	-0.951	Dissatisfactory
4	<i>Assurance</i>	4.2057	3.4543	-0.7514	Fair Satisfactory
5	<i>Empathy</i>	4.12	3.2679	-0.8521	Dissatisfactory
	Overall Average	4.1211	3.3307	-0.7911	Fair Satisfactory

Source: Processed Primary Data

The Perception of MAN Lecturers and Students on the Course's Quality

As what has been discussed previously, the lecturers of MAN have a very high expectation on the course's quality. This fact is contrary with the MAN students' expectation which is lower. Meanwhile, the students' perception is fairly lower than the lecturers'. Seen from the gap level, MAN students have lower value or feel quite satisfied compared to the gap of lecturers who feel dissatisfaction. In average, based on the gap level, the stakeholders of MAN involving lecturers and students value their course's quality as dissatisfactory. It can be noticed in the Table 6 as follow:

Table 6. The Expectation, Perception and Satisfaction Degree of MAN Lecturers and Students on the Course's Quality

No	Stakeholder Respondents	Expectation	Perception	Satisfaction Degree	Information
1	MAN Lecturers	4.5335	3.2023	-1.3313	Dissatisfactory
2	MAN Students	4.1211	3.3307	-0.7911	Quite issatisfactory
	Average MAN Stakeholders	4.3273	3.2665	-1.0612	Dissatisfactory

Source: Processed Primary Data

Discussion

According to the expectation value of stakeholders of ABI and MAN, they have a very high expectation on the service quality of the course. The high expectation of ABI comes from the students while in MAN, it comes from the lecturers. The perception of the the courses's quality in general is perceived as neutral by both courses except the students of ABI feel high perception on the course's qualiyy. It has been mentioned previosly that all stakeholders have different gap level that represents dissatisfaction of the lecturers and satisfaction of the students of both courses. Nevertheles, looking at the overall average, the level of gap in ABI is lower or considered satisfactory on the the course's quality compared to the course of MAN that feels dissatisfactory on its quality. Related with BAN-PT accreditation for both courses, it seems that there is a consistency in general between the gap level/satisfaction degree in both courses and their accreditations. ABI has got A and MAN has B.

Mentioned previously, the lecturers' perception on the courses' performance is measured based on the eight standards of SNP while the students' perception is assessed using Servqual of Parasuraman and friends (1988). From the the values of expectation, perception and satisfaction degree in each course, it can be noticed that there is a different value between SNP (lecturers) and Servqual (students). In general, the perception value of lecturers on the courses' performance based on the SNP tends to be lower than the students which is measured with Servqual.

Conclusion

The stakeholders' perception on the courses' quality that can be seen from the gap between expectation and perception measured by Servqual is generally consistent with the accreditation assessment by BAN-PT.

The values of lecturers' perception on the courses' performance that is based on SNP assessment tends to be lower than students' perception which uses Servqual. Therefore, it can be concluded that there is no real correlation between the perception and expectation of stakeholders on the courses' performance that are assessed using SNP standards and Servqual.

REFERENCES

- Alridge, Susan; Rowley, Jennifer, 1998, "Measuring Customer Satisfaction in Higher Education", *Quality Assurance in education, Bradford, Vol 6, Iss.4*, pg 197. Arjomandi, Maziar; Kestell, Colin; Grimshaw, Paul, 2009 "An EFQM Excellence Model for higher education quality assessment", *AaeE conference proceedings*
- Blackmur, Douglas, 2008, "A critical analysis of the INQAAHE Guidelines of Good Practice for higher education quality assurance agencies", *High Educ* 56:723–734, DOI 10.1007/s10734-008-9120-x
- Brochado, Ana, "Comparing alternative instruments to measure service quality in higher education", www.emeraldinsight.com/0968-4883.htm
- Comm, Claire L, 2000, "Assessing Employee Satisfaction in Service Firms: An Example in Higher Education", *The Journal of Business and Economic Studies, Spring 2000, 6,1; ABI/INFORM Global*, pg 43.
- Cuthbert, Peter F.. (1996). "Managing service quality in HE: is SERVQUAL the answer? Part 1". *Managing Service Quality*, 6(2), 11-16.
- Cuthbert, Peter F.. (1996). "Managing service quality in HE: is SERVQUAL the answer? Part 2 :[1]". *Managing Service Quality*, 6(3), 31-35.
- Hasil Evaluasi Implementasi Sistem Penjaminan Mutu Internal Perguruan Tinggi, 2008, *Direktorat Jenderal Pendidikan Tinggi, Departemen Pendidikan Nasional*

- Legcevic, J.. (2009).” QUALITY GAP OF EDUCATIONAL SERVICES IN VIEWPOINTS OF STUDENTS”. *Ekonomska Misao i Praksa*, 18(2), 279-298.
- Lim , Fion Choon Boey, 2008, “Education hub at a crossroads The development of quality assurance as a competitive tool for Singapore’s private tertiary education”, www.emeraldinsight.com/0968-4883.htm
- Owlia, Mohammad S., Aspinwall, Elaine M.. 1996, “A framework for the dimensions of quality in higher education”, *Quality Assurance in Education*. Bradford: 1996. Vol. 4, Iss. 2; pg. 12
- Parasuraman, Zeithaml; Valarie A, 1988, “Servqual: A Multiple-Item Scale for Measuring Consumer Perception of Service Quality”, *Journal of Retailing; Spring 1988, 64, 1*, ProQuest Psychologi Journals, pg 12.
- Reinecke, Lizzie, “Beyond Academic Quality”, 2006, *ATEM New Zealand Branch 2006 Conference*, Bay of Plenty Polytechnic, Tauranga.
- Sahney , Sangeeta; Banwet D K; Karunes S, 2004, “Conceptualizing total quality management in higher education”, *The TQM Magazine*; 16, 2; ABI/INFORM Globalpg. 145
- Tam, Maureen, 2006, “Assessing quality experience and learning outcomes: Part I: instrument and analysis”, *Quality Assurance in Education*; 2006; 14, 1; *Research Library*, pg. 75.
- Tahir, Izah Mohd; Bakar, Nor Mazlina Abu; Ismail, 2010, Wan Zulqurnain Wan, “Importance-Performance Analysis of Service Quality among Business Students: An Exploratory Study”, *Interdisciplinary Journal Of Contemporary Research In Business*, Vol 2, No 1
- “Sistem Penjaminan Mutu Perguruan Tinggi”, 2008, *Direktorat Jenderal Pendidikan Tinggi, Departemen Pendidikan Nasional*

INNOVATIVE TEACHING-LEARNING RESEARCH ENVIRONMENT IN HIGHER EDUCATION : A CHALLENGE FOR BANGLADESH

**Shanta Akther Sheema
Dhaka University
sheemashanta@yahoo.com**

Abstract : Higher education is the one of essential part of the education system. The development of a modern society depends to a large movement on the nature and standard of higher education. Higher education has enormous and dynamic role to raise tendency in the developing nations. In the principal aims of higher education are to engender the new knowledge, explore research works on different social and development issues and prepare highly skilled manpower. Bangladesh is a developing country in the world. As, a developing country , it is hard to make access research in higher level education. Bangladesh, with near a 15 million (Cencus Report:2011) population and the expenditure for education is only 4.22% (2010-11, Ministry of Education). The objective of this study is to explore the barriers of education and research accessibility in higher education in Bangladesh. Institute of education and research, the institute of Dhaka University was purposively selected as study area for the present study. Document analysis and personal experience have been used for this study. However, according these barriers, researcher gave some recommendations for research accessibility in higher education in Bangladesh.

Keyword : Higher education system, Bangladesh, Research accessibility.

Introduction

Education has important role to improve people's capacity and development for any countries. Education is a key to development, for a nation and individual. Education has different levels such as primary, secondary, higher secondary and university education. Among these, university or higher education is one of the important parts of the education system. One of the most important aims of higher education is to contribute for the economy and prepare highly skilled workers. As, research is an important part of higher education, but the assess of these research and the quality of higher education is really limited in Bangladesh. However, Institute of education and resaerch, the institute of Dhaka University is one of the well known institute in Bangladesh. But, there also has some lackings in research accessibility. So, the objective of this paper is to explore the barriers, in research accessibility and give some recommendations for higher education.

Methodology

The study has applied the document analysis to give the information about research accessibility and barriers in higher education of Bangladesh. In order to collect research accessibility and its challenges in higher education, Institute of education and research(IER) , the institute of Dhaka University was selected . Data was collected from online university information on April , 2013.

Study findings :

Higher education in Bangladesh :

Higher education in Bangladesh comprises two categories of institutions: degree awarding universities and colleges affiliated to the National University (NU). There were only 4 universities in Bangladesh at the time of independence in 1971. All of those universities were publicly financed autonomous entities. At present, there are 1200 intermediate colleges, 24 public universities and 56 private universities in Bangladesh. There are 1400 colleges providing tertiary level education. Most of them offer BA (pass) education of three years duration and only one-third of them offer B.A. (Honors) courses.

Background of Dhaka University :

The first day of July 1921, the University of Dhaka opened for students. Sir P.J. Hartog was the first Vice-Chancellor. The main purpose of the University was to create new areas of knowledge and disseminate this knowledge to the society through its students. The University started its activities with 3 Faculties, 12 Departments, 60 teachers, 877 students and 3 dormitories (Halls of Residence) for the students. At present the University consists of 13 Faculties, 71 Departments, 10 Institutes, 17 dormitories, 3 hostels and more than 38 Research Centres

Background of Institute of Education and Research (IER) :

The Institute of Education and Research (IER), University of Dhaka, was established in 1959. The classes of the Institute began on July 1, 1960 with 33 students of one year M.Ed. degree program. At present, the Institute of Education and Research is an extreme institute in the field of professional education in Bangladesh. This institute also offers teaching programmes leading to higher professional degrees and provides different services in educational sectors. Its professional staff are highly educated and have long experiences with specialization in various aspects of education. They have made good contributions for many education committees and commissions to help and develop the education sector in Bangladesh. However, there are four specialized areas in the Integrated B.ED (Hons.) program. These are: (a) Arts and Language (b) Science (c) Social Science (d) Special Education. Master of Education Program has been designed and modernized under the following ten departments - Pre-Primary & Primary Education, Special Education, Non-formal and Continuing, Educational Psychology and Guidance, Language Education, Science, Mathematics and Technology Education, Educational Planning and Management, Educational Evaluation and research, Social Science Education and Curriculum and Instructional Technology.

Research Accessibility of Dhaka University :

Dhaka University is a well-known university in Bangladesh. So, it has committed to promote research in all fields of knowledge. There are many new research projects undertaken every year. However, there is some information about research accessibility of Dhaka University website. These are – “ Six half-yearly English journals and one ten-monthly Bengali journal are published by six faculties regularly. Ten more research journals are published by individual departments. University of Dhaka is one of the leading research institutes in Bangladesh, research in Bangladesh is dominated by two institutes: the University of Dhaka and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) publishing 18% and 17% of all Bangladesh's publications, respectively”.

So, from this information, it is clear that Dhaka University has some accessibilities for research works.

Research Accessibility of Institute of education and research :

There also has research accessibility in this institute. Institute has own published research journal "Teachers World". Institute teachers can publish their research work by this journal. However, a few number of student can get chance to publish their research work by this journal. But, sometimes, institute couldn't publish their journal only for short allocation.

Barriers of Higher Education and Dhaka University :

As higher education is the one of most important part of education, but now a days, Bangladeshi student faces many challenges in higher education level which also makes barrier in innovative teaching learning research environment. Md. Rabiul Islam (2010) mentioned some crucial point which makes barrier in higher education. These are- Poor Quality of Teaching Staffs, Traditional Teaching Method, Corruption and Nepotism, Teachers and Students Politics, Inadequate Library and Laboratory Facilities, Weak Financial Base and Session Jam. However, Dhaka University is well known public university in Bangladesh, but there are a lot of challenges faced by students in their education life. Teachers politics, involvement of teachers with other professions, nasty student politics, lack of residential hall & Shortage of seat, classroom crisis, session jam, lack of modern facilities are the barriers of Dhaka University in Bangladesh. These barriers may create complication in studies and moreover, innovative teaching-learning research environment.

Barriers of Institute of Education and Research :

There have also same barriers in Institute of education and research. Teachers politics, lack of modern facilities in classroom, involvement of teachers with other professions, lack of ICT facilities and traditional teaching method, lack of new books, lack of references, are make barriers in innovative teaching-learning research environment. However, as, this institute is highly dedicated for primary education, secondary education and curriculum in Bangladesh. So its very important to solve these barriers and to give research accessibility both for teacher and student to contribute the education sector in Bangladesh.

Recommendation and Conclusion :

As higher education should be highly participatory and research based. So, in order to move from this poor situation of research accessibility and to improve the better quality of

higher education in Bangladesh and to build the innovative teaching-learning research environment, some recommendations can be maintained here-

1. **Financial help for research work** : This is the crucial part of research accessibility. Bangladesh government and all university administration should allocate money for innovative teaching-learning research environment. However, university administration research committee also investigate this allocation in every department and institute.
2. **Compulsory thesis** : This is the crucial part of innovative teaching-learning research environment. As, thesis is very important to get the clear conception of research, so every department and academic committee should give this access for every students.
3. **Conference and seminar for publication**: As publication is the one of important part for higher education, so every institute should arrange conference and seminar for publication . They can publish all teacher and students research work in conference proceeding.
4. **Need to helpful minded and experienced teacher** : Teachers should help his student for their research works. So, teacher should have experienced and strong educational background. However, in this way, student can get many information and knowledge from their teachers. They also can learn many innovative research way.
5. **Training and workshop for research** : Higher education institute should arrange some training and workshop for increasing research accessibility. Teacher should share their research experience and working area to their student. However, in this way, student will be interest to research and also can contribute the education sector.
6. **Collaboration research program** : University can arrange some collaboration research program with other university and abroad. Teacher and student both can share their experience and research work by this program. Sometimes, university can give job accessibility for student from this collaboration program.

Conclusion:

Higher education is very essential element for development of a nation. The goals of higher education and particularly the university education are to expand the knowledge, share knowledge and develop the society . But the higher education system in Bangladesh is still questionable. Many factors are working for these barriers. However, these barriers are also impede in higher education and teaching-learning research environment. So, Bangladesh Government should take initiative for quality improvement and building innovative teaching-learning research environment in higher education.

References :

Retrived from

http://www.bzu.edu.pk/PJSS/Vol30No22010/Final_PJSS-30-2-09.pdf retrived on 20 April, 2013

Retrived from <http://www.unnayan.org/edu.conf/march.3/10.20-Md-Rabiul-Islam.pdf> retrived on 20 April,2013

Retrived from

http://www.thefinancialexpress-bd.com/more.php?news_id=130376&date=2012-05-22 retrived on 30 May, 2013.

Retrived from .

http://www.du.ac.bd/department/common/ier_home.php?bodyid=IER retrived on 1 May, 2013.

Retrived from <http://www.du.ac.bd/research.php> retrived on 20 April,2013.

Retrived from

http://www.thefinancialexpress-bd.com/more.php?news_id=94830&date=2012-01-18 retrived on 1 May,2013

THE USE OF GEOGRAPHIC INFORMATION SYSTEM TECHNOLOGY FOR EDUCATION DATABASE CONSTRUCTION IN SOUTH WEST SUMBA DISTRICT

Qadriathi Dg Bau¹, Sulaiman A², Zaenuri Mastur³

Graduate Program of State University of Yogyakarta¹, State Polytechnics of Kupang², State
University of Semarang³
qadriathidgbau@yahoo.co.id¹, Eman_qad@yahoo.com², Zaenuri_Mastur@yahoo.co.id³

Abstract

Map-based data are presented to enable easy reading of the data. The data presented can be optimized with the use of Geographic Information System (GIS). To support the use of GIS in the management of necessary data and information, the data shall be well structured and organized, which can be done in the database preparation. Spatial database in GIS is commonly called graphical data; meanwhile the tabular database is called attribute data. Assisted with GIS, both graphical and attribute database provide an easy spatial analysis, which can be presented in both hardcopy and softcopy as cartography presentation and more attractive information system. As GIS suggests, the system has been applied in a variety of research themes with space use as the basis of analysis including the field of education to facilitate the management of education in the era of regional autonomy. The study aims to (1) construct education database with the use of Geographic Information System to record data of education in all levels in South West Sumba District, (2) map and present the profile of schools at all levels of education in the South West Sumba District, which is made digitalized to enable easy data update. As a result, 88 thematic maps have been made and stored in a digitalized spatial database.

Key words: Geographic Information System, Database, Education in South West Sumba District

A. INTRODUCTION

Developments in science and technology have brought changes in almost all aspects of human life. Various problems can only be solved by mastery and development of science and technology. The changes lead people to a tighter global competition. Therefore, the quality of human resources needs to be improved and developed in a planned, focused, intensive, effective and efficient development process.

Education is very crucial in the process of improving the quality of human resources considering that it is a process integrated with the process of improving the quality of human resources itself. Hence, the government along with the private sector shall keep improving the education, among others, through improving facilities, developing and designing instructional materials, developing and improving curriculum and assessment system, training for teachers and other educators and many more.

Education-related data and information is getting increasingly important to support the sustainable development of education and to minimize or prevent common sense-based improvement of education. However, the role of utilizing data and information for decision-making, policy formulation, development planning, implementation, and monitoring and evaluation in improving education remain insufficient. This condition will inhibit long-term and sustainable quality of education.

An inventory shall be done to find out the condition. The inventory includes the condition of school facilities and infrastructure, teachers and students including the distribution and the number of teachers in each school, teacher ratio, teacher rank, employment status of teachers, teacher qualifications, number of students, number of school-aged children, and students' national test results. The inventory of the condition of the facilities and infrastructure covers the number of classrooms, classroom space, classroom seats, school distance to the nearest school at the same level in each sub-district, the number of school-aged children in each sub-district, the number of schools per sub-district, completeness of instructional media, distinguishing schools with proper and improper infrastructure, and distinguishing schools based on school level.

The Agency of Education, Youth, and Sports of South West Sumba, and most agencies of education in Indonesia still use manual system (recording on the books) and separated data in excel file. This practice certainly brings about problems in storing and processing data as important information. In this, GIS therefore is deemed necessary.

The use of integrated Geographic Information System enables easier database, in which mapping and comparing quality of education in given areas can be done.

Map-based data presentation helps easy understanding of the data and space analysis. Information which includes school physical condition, condition of teachers and students, and infrastructure in the form of a map can be optimized by using GIS technology. To support the use of GIS in the management of data and information, the data shall be well structured and organized as the database of education.

Decent database comprises two interrelated components, i.e. the spatial database and the tabular database. Spatial database in GIS is commonly called graphical data; meanwhile the tabular database is called attribute data. Assisted with GIS, both graphical and attribute database provide an easy spatial analysis, which can be presented in both hardcopy and softcopy as a cartography presentation and a more attractive information system.

The study formulates the problems as follows: (1) how to construct an education database with the use of Geographic Information System to record data of the education at all levels in South West Sumba District, (2) how to map and present the profile of schools at all levels of education in the South West Sumba District. Meanwhile, study aims to (1) construct education database with the use of Geographic Information System to record data of education in all levels in South West Sumba District, (2) map and present the profile of schools at all levels of education in the South West Sumba District, which is made digitalized to enable easy data update.

B. LITERATURE REVIEW

1. Database

The database is a collection of inter-related data or database is a massive set of inter-related data. The main characteristics of a database (Prahasta, 2005), include:

- a. representing aspects of the real world;
- b. well structured;
- c. representing the current state
- d. users and application are available;
- e. stored permanently in the computer's memory, and
- f. can be accessed and manipulated using the Data Base Management System (DBMS).

Further, DBMS is a collection of programs which enables to: (1) define the structure, (2) construct a set of data, (3) manipulate the data (query, update), ensure consistency, prevent from misuse, recover from failure, and ensure concurrency of a database. Database aims to cover:

- a. Speed, fast in storing, manipulating and retrieving data;
- b. Space, the efficiency of storage space;
- c. Accuracy;
- d. Availability, keeping abreast with developing data and organizing data distribution (e.g. student names);
- e. Completeness, anticipating changes in the data structure;
- f. Security; and
- g. Sharability, is a multi-user support for the consistency of data and the deadlock prevention

2. Geographic Information System (GIS)

Geographic Information System (GIS) constitutes a unified formal that consists of various physical resources and logic related to the objects on the surface of the earth. Thus, GIS is software for entry, storage, manipulation, displays, and output of geographic information along with its attributes (Prahasta, 2002). Further, GIS forms and stores data and information in relational tables, which connect the elements and attributes. Therefore, the attributes are accessible through the map elements, and in return, the map elements are accessible through the attributes.

Another definition states that GIS is an information technology which analyzes, stores, displays both spatial and non-spatial data. Whereas, the information system refers to a procedure for storing and manipulating geographically referenced data done either manually or computerized. The definition concludes that GIS is an information system based on the basic work of computer able to store, process (retrieving, analyzing and describing data) (Aronoff, 1989 in Dulbahri, 1996), meanwhile as Berhandsen (1992 in Prahasta, 2002) defines, GIS is a computer system used to manipulate geographic data. This system is implemented with hardware and computer software for: (a) acquisition and verification of data, (b) compilation of data, (c) data storage, (d) changes and update, (e) management and exchange of data, (f) manipulation of data, (g) the retrieval and presentation of data, and (h) analysis of data.

The followings present the characteristics of GIS (Hartono, 1997 in Qadriathi, 2005):

- a. SIG has a data input sub-system to accommodate and manage spatial data from various sources. The subsystem also contains transformation process of spatial data of different types.
- b. SIG has a data storage and retrieval sub-system that enables spatial data to be called, edited, and updated;
- c. SIG has a data manipulation and analysis sub-system which provides role of data, grouping and separation, estimation of parameters and constraints, and the modeling function, and
- d. SIG has a reporting system which provides the entire or partial database in the form of tables, graphics, and maps.

GIS categorizes data into two groups, i.e. spatial data and non-spatial data. The spatial data contains the location of an object in a map based on geographic position of the object on the earth by using a coordinate system. Spatial data has, among others, two basic elements:

a. location

Location commonly refers to the geographic location of an object in the earth coordinate system, but other geographic codes can also be used, e.g. zip code.

b. attributes

Attributes are the basic characteristics or basic features of an object. Non-spatial data represents the descriptive aspects of the modeled phenomenon. Such data are often referred to as the attribute data. In a map, the attributes are usually presented as a text or a map legend. So far, in general, human perception towards the spatial data can be represented in two forms, i.e. vector data model and raster data model.

The definition and characteristics of the GIS and the database become the basis for infrastructure and physical facilities, as well as those related to education to be stored in a database.

C. METHOD OF THE STUDY

The study uses survey and secondary data analysis as the method. Survey research takes a sample from a population and uses a questionnaire as the main data collection instrument. Development of information system requires the design of spatial database models based on the distribution of schools at all levels and other information required in the form of non-spatial data. The data visualized represents spatial database model, which describes the location of the school building at all levels of education as well as information related to the quality of education in the area of study.

The study uses spatial and non-spatial data. The data sources are as follows:

- a. Secondary data with compilation technique obtained from the relevant agencies, including the Agency of Education, Youth and Sports and Statistics Bureau of South West Sumba District and related agencies.
- b. Analogue map is a map of land use. Analog maps can be used for analysis with register and transform to fit the coordinate point with the position on site. After that, on screen digitations can be performed.
- c. GPS survey data to determine the coordinates of the position of the school at all levels of education in South West Sumba District.
- d. Observation data, including field observation and recording of the object using a digital camera.
- e. Questionnaire data to find out information about the condition of school facilities and infrastructure, teachers and students including the distribution and the number of teachers in each school, teacher ratio, teacher rank, employment status of teachers, teacher qualifications, number of students, number of school-aged children, and students' national test results, the number of classrooms, classroom space, classroom seats, school distance to the nearest school at the same in each sub-district, the number of school-aged children in each sub-district, the number of schools per sub-district, completeness of instructional media, distinguishing schools with proper and improper infrastructure, and distinguishing schools based on school level. The questionnaire was filled out by the school.

D. RESULT OF THE STUDY

The construction of education database in South West Sumba District includes all schools at all levels starting from digitization technique. Map digitization is basically computerized map making. Storage of files on a computer from the digitized map is grouped based on the layers in each type. The digitized map of South West Sumba District uses 3 types of layers, i.e. polygon type, point type, and line type. In each process of digitization, a number of attributes were added to fit the need of each object. The attributes will later be information on the object.

Seven maps are used as input for database construction i.e. maps of sub-district administration, road network, number of schools at all levels, number of teachers, teachers' academic qualifications, number of learning groups, number of passing students, and the condition of school facilities and infrastructures. As a result, 88 thematic and digitalized maps along with attributes have been made from the seven maps. These maps include:

1. Maps of school distribution of Kindergarten in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
2. Maps of school distribution of Elementary in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
3. Maps of school distribution of Junior High School in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
4. Maps of school distribution of Senior High School in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
5. Maps of number of learning groups in Elementary in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
6. Maps of number of learning groups in Junior High School in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
7. Maps of number of learning groups in Senior High School in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
8. Maps of number and rank of teachers in Kindergarten in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
9. Maps of number and rank of teachers in Elementary in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;
10. Maps of number and rank of teachers in Junior High School in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo; and
11. Maps of number and rank of teachers in Senior High School in 8 sub-districts in the South West Sumba District which includes the sub-districts of Loura, West Wewewa, East Wewewa, North Wewewa, South Wewewa , Kodi, North Kodi, and Kodi Bangedo;

Figure 1 - 7 present several maps compiled in digital database in hardcopy.



Figure 1. Maps of school distribution of Junior High School in North Kodi Sub-district

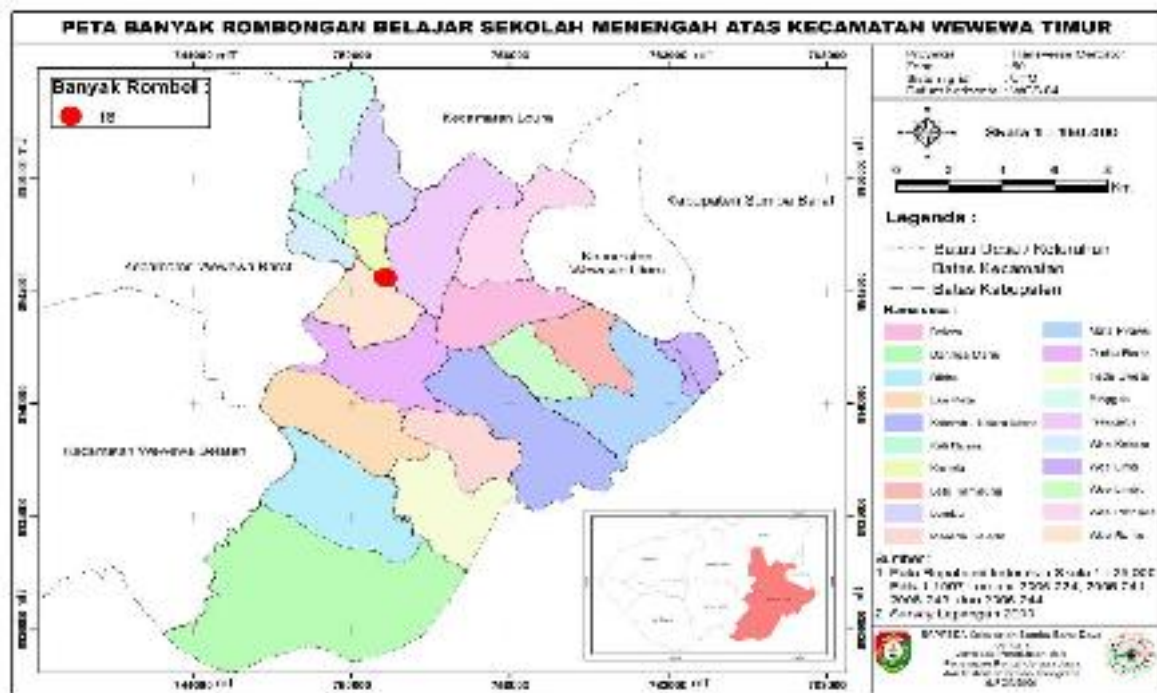


Figure 2. Maps of number of learning groups in Senior High School in East Wewewa Sub-district

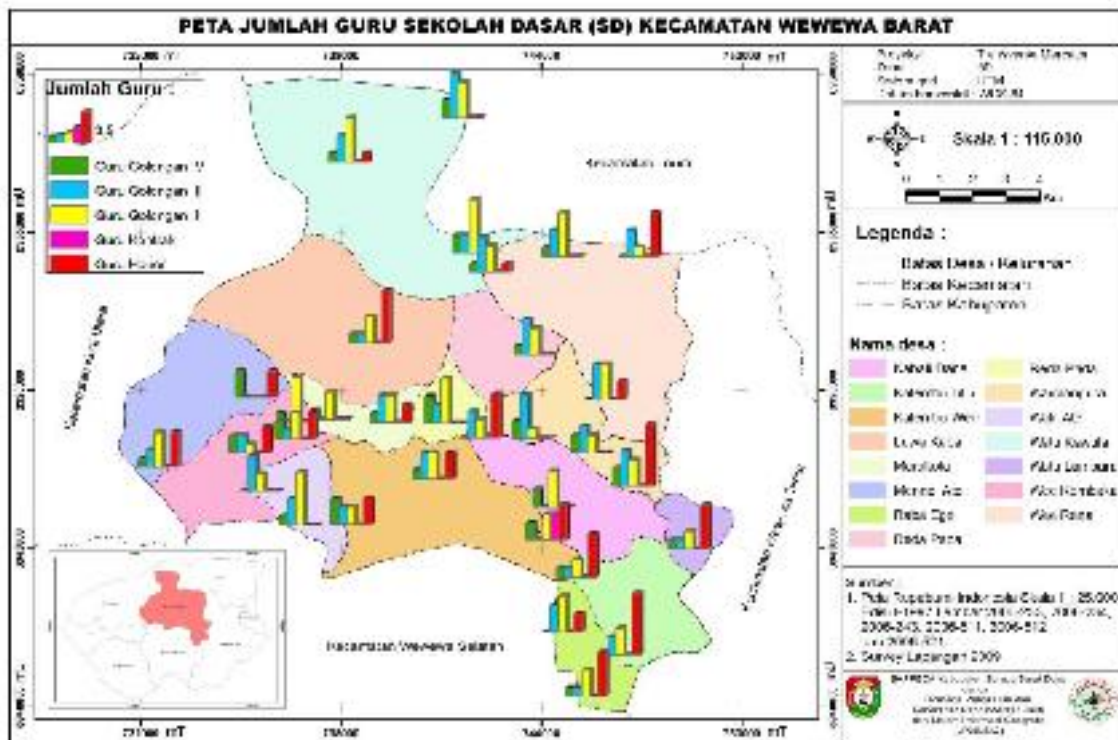


Figure 3. Maps of number and rank of teachers in Elementary in West Wewewa Sub-district

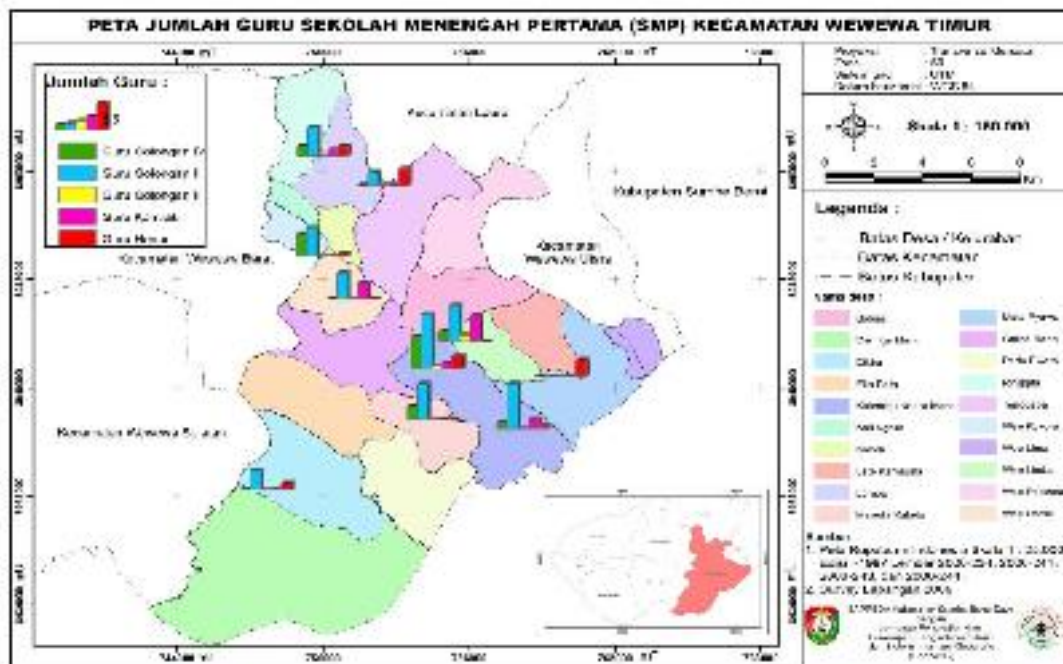


Figure 4. Maps of number and rank of teachers in Junior High School in East Wewewa Sub-district



Figure 5. Maps of school distribution of Elementary in North Kodi Sub-district

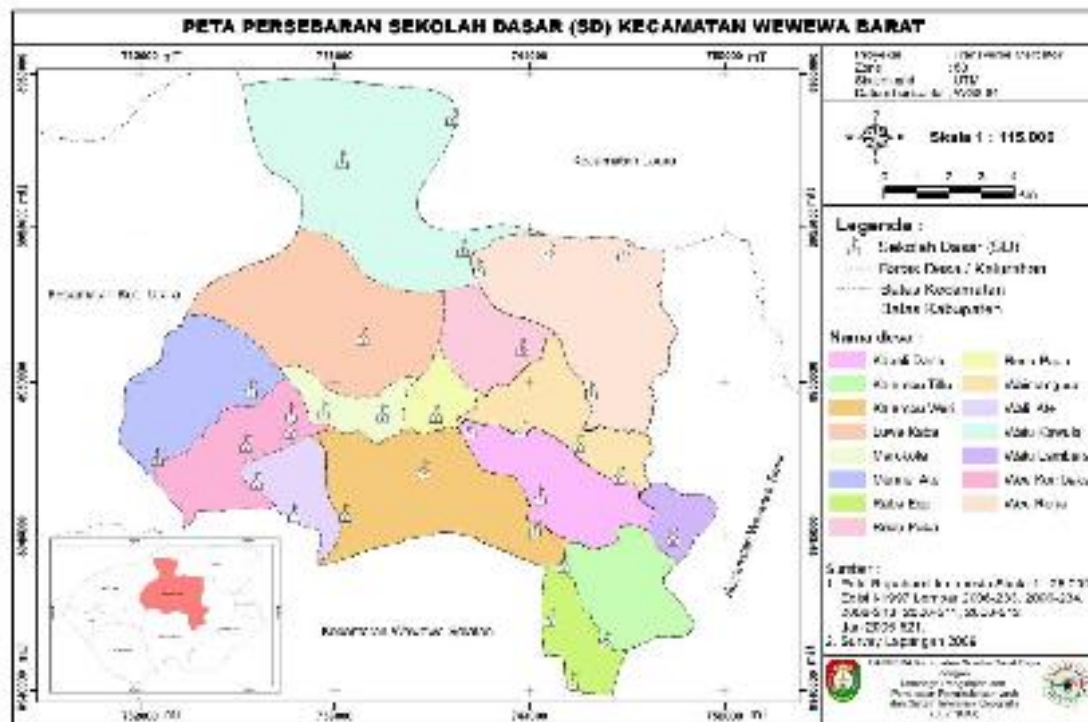


Figure 6. Maps of school distribution of Elementary in West Wewewa Sub-district

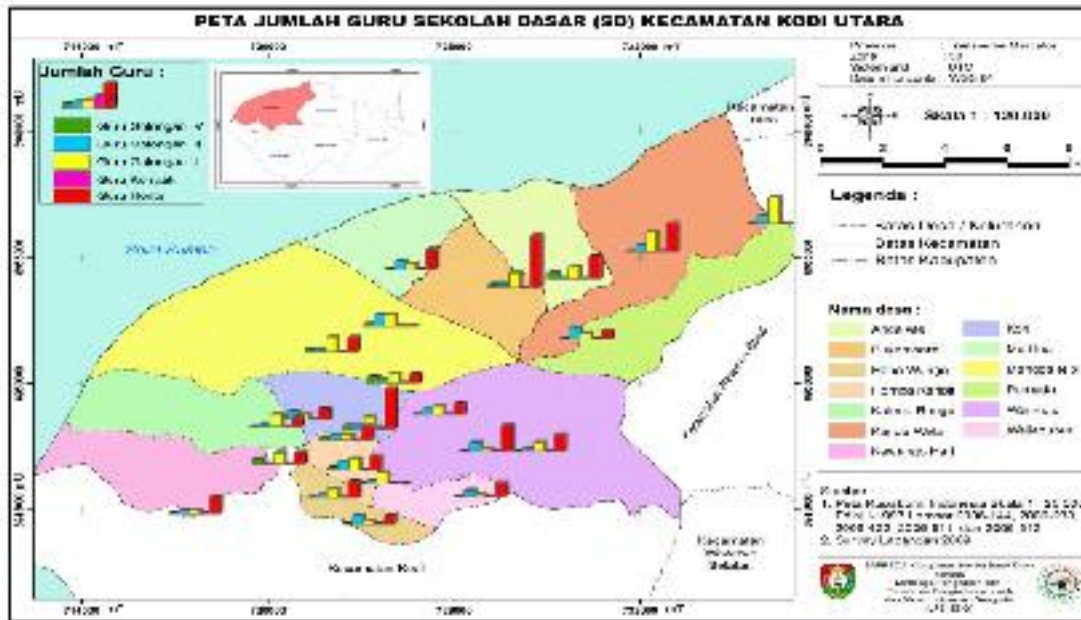


Figure 7. Maps of number and rank of teachers in Junior High School in North Kodi Sub-district

E. CONCLUSION

1. The construction of education database in South West Sumba District was performed with seven maps which include maps of sub-district administration, road network, number of schools at all levels, number of teachers, teachers' academic qualifications, number of learning groups, number of passing students, and the condition of school facilities and infrastructures. As a result, 88 thematic maps have been made from the seven maps.
2. The school map made uses dot symbols to display the location of the school on the map while the supporting information such as the school's profile and others is stored in the form of tabular data with digital spatial database.

F. ACKNOWLEDGEMENT

Acknowledgement shall go to the District Government of South West Sumba for the financial support, which enables the study to be well completed.

G. REFERENCES

- Dulbahri, "Geographic Information System", Puspics Faculty of Geography, Gadjah Mada University, Yogyakarta, 1996.
- Prahasta Eddy, "Basic Concepts Geographic Information System, Informatika Publisher, Bandung, 2002.
- Qadriathi Dg Bau, "The Use of Quickbird Satellite Imagery and Geographic Information System for Traffic Management in Yogyakarta City", Master Thesis, unpublished, University of Gadjah Mada, Yogyakarta, August 2005.

New Paradigm of Research on Islamic Law: Learning from *Pesantren* Tradition for Developing the Islamic Legal Studies in the Islamic Higher Education

Musahadi
IAIN Walisongo
moesahadie@yahoo.com

Abstract

The Indonesian Law number 12 of 2012 on Higher Education asserts that *Ma'had Aly* (the higher Islamic boarding school) is one of religious education institutions. This institution has not been well-known among educational researchers, not only because it is still new, but also it exists only in some *Pesantrens* (Islamic boarding school). The *Ma'had Aly* is usually operated traditionally, both in its institution and scientific structure. The institution is considered to have not adequate space to open dialogue related to the social change. However, there is an interesting phenomenon in the *Ma'had Aly* Salafiyah Syafi'iyah Situbondo, East Java that can become an exception of such assumption. Although, from its name the institution can be categorized as a traditional Islamic boarding school which is affiliated to as-Syafi'i's school, however, it develops a progressive model of research on Islamic law. Through observation, in-depth interview and documentation to the institution, this research shows that the institution which focusing on *fiqh* (Islamic legal studies) has placed its position as a trend setter of researches on Islamic law in term of *Pesantrens* world. Its main ideas even may serve a reference in developing Islamic legal studies in the higher Islamic education, particularly Islamic law faculties in Indonesia. The model of Islamic legal studies that is developed in educational institutions such as the higher Islamic boarding school or the higher Islamic education will influence the trends of epistemology and practical thoughts of its alumni. The alumni, who will be the *Kyai* (Islamic priests) or Islamic experts, give religious services and implementing Islamic law in daily life. They become references for muslim society in understanding Islamic law related to their daily life (*al-fiqh al-yaumiy*). They will also become the agents that influence the worldview of muslim society on Islamic law, and give enlightenments for them in implementing the Islamic law and make the Islamic law as the living law that will be an alternative of sub system contributing to develop the system of national law. In addition, inclusive paradigm in Islamic legal studies will produce inclusive generation.

On the contrary, radical and intolerant paradigm that is developed by an educational institution of Islamic law will create intolerant generation. In this light this study will show its urgents.

Keywords: Epistemology, Paradigm of research, Islamic Legal Studies, *Ma'had Aly*, Islamic Higher Education

Introduction

Research is one of the important instruments for developing science which makes possible to interrelate scientific theory and empirical reality dialectically. As the result, it may generate an approval or refusal of old-established scientific theory, a development of a particular scientific theory or even an invention in a new scientific theory. By doing research, in the context of the development of Islamic legal studies, scientific theories and Islamic legal doctrines will be interrelated with recent realities (*al-waqā'i*) to correct established Islamic legal theories and legal doctrines for the benefits of humankind as a fundamental objective of Islamic law.¹

As a scientific activity, research necessarily involves a selection of a certain epistemological choices. In the Islamic legal studies, this selection of an epistemological choice that is developed by an educational institution influences public perception in Islamic law as well as the development of national legal system in the future. Therefore, the study of how an educational institution develops its epistemology in Islamic Legal Studies is significant to develop a research model of Islamic law. It is to increase the choices/alternatives of Islamic legal studies system that are relevant to the public needs. Researching Islamic legal studies in *Pesantren* is always interesting considering *Pesantren* community is known for its uniqueness in assessing Islamic law. *Pesantren* is often regarded practicing literal understanding of Islamic legal and rarely using the tools of analysis that is provided by the *usul al-fiqh* or Islamic legal philosophy. *Pesantren* is also believed to be heavily dependent on *turats* and ignoring social reality. However, it does not mean *Pesantren* has only one and only approach model. Within the powerful conservative epistemology which is established in *Pesantren*, many efforts have been conducted to reinterpret the established models of Islamic legal studies, although it never be a mainstream. This paper is

¹Al-Syaṭībī believes that none of God's law that has no purpose. God's purpose in establishing the law described as *maqasidas-Shari'ah* or *maqashidas-syar'iyyah fi as-shari'ah* or also *maqasid min shari'ah 'al-hukm* (Al-Syaṭībī, tt., Juzl: 21, 23; Juzl, p. 374). Al-Syaṭībī (tt., Juzl: 6) states: "The fact of sharia is derived to realize God's purpose in establishing the human benefit both in religion and worldly life" (*hāzihias-syari'ah.....wudi'at litahqiq maqasidas-shari'ah 'qiyāmimaṣālihihim fi ad-din wadunyama'an*). In addition, Al-Syaṭībī (tt., Juzl: 54) states "the (Islamic) laws is for the benefit of human" (*al-ahkam limasyrūhamaṣālihal-'ibad*).

trying to expose how *Ma'had Aly Salafiyah Syafi'iyah Situbondo*², East Java, formulate new paradigm of research of Islamic law that seems to be very inspiring and can be seen as an alternative model in developing Islamic legal studies in the Islamic Higher Education.

Research Method

This research is aimed to answer two questions. First, how the research on Islamic law have been developed in *Ma'had Aly*. Second, how it can be adopted in developing research on Islamic law in Islamic Higher Education especially in Syari'ah Faculty.

The *Ma'had Aly Salafiyah Syafi'iyah Situbondo* was selected as the locus of the research due to the fact that the *Ma'had* has an open and phenomenal study on Islamic legal studies, even posing itself as different from the mainstream. The collection of data in this research was conducted through four methods. First, the studies on the written documents. Second, observation on the ongoing academic activities in *Ma'had Aly*. Third, interviews with some outstanding figures of *Ma'had Aly*. Fourth, simple questionnaire for check and recheck purpose. The analysis was undertaken by descriptive technique in qualitative method.

Doctrinal Islamic Legal Research: Finding Law for *in-Concreto's Lawsuit*³

In the *mainstream* of textual-oriented of Islamic legal studies in *Pesantren*, *Ma'had Aly Salafiyah Syafi'iyah Situbondo* can be seen as "deviant". Their interpretation of Islamic law—as the products of Islamic legal studies is appear—shows a different face from the *mainstream* of Islamic legal studies and seems to be more progressive. In sociological criteria—to distinguish from the theological criteria—they put themselves as "*kelompoksempalan*" [the splinter group]⁴ that showed opposition to the mainstream's patterns in the Islamic legal studies in *Pesantren*.

In the making of legal conclusion, *Ma'had Aly Situbondo* applies its own standard procedures. The procedure makes their reasoning become systematic. The standard procedure is packed in a three steps, namely *fiqh al-waqi'*, *fiqhan-nuṣūṣ*, and *fiqh at-tanzil*.

For the example of how the procedure works can be seen in their discussion of the case of female circumcision.

In the first step or *fiqhal-waqi'* on women circumcision are about the process and implications, either positive or negative. It only can be explained by doctor. Having done the first step and obtain a complete opinion of the issue, the next step is *fiqhan-nuṣūṣ* to

²*Ma'had Aly* is officially named *Al-Ma'had Aly Lil Ulumal-Islamiyah Qismal-Fiqh*, founded by KH. As'ad Syamsul Arifin on February 21st, 1990 at Sukorejo Situbondo East Java as a pilot project of "regeneration of Islamic jurists".

³The data and analysis in this paper is developed from the research entitled "*the Dynamic of Islamic Legal Studies in Pesantren (Liberal Elementon Study of Fiqh in Ma'had Aly Salafiyah Syafi'iyah Sukorejo Situbondo)*", see Musahadi (2012: 286-307).

⁴The term of "*kelompoksempalan*", first allegedly used by Abdurrahman Wahid as a substitute for the word "splinter group" as a term that has no religious connotation although it is used for a small group that broke away (*menyempal*) from the party or social and political organization. For "the splinter group" in religious terminology usually use term "*sekte*" (sect). See Martin van Bruinessen (1992: 16-27).

understanding the religious texts (Qur'an and Sunnah) that are relevant for the issue. The final step is *fiqh at-tanzil* which is a way of interrelating religious texts with female circumcision to finding *masalah*.

The method of procedures of Islamic legal studies is similar with tradition of doctrinal legal research that is finding the law for *in-concreto's cases* described as clinical legal studies. This kind of doctrinal legal research is trying to make a description of the actual problem and discovering a solution after take critical "consultation" from a set of common norms of positive law.

The procedure of "search" and "research" in this study are: first, searching for the relevant facts of lawsuits as minor premise. Second, searching for the relevant abstract legal prescriptions in the positive law as major premise. And third, finding *in concreto's law* as a conclusion through syllogism procedures (Sunggono, 1997:94-95).

The first step, searching for the relevant facts in doctrinal legal research to finding law for *in-concreto's lawsuit* is parallel with *fiqh al-waqi'* in the Islamic legal studies in *Ma'had Aly*. The second step, searching for the relevant abstract legal prescriptions in the term of *Ma'had Aly* called as *fiqh al-nusus*. And the last step, finding *in-concreto's lawsuit*, *Ma'had Aly* called as *fiqh al-tanzil*.

Those procedures are clearly legible in their Islamic legal products published in *Tanwirul Afkar* bulletin. For example, it can be argued here on a legal opinion regarding the pig enzyme on article entitled "*Enzim Babi untuk Penyedap Makanan*" [Pig Enzyme for Food Seasoning]⁵ in the book *Fiqh Realitas* (Abu Yasid, ed., 2005: 181-188). The article is a response to the controversial legal issues faced by Indonesian people under President Gus Dur in the late of 2000.

The controversy triggered by mass media report about PT. Ajinomoto Indonesia whose products contain pig enzyme. On December 19, 2000, Majelis Ulama Indonesia [Indonesian Ulama Council] stated Ajinomoto's product was unlawful (*haram*). On the contrary, *Ma'had Aly* had different analytical Islamic jurisprudence and concluded seasoning that contain pig enzymes was lawful (*halal*).

The first step is *fiqh al-waqi'* (searching for the relevant facts). *Ma'had Aly*, in this case, researched about the process of making Ajinomoto's *vetsinto* get complete and comprehensive study. *Ma'had Aly* had realized that this step could not be done by *fuqaha* (Islamic law authorities). The knowledge requires the involvement of experts in the fields of study such as bio-chemistry and bio technology experts (Yasid, 2005:182).

The process of *fiqh al-waqi'* got a conclusion that the spice was made from the raw molasses material and tapioca. The calcium of raw molasses is processed chemically through "decalcification" to producing TCM (Treated Cane Molasses). Meanwhile, tapioca is taken

⁵This article published in *Tanwirul Ahkam Bulletin*, Edition 123rd/4th of Friday/January, 26th 2001 which was originally titled "*Ajinomoto Tidak Sedap Lagi?*" [Ajinomoto is not tasty anymore?]

through the process of *saccharification* to producing glucose, which is then combined with TCM, and other compounds are saline substance, vitamins, ammonia (NH₃), sulfuric acid and caustic soda. Then, all materials entered in the fermentation process which produces “broth”. After the process of isolation and purification process, the MSG (Monosodium Glutamate) is delivered.

The fermentation process needs bacteria (*brevibacteriu, lactofermentum*) called microbe that should be kept in active condition—so these microbes must be regenerated. Microbes grown on gelatin containing peptone derived from the breakdown of protein (such as from peanut, soybean, and so on). Ajinomoto uses soybean protein called *soypepton*. For the breakdown process uses *catalyst*⁶ (a substance that serves to speed up chemical processes but did not participate in the final product). And the catalyst that used is *bactosoytne* containing *porcyne*. That is, the mixture of enzymes derived from pancreatic pig extracts, plant extracts and other enzymes. The advantages of *bactocoytine* are microbes will be more durable and economically cheaper. In one gram can produce 50 tons of MSG. It is clear that the debate lies on *bactocoytine* that used as catalysts containing pig enzyme (Yasid, 2005:182-183).

After *fiqh al-waqi'* is completely done, it needs to be answered, what the using of catalyst as described will lead to impurity of production (MSG or Ajinomoto's vetsin)? For that, the next step is *fiqh al-nusus* (searching for the relevant abstract legal prescriptions) to explore the normative provisions or fiqh texts relating to the issue. First, they refer to Surah al-Baqarah 173: “He (Allah) has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah”.

They concluded that the verse as normative base on the explicit prohibition of eating carrion, blood, pork and animals slaughtered without mentioning the name of Allah. In the eyes of ulama, the term of “*lahm*” (pork) is multi interpretation. The majority of them argue that “*lahm*” covers all parts of the pig's body (flesh, bone, fat, blood and so on). That word (“*lahm*”) is to show that the most widely consumed is pork. Unlike the majority of ulama, Imam Daud ad-Dhahiri stated that the unlawful thing is pork, while other parts, such as lard is not unlawful.

The second base of the unlawful of pig enzyme is Al-An'am 145: “Say, In what was revealed to me, I find nothing forbidden to a consumer who eats it, except carrion, or spilled blood, or the flesh of swine—because it is impure—or a sinful offering dedicated to other than God. But if someone is compelled by necessity, without being deliberate or malicious—your Lord is Forgiving and Merciful.”

In order to interpreting the verse, *Ma'had Aly* make referred to the opinion of Imam Fakhr al-Din al-Razi (1990, XIII: 180), that God forbid pork because of its excrement (*najis*). It

⁶See AbuYasid, ed., 2005:233.

shows that the excrement (*najis*) is *illat* for the unlawful for pig. That is why all excrements are prohibited to eat—because of gross and abhorrent. Surah Al-An'am 145 is also confirmed by Surah Al-A'raf 157: ...*who enjoins upon them what is right and forbids them what is wrong and makes lawful for them the good things and prohibits for them the evil and relieves them of their burden and the shackles which were upon them*".

Based on two verses above, *Ma'hadAly* concluded that all parts of the pig are *najis*, including *porcine* that serves as a catalyst in the process of change vetsin's Ajinomoto. The building of logics, so far, seems to support that vetsin's Ajinomoto is forbidden. But do not rush to conclusion first.

Ma'hadAly apparently creates another criticism by presenting other analysis. They state that something exposed excrement called as *mutanajis*, not *najis*. It still could be purified to be "lawful". Therefore, in the process of producing Ajinomoto's vetsinis indeed containing "contemporary" *mutanajis*, but it can be purified—although next problem arises: by what? To answer this problem, *Ma'hadAly* explores multi-statements from various ulama. According to Imam Syafi'i, there are four ways to purify *mutanajis*, namely water, dust, *dibagh* (the tanning process) and *takhallul* (vinegar-making process).⁷

Imam Ahmad ibn Hanbal agreed with Imam Shafi'i, except in *dibagh*. Imam Malik and Imam Abu Hanifah have different opinion. According to Imam Malik and Imam Abu Haneefah, *al-muṭahhirat* (tool and method to purify) are manifold. Not just limited to the four mentioned by Imam Shafi'i, but it also could be *al-Dalk* (polish), *al-fark* (scrape), sun-dried and so on.⁸

Related to this debate, *Ma'hadAly* is more agreed with Imam Abu Hanifa and Imam Malik opinions. They judge that these opinions are more relevant and productive in the recent time. There are so many things that cannot be washed with water, moreover with the dust. Goods such as silk, velvet coat or similar, would be damaged if washed with water—because of that, chemical process is more secure and needed.

Through the last logics, *Ma'hadAly* go on to *fiqh al-tanzil*. According to them, the chemical process in Ajinomoto's vetsinis the way to purify the microbes. Those active microbes are indeed *mutanajis* because it was developed by *bactosoytne* containing pig enzyme. But, in the certain moment, the *bactosoytne* will get loose from microbes because it was just a catalyst. Having released pig enzyme from microbe, the microbe is purified and *halal* for consumption (Yasid, ed., 2005:186-186).

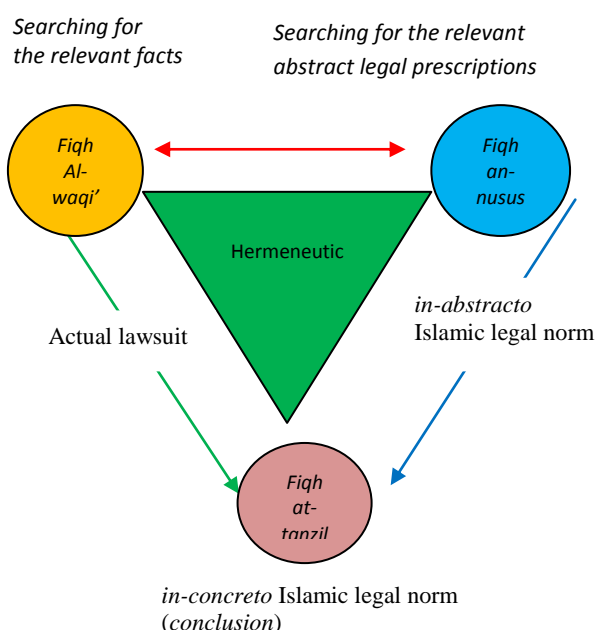
⁷*Takhallul* derived from the word "*khallun*" meaning vinegar. Thereby, the meaning of *takhallul* is a natural chemical process to produce vinegar from *legen* [unfermented toddy] or other. *Legen*, although the first condition is lawful, but if it is left for several days would be *khamr*—as unlawful thing—because of intoxication. But, in the next few days, through a chemical process as well, the *khamr* will turn into vinegar. The vinegar is not intoxicating so the lawful for consumption—if the process is natural and no catalyst.

⁸Islamic scholar's debate on this topic can be seen in al-Zuhaily, 1989, I:92-113.

The unique of Islamic legal studies in *Ma'had Aly* is the use of legal maxims (*al-qawa'id al-fiqhiyyah*) in making legal conclusion. In the case of pig enzyme, they raised questions to be answered by *qawa'id al-fiqhiyyah*. So, would we convince that pig enzyme can be lost through chemical process for 100 percent?

In solving the problem, they use *al-qaidah al-fiqhiyyah*: "when the doubt faced with the common sense, the common sense must be guided".⁹ For example, if someone finds the slaughtered animal in the Muslim-majority region, and he doubts that the slaughter is a Muslim or not, referring to the *al-qaidah*: that person permitted to eat based on common sense or prevalence—the slaughter generally would be a Muslim. In accordance to that rule, *Ma'had Aly* reaffirm that the release of pig enzyme occurs in the chemical process. Moreover the process makes the pig enzyme would not be carried away in the final process (Abu Yazid, ed., 2005:187-188).

The method of Islamic legal research that was developed by *Ma'had Aly* can be drawn as below:



Critical Reflection for Developing Islamic Legal Studies in Islamic Higher Education

There are some interesting notes in the illustration of the procedure for determining legal conclusion of pig enzyme above. First, *Ma'had Aly* realizes that Islamic jurist (*fuqaha*) have limited-skill related to the chemical case like a process of producing cooking spices. They open opportunity for involving other authorities who are experts in the field of the problem being addressed, especially in the *fiqh al-waqi'*.

⁹*Ma'had Aly* referred this principle and examples from al-Suyuti (1995:77), Ibn Hazm (tt., II: 137) and Ibn Umar (tt.: 17).

The *Ma'had Aly's* opinion is in line with the thought of Muhammad Iqbal on *ijtihad*. According to Iqbal, the complexity of modern life requires the implementation of *ijtihad jama'iy*, where *ulama* authority is not absolute because of their restrictiveness. He asserted that other experts are needed based on their competence although they have no competence in Islamic law (Iqbal, 1981: 174).

Thereby, in looking for problem solving of Islamic law, someone cannot simply look at normative rules, but he or she needs to consider of "non-juridical dimension" (non-*syar'i*) need since it presents more comprehensive legal conclusion, avoids miss-leading, and fair.

Second, *Ma'had Aly* create a progressive paradigm. In this case, *Ma'had Aly* leave *Pesantren* style and even common *Nahdlatul Ulama's* views in the Islamic legal research. As can be seen from the case of pig enzyme, in the phase of *fiqhan-nuṣūṣ*, *Ma'had Aly* Situbondo referred directly to the Qur'an. In the tradition of *Bahtsul Masail NU* (BMNU), reference (*ma'khaḥ*) is usually taken from only standard books of *fiqh* (*al-mu'tabarah*), and does not directly refer to the Quran and Al-Hadith. Unlike the prevailing tradition, *Ma'had Aly* referred directly to the Qur'an¹⁰ and subsequently the books of *fiqh*. In this way, *Ma'had Aly* is actually more explorative to capture the values of a substantive value in the primary source of Islamic law, that is, al-Qur'an. They can freely operate the theories of Islamic jurisprudence that have learned: operating *qiyas*, searching for *ratio-legis* (*illathukm*) through *ta'lil* method without being restricted by established opinions of *ulama* in *fiqh al-mu'tabarah*.

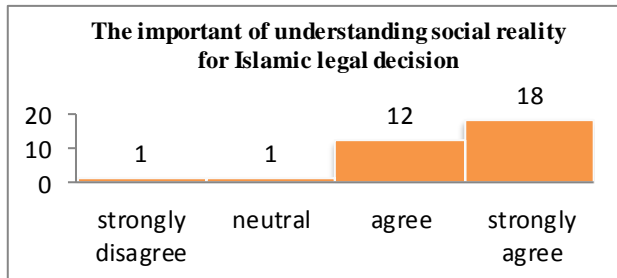
Third, *Ma'had Aly* can go further beyond Shafi'i school. In *fiqh al-nuṣūṣ*, *Ma'had Aly* explored various schools for the references of legal opinions related to pig enzyme. They narrated opinions of the four Imam's schools, from the opinion of Imam Shafi'i and Imam Ahmad, and then, opinion of Imam Abu Hanifa and Imam Malik.

However, surprisingly, when it comes to selecting of varied references of *fiqh* about the tools and methods for cleansing excrement goods (*mutanajis*) they selected the opinions of Imam Abu Hanifa and Imam Malik that are considered to be more productive and relevant to the context of modern life and more benefit.

The logical reasoning of *fiqh* of *Ma'had Aly* Situbondo, as already explained, is putting the understanding of the social reality in an important position in the constructing legal conclusions. It is relevant with the results of research to 32 *mahasantri* (students) of *Ma'had Aly* Situbondo. When asked to give a comment on the statement that "the truth (validity) formulation of Islamic law is not just determined by the ability of scholars to understand legal norms, but also determined by their ability to understand social reality",

¹⁰In NU's intellectual tradition, *istinbatal-hukm* that directly from primary sources (the Qur'an and Al-Hadith) is a "taboo". For NU, the activities entered the domain of *ijtihad mutlaq*, while they aware no qualification to be *mujtahid mutlaq*. In the long time, NU only takes *ijtihad* in *mazhab* [school of thought]. In addition to more practical, the model of *ijtihad* can be done by the large of Islamic scholars under NU (Mahfudh, 1994:27).

they replied as shown in the figure of “the important of understanding social reality for Islamic legal decision”.



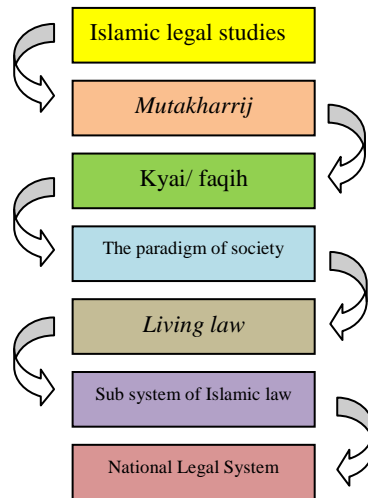
This survey showed 18 (56%) of respondents stated strongly agree, 12 (38%) respondents agreed, 1 (3%) of respondents stated neutral, and only 1 (3%) of respondents stated strongly disagree. The results of this survey showed that the source of knowledge in the Islamic legal studies is not only normative texts, but also social reality. In the Islamic history, the jurists have always noticed social aspect in developing *istinbāṭ al-hukmas* a way to implementing the essence of Islam, especially *maslahah*.

The choice of epistemology of Islamic legal studies developed by *Ma'had Aly* is based on awareness of how the method or epistemology has significant role to create public perception on Islamic legal studies, and even to develop national law system in the coming days. *Kyai Hasan Basri* stated that *fiqh* studies that have been developed by institution have a strategic significance in shaping public perception of Islamic law. It is why the process of selection of paradigm should be done carefully and seriously and meets the public needs.

The paradigm developed by *Ma'had Aly* will affect the *mutakharrij* (alumni) performance, both in practicing *fiqh* and epistemology. Those *mutakharrij* are candidates of cleric who will serve public in religious serving, including the implementation of *fiqh* in everyday life (*al-fiqh al-yaumiyyah*).

Hence, *mutakharrij* eventually are agents that affect public perception about Islamic law. It encourages them to choose method of critical Islamic legal studies in order to give legal solution for public. They are expected to become critical agents who capable to give “enlightenment” in *fiqh* practice, and make *fiqh* as living law to be an alternative sub-system for the national legal system.

Interconnected between Fiqh research system and National Law System



The graph above shows that the Islamic legal studies that have been developed in *Ma'had Aly Situbondo* will affect the paradigm of alumni (*mutakharrij*), who are the *Kyai* in the future. In the context of paternalistic society, a *Kyai* would be a leader for religious practice whose *fatwas* (legal opinions) will create public paradigm on Islamic law. Then, the paradigm of society builds *fiqhas* living law which may serve as a potential material for the national legal system. As Indonesia is a country where Muslims are the vast majority, the national legal system at least will be influenced by the paradigm in the Islamic legal studies.

The Choice of Epistemology for Developing Islamic Legal Studies in Islamic Higher Education

One of the basic points of the Islamic legal studies in *Ma'had Aly* is the concept of interrelating between religious text and social reality. According to *Kyai Afifuddin* (Assistant Director of *Ma'had Aly Situbondo*), in understanding and making of legal conclusions, the text cannot be separated from its context, the reality. It should be a dialogue between the text and reality (*jadaliyyahal-nasma'a al-waqi'*). That is why, in making of legal conclusion a comprehensive understanding of the historical context of the verse (*ma'rifat al-sabāb an-nuzul*), the historical context of the *hadith* (*ma'rifat al-sabābal-wurūd*) and the present context (*ma'rifat al-sabāb al-durūf*) is required. After that process, the conclusion was formulated to understand the social reality (*tanzil al-Ahkamma'a al-waqi'*). The best sample

for that was what was done by Umar ibn al-Khattab in the problem of zakat for *muallaf* (interview with KH. AfifuddinMuhajir, April 6th2010).

The interpretation of reality (*al-waqi'*) actually requires special skill that might not be owned by *fuqaha'*. At the level of exploring the legal reasoning (*takhrij al-manat*), the Islamic jurists are indeed the most authoritative. But at the level of *tahqiq al-manat*, it requires other experts who have skill in understanding the social reality comprehensively. The law of cigarette, for example, based on *ijtihad jama'i*, that the smoking is *makruh* because of using the wealth for useless things (*sarf al-mal ila ma gaira al-nafi'*).

However, the problem is not simple. The interpretation of "smoking reality" requires experts outside *fuqaha'*. It is because smoking related to health care therefore it requires a medical experts to analyzing the impact of smoking on human health (*al-waqi'*). Likewise, because smoking related to the large corporations involving millions of people in the industry, so the analyzing *al-waqi'* requires economists and so on (interview with KH. AfifuddinMuhajir, April 6th2010).

In the context of the development of Islamic legal studies in Islamic Higher Education, the principles above are essential. A multidisciplinary approach is certainly very possible in university considering its greater resources than *Pesantren*. Moreover, university has a constitutional mandate to develop sciences in all disciplines. It means that the research traditions of Islamic legal studies can be developed through a multidisciplinary approach.

Anas Saidi, a researcher at LIPI who gives teaching several times in social research at *Ma'had Aly Situbondo*, states that for the long time the paradigm of Islamic legal studies in *Pesantren* and university is the paradigm of "judge and legitimate reality". So often *Fiqh* does not give any solutions for the social problems. In the view of Anas Saidi (interview, April 5th2010), the Islamic legal studies should not only lead to provide legal status of reality, but also to find a way out for the unfair reality. For the keenness, in the Islamic legal studies traditions, the use of social theories is inevitable.

The Islamic legal studies, in this regard, should contribute to the search for answers of the question: *how to change?* That is, how to change the reality from injustice to justice, from *mafsad* to *maslahat*. At this point, the development of critical law schools is significant to offer critical-epistemological orientation in understanding the reality comprehensively.

In social sciences, the difference of epistemological basis influences the paradigm of social reality. In this case, Emile Durkheim considered as the prominent thinker to develop positivistic epistemology, while humanistic epistemology was developed by Max Weber. In the positivistic paradigm, the base of research is quantitative approach that regards social science as the same as natural science, because of quantified, empirical, causality, predictable, and objective. Therefore, the method of quantitative research is adapted from

the method of natural science, especially in the use of mathematical or statistical analysis. Its orientation is just to know (how to know) about the reality of it.¹¹

For humanistic epistemological paradigm thinkers (interpretive)—who take qualitative method as the main base of research—the nature of objective social reality is actually a reality that has been shaped by the subjective interests. The main task of scientist is to understand the subjectivity of behavior in constructing social reality. Since the behavior is not always regular, not repeatedly, it cannot be predicted and cannot be measured as well as not always has deterministic causality. The method of “*verstehen*” or “understanding” is the key in obtaining knowledge in the social sciences.

Paradigm of science	Positivism	Interpretive	Critical Social Science
<i>Figure</i>	Emile Durkheim	Max Weber	Karl Marx
<i>The view of reality</i>	Objective	Subjective	Subjective
<i>Research paradigm</i>	Quantitative	Qualitative	Participatory Action Research
<i>Orientation</i>	How to know	How to know	How to change
<i>Question sample</i>	How about the consumption for poor society?	How can the poverty be removed?	How to change the poverty to prosperity?

In other words, the natural science methods that have principles of generalization, law of causality, and predictable cannot be duplicated in the social sciences due to the nature of two object—natural and human—is different. Although differ in understanding of social reality, both have the same orientation: “how to know”. To understand poverty, for example, the positivism paradigm only wants to know about how the consumption of the poor and the interpretive paradigm likes to know more about why poverty is difficult to be removed.

Unlike two paradigms above, the critical social science paradigm that was driven by Karl Marx, states that the study of social reality is to be oriented on how to change the unequal

¹¹The critics for positivism paradigm can be found in Ritzer and Goodman (2005:177-178).

and unfair into equal and fair condition. The concern of the study is changing poverty to prosperity.

In the development of Islamic legal studies in Islamic Higher Education, the above paradigm is relevant. The study is not only oriented to understand the reality of law in society, but also to change the reality: from unfair to fair, from *mafsadat* to *maslahah*. In this way, the Islamic legal studies can be seen as an instrument of advocacy for the oppressed society. In summary the science of Islamic law is not merely a theoretical discourse, but an instrument of empowerment.

Conclusion

Based on the empirical evidences of this research, it can be concluded that the Islamic legal studies developed by *Ma'had Aly* shows a paradigm shift. In the case of pig enzyme of Ajinomoto, it can be affirmed that *Ma'had Aly* Situbondo applied clinical legal research through three stages, namely *fiqhal-waqi'*, *fiqhan-nusus*, and *fiqhal-tanzil*. The characteristics of the new paradigm are: First, in the Islamic legal decision *Ma'had Aly* recognize the limitation of *fuqaha*, therefore, it needs the involvement of other authorities who are experts in the field of the problem being addressed, especially at *fiqhal-waqi'*. Second, *Ma'had Aly* go beyond the mainstream paradigm of *Pesantren* in determining Islamic legal decision. *Ma'had Aly* refer directly to the Qur'an, and subsequently refer to the books of *fiqh*. It means that they regarded the books of *fiqh* as secondary resources. Third, they are not fanatic to Syafi'i school. Fourth, the understanding of the social reality is a significant instrument in undertaking procedure of legal decision.

By considering paradigm and method of legal conclusion of *Ma'had Aly* on the case of pig enzyme, for example, the study of Islamic legal studies can be developed collaboratively with the discipline of nutrition or chemistry. Islamic Higher Education can offer a new study program that combines technology and *syari'ah* as has been developed by some universities in Malaysia.

REFERENCES

- Abd al-Rahman Ibn Muhammad Ibn Husein Ibn Umar, *Bugyat al-Mustarsyidīn*, Semarang: Thoha Putera, "the year of published was be known".
- Abu Ishaq Ibrahim ibn Musa Al-Syathibi, *Al-Muwāfaqat fi Uṣūl as-Syarī'ah*, diedit oleh Abdullah Daraz, Beirut: Dar al-Ma'rifat, "the year of published was be known".
- Abu Muhammad Ali Ibn Hazm, *Al-Muḥalla bi al-Aṣār*, Juz XII, diedit oleh Abdul Ghaffar Sulaiman al-Bandari, Beirut: Dar al-Fikr, "the year of published was be known".

- Abu Yasid (ed.), *Fiqh Realitas: Respon Ma'had Aly terhadap Wacana Hukum Islam Kontemporer*, Yogyakarta: Pustaka Pelajar, 2005.
- Bambang Sunggono, *Metodologi Penelitian Hukum*, Jakarta: PT. Raja Grafindo Persada, 1997.
- Bulletin Tanwirul Ahkam Edisi 123/ Jum'at ke-4/ 26 Januari 2001
- Fakhr al-Din Muhammad ibn Umar ibn al-Husain ibn al-Hasan Al-Razy, *al-Tafsir al-Kabir*, Beirut: Dar al-Kutub al-Ilmiyyah, 1990.
- George Ritzer and Douglas J. Goodman, *Teori Sosiologi Modern*, Jakarta: Prenada Media, 2005.
- Jalal al-Din Abd al-Rahman Abu Bakr Al-Suyuthy, *Al-Asybah wa Naqā'ir*, Beirut: Dar al-Fikr, 1995.
- Law No. 12/2012 on Higher Education
- Martin van Bruinessen, *Gerakan Sempalan di Kalangan Ummat Islam Indonesia: latar Belakang Sosial Budaya*, dalam *Ulumul Qur'an* vol. III no. 1, 1992.
- Muhammad Iqbal, *The Reconstruction of Religious Thought In Islam*, Kitab Bavan, New Delhi, 1981.
- Musahadi, *Dinamika Kajian Hukum Islam di Pesantren (Studi tentang Elemen Liberal dalam Kajian Fiqih di Ma'had Aly Salafiyah Syafi'iyah Sukorejo Situbondo)*, Semarang, IAIN Walisongo, unpublished, 2012,
- Sahal Mahfudh, *Nuansa Fiqih Sosial*, Cet. IV, Yogyakarta: LKIS, 2004.
- Wahbah Al-Zuhaili, *al-Fiqh al-Islami wa Adillatuh*, Beirut: Dar al-Fikr, 1989.

THE DYNAMICS OF QUR'ANIC EXEGESIS IN SURAKARTA: 1900-1930

Akhmad Arif Junaidi

Lecturer at Islamic Law Faculty of IAIN Walisongo

arif_junaidi2003@yahoo.com

Abstract

This research focuses on the dynamics of Qur'anic exegesis in Surakarta in 1900-1930. The dynamics was marked by the emergence of three books of Qur'anic exegesis, i.e. *Tafsīr al-Qur'ān al-'Aẓīm* written by Raden Pengulu Tafsir Anom Vin 1910, *Tafsīr Surat Wal Aṣri* written by Siti Chayati in 1924 and *Tafsīr Qur'an Djawen* written by Dara Masyitah. The research questions are: how did the dynamics of Qur'anic exegesis emerge in Surakarta in the time, and what factors did influence the dynamics. This research results in two main findings: the first, the dynamics of Qur'anic exegesis were marked by the various concerns of three books. *Tafsīr al-Qur'ān al-'Aẓīm* by Raden Pengulu Tafsir Anom Vhas concern on tensions of Islamic trends in Islam. It much more stresses in the urgent of Islamic orthodoxy. *Tafsīr Surat Wal Aṣri* by Siti Chayati has concern on the dynamics of Moslem-Christian relationship. It criticizes the Christian denying the Islamic teachings. *Tafsīr Qur'an Djawen* by Dara Masyitah has concern on the friction among Moslems in Indonesia. It criticizes the intensifying debate of Indonesian Moslems on local religious practices. The second, the dynamics were influenced by the conducive policies of the ruling king, Sunan Pakubuwono X. The conducive policies of the king had stimulated the dynamics of Qur'anic exegesis in the period.

Introduction

In the tradition of Islamic thought, interpreting Qur'an in order to understand the God's message is often understood as a never ending work.¹² The task must always be done, whenever and wherever, based on the contemporary social settings. The Qur'an must always be interpreted to become a theological foundation for any solution to the actual problems in society.

The point of view successfully raises a series of Qur'anic interpretation in vast and awesome derivative texts. By positioning Qur'an as the first text, the derivative texts become the second texts explaining the particular meanings contained therein. The second text is then acknowledged as the Qur'anic interpretation literature (*tafseer*) written by scholars with the various trends and characteristics in a multi-voluminous books of *tafseer*.¹³

Compared to other religions' scriptures, indeed it is a unique phenomenon. Since the *tafseer* as the second text, as can be seen in the realm of Islamic literature, is not only consisted of huge numbers, but also very rich in the styles, methods and approaches.¹⁴ In the Islamic literature treasury, we can find voluminous well-known books of *tafseer* such as *ad-Durr al-Mansur fi at-Tafsir bi al-Ma'sūr* by Jalal ad-Dīn as-Suyūṭy (849-911 H), *Jāmi 'al-Bayan' an ta'wil Ayatul Qur'an* by Abū Ja'far Muḥammad ibn Jarīr at-Tābary (224-310 H), *Tafsir al-Qur'ān al-Aẓīm* by 'Imād ad-Dīn Abū al-Fidā' al-Quraysy ad-Dimasyqi ibn Kašīr (700-774 H), *Rūḥal-Ma'ānī fīTafsir al-Qur'ān al-Aẓīm wa as-Sab'u al-Mašānī* as the work of al-Alūsī, *al-Kasysyāf 'an Ḥaqāiq at-Tanzīl wa Uyūn al-Aqāwīl fī Wujūh at-Ta'wīl* as the work of Abū al-Qāsim ibn Muḥammad az-Zamakhshary (476-538 H), *al-Jawāhir fī Tafsir al-Qur'ān al-Karīm* by Ṭanṭāwi Jauhary (w. 876 H), *Aḥkām al-Qur'ān* by Abū Bakr al-Jašāš (w. 981 H), *al-Jāmi' li Aḥkām al-Qur'ān* by Abū 'Abd Allāh al-Qurṭuby (w. 1272) and so on.

As the derivative texts containing the dimensions of locality, the works of Qur'anic exegesis had not only been written by authors who come from 'great tradition' areas such as the Middle Eastern countries where Islam was born and thrive first time. The works of

¹²Setiawan, M. Nur Kholis, *Al-Qur'ān Kitab Sastra Terbesar*, Yogyakarta: eLSAQ Press, 2005, pp. 1

¹³Abdullah, M. Amin, "Arah Baru Metode Penelitian Tafsir di Indonesia", Kata Pengantar untuk Islah Gusman, *Khazanah Tafsir Indonesia: Dari Hermeneutika hingga Ideologi*, Jakarta: Teraju, 2003, pp. 17

¹⁴*Ibid*, pp. 17-18

Qur'anic exegesis had also been written by the authors from the 'little tradition' regions in which Indonesian scholars become a part of them.

However, geographically, Indonesia is a Muslim country that is located in the farthest away from the birthplace of Islam in the Middle East country, a place where the Holy Quran was revealed. The geographical factor has been often considered to be a crucial issue and considered responsible, at least in part, for the inhibition of the process of Islamization in the country. On the other hand, Islam came to this country when religion was no longer as superior either in political, economic, military and also cultural sectors, but had generally experienced periods of reflux.¹⁵ The reality influences the dynamics of Islamic intellectual movements. However, the facts show that the intellectual dynamics developing in the island country has produced many awesome and incredible treasures of Qur'anic exegesis. This has been proven by the many works of Qur'anic exegesis written by Indonesian scholars (*mufasseer*).

The *tafseer* writing tradition in Indonesia has actually moved quite a long time and been very rich and diverse in the technical writings, styles and the languages. In this regard, it is interesting to examine the interpretation of the Qur'an manuscripts 15 chapters (*juz*) which was written in Arabic and has recently stored in Demak Great Mosque's museum. Local sources explained that the Qur'anic interpretation manuscript was written by Sunan Bonang, one of the children of Sunan Ampel who was well-known as prolific writer particularly in religious discourse. Based on these local sources, it can be concluded that the tradition of Quranic interpretation writings in Indonesia has emerged since the 15th century AD. While Moch Nur Ichwan explained that the tradition of writing commentaries began to emerge in the 16th century AD, it can be proven by the text of *Tafsir Surah al-Kahfi* (18): 9, the manuscript with unknown author. The commentary manuscript was brought from Aceh to the Netherlands by Erpinus, an Arabic expert from the Netherlands, who died in 1624 AD and recently the manuscript is a part of the Cambridge University Library's collection with the catalog number Li.6.45 MS. The manuscript was allegedly made during the reign of Sultan Iskandar Muda (1607-1636 AD), in which the empire's mufti was Shams ad-Din as-Sumatrani (d. 1630), or might be even earlier, in the Sultan 'Ala' ad-Din al-Sayyid Shah Ri'ayat Mukammil's administration, where the mufti was Hamza al-Fansuri.¹⁶

About a century later, Abd ar-Rauf as-Sinkili (1615-1693 AD) wrote a commentary book entitled *Tarjuman al-Mustafid*. According to Peter Riddel, as referenced by Ichwan, the complete 30 chapters book of *tafseer* is a direct translation of the *Tafsir al-Jalalain* written in

¹⁵Saleh, Fauzan, *Teologi Pembaharuan: Pergeseran Wacana Islam Sunny di Indonesia Abad XX*, Jakarta: Serambi, 2004, pp. 19

¹⁶Ichwan, Moch. Nur, 2002, "Literatur Tafsir Qur'an Melayu-Jawi di Indonesia: Relasi Kuasa, Pergeseran dan Kematian", dalam *Visi Islam* Jurnal Ilmu-ilmu Keislaman, Volume 1, Nomor 1, Januari 2002, pp. 15

the year 1675 AD. In the 19th century AD, another anonymous work of *tafseer* entitled *Kitab Faraid al-Quran* emerged and is recently stored in the Library of Amsterdam University. The manuscript had been written in a very simple form, and seemed more an article review rather than a book of Qur'anic interpretation as it is consisted of two pages only. In the same century, an Indonesian scholar namely *Shaykh Muḥammad al-Nawawi al-Bantani* (1813-1879 AD) wrote a work of 30 chapters complete commentary entitled *Tafsir al-Munir li Ma'ālim at-tanzil*. However, the manuscript using Arabic language was not written in Indonesia, but in Makkah.¹⁷ In the end of the 19th century AD, a new work of *tafseer* emerged which was entitled *Faid ar-Rahman fi Tarjamah Kalam ad-Dayyan* written by KH Muḥammad Salih as-Samarāny, a well-known scholar of Kampung Darat, Semarang, Central Java. Furthermore, in the beginning of the 20th century AD, there was a variety of commentaries written by Indonesian scholars that were presented with a various models, themes and languages.

From the perspective of the authors' academic background, the works of Qur'anic exegesis in the archipelago can be divided into two categories. First, scholarly works of Quranic interpretation written by local scholars who had direct connection with the intellectual dynamicss in the Middle East, such as the works of *Tafsir al-Munir al-Nawawi al-Bantani* and *Tarjuman al-Mustafid* which is the work of Abd ar-Rauf as-Singkili. Second, scholarly works of Quranic interpretation written by local writers who were not in direct contact with the Middle Eastern intellectual dynamicss.

In this case, it can be frequently seen that the studies of Quranic interpretation have mainly conducted based on the books of the Middle East scholars' works, or the works of a local scholars who had direct bearing on the intellectual dynamicss in the Middle Eastern countries. It is definitely still limited studies focusing on the local scholars' works of Quranic interpretation. The situation produces serious impacts to the removal of spaces in the intellectual history describing as if nothing important ever happened in the archipelago's intellectual tradition and history which deserves to record in. Whereas the tracing works of the intellectual history precisely indicate differently. Based on some historical tracing on the works of local Islamic scholars, there is an intense intellectual dynamicss in studies of Qur'anic exegesis. In Surakarta, the region which usually does not get the adequate attention in the discourse of the Qur'anic interpretation for instance, it has been found a book of *tafseer* proving how intensive the local Islamic intellectual dynamicss in the region. Some books which can be mentioned here is the *Koran Winedhar Juz I* which is anonymous, and then *Tafsir Jalalain Basa Jawi* written by Kiai Bagus Ngarfah, a teacher from Madrasah Manbaul Ulum Surakarta who died in 1913 before the writing completed, and then *Tafseer Surat Wal 'Asri*, the masterpiece of Siti Chayati which was introduced by Suparmini, and the

¹⁷Gusmian, *Islah, Khazanah Tafsir Indonesia: Dari Hermeneutika hingga Ideologi*, Jakarta: Teraju, 2003, pp. 53-55

last but not least is *Tafsir Qur'an Djawen* written by Dara Masyitah and *Tafsir al-Qur'an al-Adzim* written by Raden Pengulu Tafsir Anom V.

Without intending to deny other works of Qur'anic interpretations, this paper will only briefly examine three works called the most recent interpretation which are considered to represent the tradition of Quranic interpretation in Surakarta from 1900 to 1930, a span of time which clearly shows the most intense dynamics of Islamic intellectuals in Surakarta. *Tafsir Al-Qur'an al-'Azim* written by Raden Pengulu Tafsir Anom V represents intellectual dynamics in the decade of the 1910s, while *Tafseer Surat Wal Asri* by Siti Chayati introduced by Suparmini represents the intellectual product of the 1920s era and *Tafseer Qur'an Djawen* by Dara Masyitah represents a tradition of interpretation in the 1930s.

Research Methodology

This research is library research with qualitative paradigm. The primary sources of this research are three books of Qur'anic exegesis, i. e. *Tafsir al-Qur'an al-'Azim* written by Raden Pengulu Tafsir Anom Vin 1910, *Tafsir Surat Wal Asri* written by Siti Chayati in 1924 and *Tafsir Qur'an Djawen* written by Dara Masyitah. The technic of collecting data is documentation.

The research methodology used in this research qualitative analysis. This method stresses on understanding the collected data to make categorizations and find the explanation of their pattern. This research also operates the hermeneutics method to find the relation of interpreter, interpretation texts and the surrounding social-religious to understand the interpreter ideology beyond the interpretation. Teun van Dijk, as quoted by Eriyanto, asserts that the discourse analysis sees that the texts does not naturally emerge, but it is result of wrestling ideology.¹⁸

The Dynamics of Qur'anic Exegesis in Surakarta

The development of Islamic thoughts in Surakarta in the beginning of 20th century was colored by the intense dynamics of Qur'anic exegesis. The dynamics of Qur'anic exegesis did not massively emerge in the previous era, at least up to the end of 19th century. The conclusion is also explained by Van Den Berg, as quoted by Martin van Bruinessen, explaining that in the end of 19th century the qur'anic exegesis was not considered yet as the important subject in the *pesantren* or Islamic boarding school's curriculum, including the pesantrens in Surakarta. Because of the impact of Islamic modernism with its slogan "returning to the Qur'an and the prophetic tradition" (*ar-rujū' ilā al-Qur'ān wa as-Sunnah*),

¹⁸Eriyanto, *Analisis wacana: Pengantar Analisis Teks Media*, Yogyakarta: LkiS, 2001, pp. 8

the Qur'anic exegesis has found its urgency. There were many traditional Moslem scholars who feel being obliged to adapt and have a more concern to the Qur'anic exegesis.¹⁹ The development of Islamic modernism had directly influenced the dynamics of Qur'anic exegesis in Surakarta.

The dynamics of Qur'anic exegesis in the Javanese kingdom area (*vorstenlanden*) was marked by the emergence of three books of Qur'anic exegesis written in the different periods and, therefore have also, the different concerns. The first book is *Tafsīr al-Qur'ān al-'Azīm*²⁰ written by Raden Pengulu Tafsir Anom V, an Javanese aristocrat moslem scholar who had a strategic position as great judge in Surakarta Kingdom. This book, although written in the Javanese kingdom milieu that was regarded a center of syncretism tradition, on the contrary shows the tendency of orthodoxy. The tendency of orthodoxy in the ideas of Tafsir Anom can be seen from his interpretations, particularly regarding to the theological interpretations.

In term of the relationship of Allah as creator and human being as creatures, for instance, Tafsir Anom explains that Allah obliges human beings to worship Him only, not to any others. The obligation to only worship Him may not be returned to, for instance, worship any other else, although as only the way to come to Him. The ideas of the great judge can be seen in his interpretation to QS al-Isrā': 57 asserting that to worship other than Allah is useless since the "gods" also hope the mercy and forgiveness of Allah. The interpretation implies that to worship Allah must be directly done, without involving any third parties.

Another proof of orthodoxy in the ideas of Tafsir Anom can also be seen from his interpretation to QS al-Mā'idah: 2. To interpret the word *al-qalā'id* (necklace) in the Qur'anic verse, he explained that in the prior to Islamic era, there was a tradition that the Arab people would always wear necklace made from certain wood when they wanted to go out of Mecca. They weared it for wishing safety during their journey. Tafsir Anom then commented that the tradition is forbidden in Islam.²¹ From the interpretation, it can be seen that Tafsir Anom denies the existence of all things regarded of having a supernatural power and giving "bless" for their owners. He forbod the usage of supernatural things to get safety since Allah is the only agent giving safety to all creatures.

¹⁹Bruinessen, Martin Van, *Kitab Kuning, Pesantren dan Tarekat: Tradisi-Tradisi Islam di Indonesia*, Bandung: Penerbit Mizan, 1999, pp. 159

²⁰This book consisting of three chapters was published firstly in the first decade of 20th century, following the establishment of Paheman Mardikintaka (Mardikintaka Foundation) by Tafsir Anom to publish the Islamic works in Surakarta.

²¹Anom, Raden Pengulu Tafsir, tt, *Al-Juz' al-Awwal min Tafsīr al-Qur'ān al-Azīm*, Surabaya: Maktabah Nabhāniyyah, 1910, pp. 152

The second book is *Tafsir Surat Wal Aşri*, written by Siti Chayati and introduced by Suparmini through the publisher of Warasoesila, a publisher in Surakarta in 1924. It is not clearly known on who are the two women exactly. The 16 pages book is written in Javanese language and letter, available in Radya Pustaka museum, Surakarta (code Taf 297.122).

Even though it is consisted of 16 pages only, this kind of interpretation is an extensive work since it was aimed to elaborate a short chapter of al-Qur'an (*surat*) consisting of three verses only. To explain the truth of al-Qur'an, this book referred not only to other Qur'anic verses, prophetic tradition and other Islamic references, but also Bible. It shows that the authors have an intensively academic touching to the Christian tradition. Beside that, the authors also seem to have the extensive insight on journalistic disciplines. It can be seen from their interpretation to QS al-'Aşr. In interpreting to the first verse of this *surat*, Chayati and Supamini asserted that the verse explains the swear of Allah using time, era or period (*al-'aşr*). The usage of time, era or period (*al-'aşr*) for swearing is expected to stress that being discipline in time is an pivotal thing since there are many people being regretful for making the time useless. The both also explained that anyone who does not use his time to do the good things and charity will become looser. They will face the trial of the God's court in which their assets and possessions will not make them free and there is no lawyer that can defend them from God.²²

Furthermore, Chayati and Suparmini explained that all the prophets had been given the holy books, and Muhammad is the last prophet. Allah gives him a holy book namely al-Qur'an in which its contents scopes all contents of the previous holy books.²³ To prove that Muhammad is the last prophet, the authors of Qur'anic exegesis book referred to not only QS al-Aḥzāb: 40, but also the Bible Yohannes (16): 6-11. Referring to the verse of Bible, Chayati and Suparmini explained that the attendance of Muhammad as the last prophet is truly predicted by Isa (Jesus), a prophet teaching and spreading the Christian. Therefore, there is no more reason for Christians to do not believe in the Islamic teachings. The Christians should believe in the Islamic teachings in order not to regret in hereafter.²⁴

The Chayati and Suparmini's warning for Christians rather than for any other non-moslem communities, to believe in the Islamic teachings truly shows the reality of socio-religious dynamics in the beginning of 20th century. The clash of Moslems and Christians as the impacts of Christian missionaries was a crucial problem in Java in the period. In Surakarta, Christian missionaries emerges in the end of 19th century. Initially, Sunan Pakubuwono X, the ruling king of Surakarta, minded and protested for the missionaries activities to Resident W. de Fogel (1897-1905) in 1897. Finally, the greatest king of Surakarta

²²Chayati, Siti, *Tafsir Surat Wal Ngasri*, Solo: Worosoesilo, 1924, pp. 3

²³*Ibid*, pp. 6

²⁴*Ibid*, pp. 7-12

was forced to permit the missionaries activities supported by the European landowners in 1910. Furthermore, the Christian missionaries were very well- developed in Surakarta.²⁵ Hence, the writing of this book of Qur'anic exegesis had also been influenced by the surrounding socio-religious contexts.

The third book is *Tafsir Qur'an Djawen* written by Dara Masyitah. It is also not clearly known on who is she and her academic background exactly. The book written in the Javanese language and letter was published by Warasoesila publisher in 1930.²⁶ This book is available in Radya Pustaka museum, Surakarta with code 297.122 Taf. The book had been written in the same pattern with the other Javanese Qur'anic exegesis. The Qur'anic verses are written in the right side of page, the translations of the Qur'anic exegesis are written in the left side of page, and the interpretations are written in the underneath.

This book gives detail interpretations to the Qur'anic verses through analysis method (*tafsirtahlily*). This method interprets Qur'anic verses by explaining all aspects related to the verses and explaining their meanings in accordance with the expertise and tendency of interpreter. In interpreting Qur'anic verses, Masyitah uses not only logical explanations but also quotation of the prophetic traditions. She sometime interpret a Qur'anic verses by quoting other verses (*tafsir al-Qur'an bi al-Qur'an*) and considering the happening social-religious dynamics. It can be seen from her interpretation to QS. al-Baqarah: 113-114. In her interpretation, Masyitah criticizes the unbelievers' arrogance claiming that they are the only true group and their religion is the only true religion. Although the verse explains about the unbelievers' arrogance and truth claim among the inter-religion followers, but Masyitah also criticizes the different groups in Islam that are contaminated by the unbelievers' arrogance. The different groups in Islam blame each other and claim that their group is the only true group. The followers of Syafi'i's school blame the followers of Hanafi, Maliki and Hanbali's school and claim that they are the best.²⁷

It is possible to assert that Masyitah refers her critique to the different Moslem groups in Indonesia, particularly in Indonesia. In the end of 1920s, the socio-religious life in Indonesia was colored by the debate on the practices of the local religious traditions among two different groups: traditionalist and modernist groups. The first group was represented by Nahdlatul Ulama (NU)²⁸ and the second one was represented by Muhammadiyah.²⁹ The

²⁵Kuntowijoyo, *Raja, Priyayi dan Kawula*, Yogyakarta: Penerbit Ombak, 2006, pp. 39-41

²⁶This book seems to consist of some chapters. I merely find the second chapter starting in page 287 and ending in page 562.

²⁷Masyitah, Dara, *Tafsir Al-Qur'an Djawen*, Solo: Woroesilo, 1930, pp. 465-466

²⁸Nahdlatul Ulama (NU) was established by KH Hasyim Asy'ary, the founder of Pesantren Tebuireng, Jombang, East Java in 16 Rajab 1344/31 January 1926

second group criticized the first one of practicing some local religious traditions regarded as heresy rituals. The communities of Nahdlatul Ulama are regarded as misleading group because of practicing the ritual of compliment and praise to the prophet Muhammad (*zibā'iyah*), the ritual of prayer to the death (*tahlilan*), the ritual of visiting to the graveyards (*ziarah kubur*), the ritual of certain readings in the dawn prayer (*qunūt*), reading certain praise to Allah and the prophet Muhammad after prayer loudly, the formation of mosque that has the large drum (*bedug*) and hollow wood to inform the time of prayer (*kentongan*), and pulpit that is equipped with stick and throne resembling a king.³⁰

From some quotations of three books of Qur'anic exegesis, it can be seen on how the dynamics of Qur'anic exegesis intensively happened in Surakarta in 1900-1930. The three books truly are written in the same town, in the different decades, so they have different concerns in determining the certain actual themes to be central issues. *Tafsīr al-Qur'ān al-'Aẓīm*, written by Raden Pengulu Tafsir Anom, much more focuses on the themes of Islamic orthodoxy as main issues. It can be understood since this book is written by the great judge (*pengulu ageng*) of Surakarta Kingdom who got involve in trial of court based on Islamic law system. Therefore, although this book was written in the central area of Javanese syncretism, it inclines to Islamic orthodoxy. As if the emergence of this book confirms that the Islamic orthodoxy is the only official ideology of Surakarta, not Islamic-Javanese syncretism.

Meanwhile, *Tafsīr Surat Wal Aṣri*, written by Siti Chayati, much more focuses on the themes of Islam-Christian relationship as central issues. It can be understood since the authors were worried about the activities of Christian missionaries increased in Surakarta. As if the appeal of the authors to the Christians to believe in--and convert to--Islam was expected to slow down and stop the activities of Christian missionaries in Surakarta. The denial of Christians to Islam is convinced as useless way since the truth of Islam and the attendance of Muhammad as the last prophet have been predicted by the Bible.

On the other hand, *Tafsīr Qur'an Djawen*, written by Dara Masyitah, inclines to focus on the urgent of Islamic brotherhood (*ukhuwwah Islamiyyah*) as main issues. The female interpreter seems to be worried with the friction phenomena among Indonesian Moslems in debating on the local religious practices. The intense debate between the modernist group represented by Muhammadiyah and the traditionalist group represented by Nahdlatul Ulama (NU) emerging in the moment becomes the target of her critique. She realizes that the truth claims among the different group of Moslems will threat the integration of Islamic brotherhood (*ukhuwwah Islamiyyah*).

²⁹Muhammadiyah was founded by KH Ahmad Dahlan in Kauman, Yogyakarta on 18 November 1912 (Alfian, 1989: 152)

³⁰Noer, Deliar, *Gerakan Modern Islam di Indonesia 1900-1942*, Jakarta: LP3S, 1996, pp. 108

Apart from the various central issues, the existence of three Qur'anic exegesis books is a proof of the intense dynamics of Qur'anic exegesis in Surakarta in the first three decades of 20th century. The intense dynamics, in my opinion, is not apart from the role of Sunan Pakubuwana X,³¹ the king of Surakarta at the time. As the king running the governance affairs (*senapati ing ngalaga*) and religious affairs (*sayidin panatagama khalifatullah*) as well, he had made the conducive policies for the dynamics of Islamic studies, particularly in the subject of Qur'anic exegesis.

The most monumental policies made by Sunan Pakubuwono was establishment of Islamic school namely Madrasah Manbaul Ulum, that was officially opened in Sunday, July 23th 1905, and giving scholarship for the selected students of Surakarta to pursue their study in Middle East Universities.³² The establishment of the Islamic school actually violated the rule of the Netherlands-Indies, i. e. *Staatblad van Nederland-Indie* 1893. The rule of the Netherlands prohibited the teaching activities on Islamic subjects both in the state and private schools.³³ The establishment of the most modern Islamic school in Surakarta was reported by the Netherlands newspaper namely *Algemeen Handelsblad* 29 September 1905 edition. It was regarded as Islamic higher education in Java (*Mohammedaansche Universiteit op Java*) successfully leading the reform of the modern Islamic education in Indonesia. Moreover, the news of establishment of the modern Islamic school had become the central issues in the Netherlands' parliament. An illegal newspaper even highlighted a report on the existence of Manbaul Ulum that made the members of the Netherlands' parliament worried about it, since the Islamic higher education in Surakarta was run without any supervision from the colonial government of the Netherlands. A journal of the Netherlands also evaluated that the establishment of the modern Islamic school in Surakarta made Sunan Pakubuwono X was not neutral anymore in the religious affairs. Even, the journal notes that the establishment of the Islamic school was aimed to balance the development of Christian missionaries' movement in Surakarta.³⁴ Such some visionary policies made by Sunan Pakubuwana X brought about the intense dynamics of Qur'anic exegesis in Surakarta in the first three decades of 20th.

³¹Sunan Pakuwono X, the greatest king of Surakarta, is also curious to learn Islamic teachings. He learns the basic of Islamic teachings from Tafsir Anom V and his brother namely Bagus Panji Affandi Muḥammad Muqaddas (Puspanegara, 2007: 43)

³²Soejoeti, H. S. Djalal, "Riwayat Mamba'ul 'Ulum", Adil No.2 Tahun 1984, 18.

³³Sutirto, Tundjung W., Refleksi Hari Kebangkitan Nasional: PB X Layak Mendapat Gelar Pahlawan Nasional, <<http://www.msi.iii.net/baca.asp/kategori:rubrik&menu:Milah&baca:artikel&>, pp. 92

³⁴Kuntowijoyo, *Op. Cit*, pp. 40

Closing Remarks

The dynamics of Qur'anic exegesis in Surakarta in the first three decades of 20th could be developed because of the supports of the condusive policies of the ruling power. Such a dynamics of Qur'anic exegesis is not found in the previous era of Surakarta kingdom and after, even in any other Islamic dynasties in Java. The dynamics of intellectual traditions always be in line with the policies of the ruling power. Since it is difficult for the intellectual traditions to massively develop without any support from the ruling power

REFERENCES

- Abdullah, M. Amin, 2003, "Arah Baru Metode Penelitian Tafsir di Indonesia", Kata Pengantar untuk Islah Gusmian, *Khazanah Tafsir Indonesia: Dari Hermeneutika hingga Ideologi*, Jakarta: Teraju
- Adnan, Muhammad, 1982, *Tafsir Al-Qur'an Suci Basa Jawi*, Bandung: PT Al-Ma'arif
- Alfian, 1989**, *Muhammadiyah: The Political Behavior of a Muslim Modernist Organisation Under Dutch Colonialism*, Yogyakarta: Gadjah Mada University Press
- Anom, Raden Pengulu Tafsir, tt, *Al-Juz' al-Awwal min Tafsir al-Qur'an al-Azim*, Surabaya: Maktabah Nabhāniyyah
- Bruinessen, Martin Van, 1999, *Kitab Kuning, Pesantren dan Tarekat: Tradisi-Tradisi Islam di Indonesia*, Bandung: Penerbit Mizan
- Chayati, Siti, 1924, *Tafsir Surat Wal Ngasri*, Solo: Worosoesilo
- Djamil, Abdul, 2005, *Arah Pengembangan Studi Islam di Indonesia*, Makalah Pembekalan Mahasiswa Baru Program Doktor IAIN Walisongo
- Eriyanto, 2001, *Analisis wacana: Pengantar Analisis Teks Media*, Yogyakarta: LKiS
- Gusmian, Islah, 2003, *Khazanah Tafsir Indonesia: Dari Hermeneutika hingga Ideologi*, Jakarta: Teraju
- Henderson, John B, 1998, *The Construction of Orthodoxy and Heresy: Neo-Confucian, Islamic, Jewish, and Early Christian Patterns*. Albany: State University of New York Press
- Hisyam, Muhammad, 2001, *Caught Between Three Fires: The Javanese Pengulu Under the Dutch Colonial Administration 1882-1942*, Jakarta: INIS
- Ichwan, Moch. Nur, 2002, "Literatur Tafsir Qur'an Melayu-Jawi di Indonesia: Relasi Kuasa, Pergeseran dan Kematian", dalam *Visi Islam* Jurnal Ilmu-ilmu Keislaman, Volume 1, Nomor 1, Januari 2002

- Ismail, Ibnu Qoyyim, 1997, *Kyai Pengulu Jawa, Peranannya Pada Masa Kolonial*, Jakarta: Gema Insani Press
- Kristeva, Julia, 1980, *Desire in Language a Semiotic Approach to Literature and Art*, Oxford: Basil Blackwell
- Koentjaraningrat, 1985, *Javanese Culture*, London: Oxford University Press
- Kuntowijoyo, 2006, *Raja, Priyayi dan Kawula*, Yogyakarta: Penerbit Ombak
- Masyitah, Dara, 1930, *Tafsir Al-Qur'an Djawen*, Solo: Worosoesito
- Muchoyyar, Muhammad, 2003, *Tafsir Faiḍ ar-Rahmān Fī Tarjamah Tafsir Kalām Mālik ad-Dayyān Karya KH. Muhammad Ṣālīḥ as-Samarāni (Suntingan Teks, Terjemahan dan Analisis Metodologi*
- Muḥammad Ḥusain al-Ḍahaby, *At-Tafsir wa al-Mufassirūn*, Juz II, Dār al-Fikr, Beirut, tt
- Noer, Deliar, 1996, *Gerakan Modern Islam di Indonesia 1900-1942*, Jakarta: LP3S
- Nuryati, Siti, *Manbaul Ulum Dalam Peningkatan Pengamalan dan Syiar Islam: Dinamika Pendidikan Islam Dalam Mencetak Ulama Di Surakarta Tahun 1905-1945, Skripsi pada Fakultas Sastra Jurusan Sejarah UNS, (<http://eprints.uns.ac.id/521/>, diakses tanggal 21 Januari 2012).*
- Pakubuwana X, 1914, *Serat Karongrongan III*, Surakarta: Budi Utomo
- Parawaris, 1934, *Serat Pengetan Lelampahipun Suwargi Kanjeng Pengulu Tafsiranom V Sumare Ing Imogiri*, Surakarta: tp
- Pijper, G. F, 1985, *Beberapa Studi Tentang Sejarah Islam di Indonesia 1900-1950*, terjemah Tudjimah dan Yessy Augusdin, Jakarta: UI Press
- Samroni dkk, 2010, *Daerah Istimewa Surakarta: Wacana Pembentukan Propinsi Daerah Istimewa Surakarta Ditinjau dari Perspektif Historis, Sosiologis, Filosofis dan Yuridis*, Yogyakarta: Pura Pustaka
- Setiawan, M. Nur Kholis, 2005, *Al-Qur'an Kitab Sastra Terbesar*, Yogyakarta: eLSAQ Press
- Shihab, Quraish, 1994, *Membumikan Al-Qur'an*, Bandung: Penerbit Mizan
- Suseno, Frans Magnis, 1985, *Etika Jawa: Sebuah Analisa Falsafati Tentang Kebijakan dan Hidup Jawa*, Jakarta: Gramedia

**ELEMENTARY SCHOOL TEACHER PEDAGOGIC COMPETENCE
DEVELOPMENT THROUGH LEARNING BASED EXPLORATION,
ELABORATION, AND CONFIRMATION (EEC)
IN SALATIGA**

**Slameto, Satya Wacana Christian University
slameto_uksw@yahoo.com**

Abstract

Demands the development of teacher competencies can not be avoided; Within Standard Process also confirmed that teachers are required to teach the process of educating and innovative learning through exploration, elaboration, and confirmation (EEC). However its implementation in Salatiga primary schools, many teachers do not understand what it is EEC. Therefore, it is necessary for teacher empowerment.

Implementation of innovative learning (EEC) to empower elementary teachers pedagogical begins with socialization and then doing development learning workshops. Lesson plans was developed using an approach that emphasizes the skills of growing and developing a number of skills and certain characters (exploration) in the self-learners to enable them to process information so discovered new things and useful (elaboration). Lessons focus on how students should learn (learning how to learn).

After all lesson plans was implemented by each teachers as developer under supervised by principals and Supervisors, it can increase teachers' pedagogical competence. Increasing teachers' pedagogical competence happens because in this study proved to increase student activity is high at every stage of learning, the positive response of the students towards learning, followed by a positive response from teachers to students and the learning tools are developed, and the optimism of teachers to implementation within the teaching-learning in each class.

Keywords: Learning tools: syllabus & lesson plan, exploration, elaboration and confirmation, elementary school teacher pedagogic competence

Introduction

The purposes of National Education are to educate the life of the nation and develop the whole person. The Republic of Indonesia legislation No. 20 of 2003 about the National Education, the position as an educator teacher is a professional position. For the professionalism of the teachers are required to continue to develop in accordance with the changing times and science. The charges were reasonable given the need for qualified human resources and has the capability to be able to compete better in the regional forums, national and international can not be negotiable.

Teachers are often blamed as the culprit of the poor quality of education, low quality of education appears in case of: 1) the student's ability to absorb the subjects taught teachers not maximal, 2) less incomplete formation of character is reflected in the attitudes and life skills possessed by each student, and 3) lack of ability to read, write and count students, especially at the elementary level. This is due to the diversity or lack of ability of the teacher in the learning process and the procurement of knowledge, the lack of accurate and standard measurement tools to know the teacher's capabilities, which do not reflect the development needs and welfare of teachers who have not been adequate.

One feature of the education crisis in Indonesia is not able to show the performance of teachers (work performance) is adequate. This shows that the performance of teachers is not fully supported by an adequate degree of mastery of competencies, hence the need for a comprehensive effort to improve the competence of teachers. In an effort improve the quality of education, teacher competence is one very important factor. Efforts to improve the quality of teachers in Indonesia, among others, through the policies set forth in Law No. 14 of 2005 on Teachers and Lecturers, and Government Regulation no. 19 Year 2005 on National Education Standards. We need to realize that the success of the change and reform the education system relies heavily on "what teachers do and think" or in other words, depends on the mastery of competencies of teachers (Fullan in Djihad Suyanto and Hisham, 2000). Pedagogical competence for elementary school teachers play an important role; core of pedagogical competence lies in being able to organize learning to educate, and educate the core of learning lies in the ability of teachers to carry out their daily learning (Slameto, 2011).

Competency is defined as the knowledge, skills, and basic values that reflected in the habit of thinking and acting. Another meaning of competence is the specification of the knowledge, skills, and attitudes of a person and their application in job retention, in

accordance with the performance standards required by the court. Thus, the competency of each teacher will show the actual quality of teachers. Competence will be materialized in the form of the acquisition of knowledge, skills and professional attitude in carrying out functions as a teacher. Teacher competency consisting of: pedagogical, personal, social and professional must be owned by a teacher (Slameto, 2011); Development of teacher competency standards aimed at improving teacher quality and teacher training pattern that are structured and systematic.

Teacher competency standard is a statement of the required criteria, defined and agreed upon in the form of the acquisition of knowledge, skills and attitudes for a competent educator that is worth mentioning. The purpose of teacher competency standards is as a minimum level of competence assurance mastered by teachers so that the corresponding may be: do their jobs professionally, can be developed effectively and efficiently, and can serve stakeholders in the learning process, with the best fit in their respective sectors. Benefits of teacher competency standards are drawn up as a reference: the implementation of the competency test, of education and training, and coaching. In addition, as a reference for interested parties to: perform the evaluation, development of teaching materials for educators and so on (Slameto, 2011).

Competency Standards are the benefits teachers as: a reference of the competency test implementation, education and training performance, and coaching, a reference for the evaluation, development of teaching materials, and so on. Teacher Competency Standards (Education minister rules RI no. 16 of 2007) consists of: pedagogic competence, personal competence, social competence and professional competence. Each component consists of several units of competency.

In Process Standards (government regulations 41 of 2007) asserted that teachers in teaching especially on core activities that is the learning process to reach baesd competencies must be done interactively, inspiring, fun, challenging, motivating the students to actively participate and provide enough space for innovation, creativity, and independence according to their talents, interests, and physical and psychological development of students. Activities are carried out in systematic and systemic through the process of exploration, elaboration, and confirmation (EEC). But in practice in primary Salatiga, many teachers do not understand what is EEC, let alone execute it skillfully. Therefore, it is necessary for the implementation of teacher empowerment innovative learning.

Overall Pedagogic Teacher Competency Standards (Education minister rules RI no. 16 of, 2007) are as follows: 1) control of the learner characteristics of the physical, moral, social,

cultural, emotional and intellectual, 2) control of learning theories and the principles of educate learning, 3) develop related curriculum with the subject/ field of development of teaching, 4) organized an educational learning, 5) make use of information and communication technology for the benefit of learning, 6) understand the characteristics of learners aged elementary school related to the physical, intellectual, social-emotional, moral, spiritual, and socio-cultural backgrounds, 7) communicate effectively, empathic, and manner with the students, 8) conduct assessment and evaluation processes and learning outcomes, 9) utilize the assessment and evaluation for the benefit of learning, and 10) take reflective action to improve the quality of learning.

Background affect teacher competency it can be divided into two (Slameto, 2011), namely: internal factors such as teacher education, gender, class/ rank, work experience, motivation, intelligence, aspiration, etc. And external factors such as school policy, setting the workload of teachers (and additional duties), upgrading ever and needs to be followed, the credit approval rate promotion/ class, climate/ culture of the school, the number and quality of students being served, the support and cooperation of friends colleagues and other stakeholders.

According to the constructivist paradigm, while science is associated with the development of the mediated both socially and culturally, so it tends to be subjective. Learn more on this view as a process of self-regulation in completing cognitive conflict that often arises through concrete experience, collaborative discourse, and interpretation. Learning is an active student activities to build knowledge. Students are responsible for their learning occasion and learning outcomes. Students are doing reasoning through the selection and organization of experience and integrate it with what is already known. Learning is a process of negotiation of meaning based on personal understanding built (Wolfolk, A. 2004; Duffy and Cunningham in Jonassen, 2001).

Meaningful learning occurs through reflection, cognitive conflict resolution, dialogue, research, hypothesis testing, decision-making, all of which are intended to renew the individual thinking level become more perfect. Constructivist paradigm is the basis of the current education reform. According to the constructivist paradigm, prefers learning problem solving, develops the concept, construction solutions and algorithms rather than memorizing procedures and use them to obtain the correct answer. Learning is more characterized by experimentation activities, questions, investigation, hypotheses, and models generated by the students themselves (Gagnon and Collay in Cruickshank et al. 2006).

In general, there are five basic principles underlying the constructivist classroom, namely (1) put the issues relevant to students' needs, (2) develop learning around primary concepts, (3) respect the views of students, (4) learning materials adapt to student needs, (5) assess contextual learning (Wolfolk, A. 2004; Slameto, 2011). Learning plan is very important to help teachers and students to be creative, organize, and organize learning events that allow learning to occur in order to achieve the learning objectives. Learning model is needed to guide the learning process effectively. Effective learning model is a model of learning which has a theoretical foundation humanistic, flexible, adaptive, present-oriented, has a syntax learning's simple, easy to do, to achieve the objectives and learning outcomes are being targeted.

Learning model that can be applied to the field of study should be packed with the coherent nature of the study field of education. However, philosophically objective is to facilitate student learning in the growth and development of learning awareness, so that they can do if the thought, feeling, and spirit in solving real-life problems in the world. Learning models that can accommodate these goals is that is based on constructivist paradigm as an alternative paradigm (Duffy and Cunningham in Jonassen, 2001). Model of problem solving and reasoning, inquiry training models, models of problem-based instruction, conceptual change model of instruction, the model group investigation, and many other models that are based on constructivist paradigm, is an alternative learning models that suit the nature of learning humanist populist.

It is more important, how teachers encourage and accept student autonomy, investment starting from the raw data and primary sources (not just textbooks), students appreciated the thought, dialogue, quest, and puzzles as director of learning. Traditionally, learning has been considered as part of "mimicking" a process which involves the repetition of students, or imitate the new information presented in the report or quiz and test. According to the constructivist paradigm, learning is preferred to help students internalize, reshape, or transform new information (Wolfolk, A. 2004).

The research problem

Based on the above, it can be formulated as the following problem. How to improve pedagogical of elementary teachers in aspect to implement learning which educates through learning tools that educate development (EEC) that are syllabus and lesson plans that are tested in the classroom?

Objectives and benefits

The purpose of the implementation of this innovative learning is to:

1. Developing learning tools that educate (EEC) and the syllabus and lesson plans ready to be implemented in primary School
2. Lesson Plan pilot the learning outcomes in educational development
3. Improve teachers' pedagogical competence ES on implementing aspects of learning that educates.

Results of the implementation of this innovative learning is best/ good practices in developing a learning model that educates (EEC), learning devices and increasing teachers' pedagogical competence appropriate to the standards set forth in the government regulations 41 of 2007.

METHODS

Implementation of innovative learning (EEC) to empower primary teachers pedagogical competence partner will involve about 15 students Primary School Teacher Education year 4; implementation of innovative learning (EEC) is conducted in accordance Strategy pembelajaran like this.

Step Implementation

Learning strategies are different ways to achieve different learning outcomes under different conditions (Reigeluth, 1983; Degeng, 1989). Variable learning strategies are classified into three, namely:

- a. Organizing strategy is a way to organize the content of a field of study, and the activities related to the selection of action content/ materials, the arrangement of the contents, charting, formatting and the like.
- b. Delivery strategy is a way to deliver on student learning and/ or to receive and respond to feedback from students.
- c. Management strategy is a way to organize the interaction between students and other learning strategies variables (variables organizing strategy and delivery strategy). Learning management strategies related to the choice of organizing strategies and delivery strategies used during the learning process. Learning management strategies related to scheduling, making learning progress notes, and motivation.

However, given the educational learning that implement exploration, elaboration and confirmation according to the standard process (government regulations 41, 2007) is still a new thing for the elementary school teacher, before developing the use of learning

strategies above, it is very necessary socialization and development workshops educational learning tools. Socialization and the workshop participants were elementary school teachers, Principals and Supervisors ES is concerned. Involving Elementary Principals and Supervisors concerned to be very strategic, considering they will supervise the teacher participants/ implentor academically.

The results of this workshop and socialization is learning tools that: syllabus and lesson plans also its supporters that are prepared to be implemented in learning suit with each schedule of teacher in elementary school. Mentoring by experts will be done when the teacher doing teaching or implementation of innovative lesson plans; while collecting data through observation with observation sheet that has been prepared.

After the implementation of teaching, teachers with companion held a reflection on the implementation of writing in the form of best/ good practices of innovative learning in elementary school. Results of best/ good practices teachers are then presented and reviewed by the FGD, and follow-up companion to the final report. In order to determine the increase elementary teachers' pedagogical competence test competency through tests/ inventories teacher perceptions.

Scenario Educating Learning Steps

Scenario Learning is teacher-managed learning syntax and embodied in a real learning. This learning scenario can be prepared by the teacher explicitly or implicitly, and can realized by the teacher in the real learning. Learning scenario is a manifestation of syllabus to lesson plan become learning scenario. Said to be explicit, because inexperienced teachers, the learning scenario should be written directly measures (syntax) to be taken, but for an experienced teacher (who has good pedagogical competence), scenario learning could not explained in detail (is very pretty pointers only).

Management of learning, generally involves the following steps: (a) Introduction, (b) Core Activities, (c) Closing Activities. Theoretical description of the syntax is described as follows:

1) Introduction

Involvement (engagement)

Engagement is the initial activity in a meeting aimed at learning to focus students' attention so that they are ready to engage actively in the learning process. Activities undertaken in the engagement stage, including through provision of trigger questions by the teacher to the

student to relate the learning experience or prior knowledge of students with the goal/ indicator of achievement of competencies or scope of the material to be studied.

2) Core

Exploration

Exploration is the initial effort to build knowledge through increased understanding of a phenomenon. Strategies used to expand and deepen their knowledge by applying active learning strategies. Exploration is an activity in trying to find a broad and deep information about the topic/ theme of the material to be studied. Topic/ theme of the material based on the syllabus and lesson plans. Exploration carried out by manual or step-by-step guides that have been prepared teacher/ student is determined jointly by utilizing a variety of learning resources available. A variety of interactive learning approach, inspiring, challenging, fun, and motivating as well as attract students applied in exploration activities. Step-by-step guide which prepared teachers reflect learning steps are essential for various learning domains. In the realm of knowledge (cognitive), between learning the steps necessary to examine and analyze the activities of the topic/ theme of the material. In the realm of skills (psychomotor), between learning the steps necessary to carry out practical activities learned skill. Meanwhile, in the realm of attitudes (affective), between learning the steps necessary to live the events through a variety of activities, such as modeling, problem solving, decision making, etc.

In exploration activities students engage in cooperative and collaborative learning through concept mapping, discussion, listen carefully and think critically, looking for information on the Internet, reading textbooks or other print media, listen to tapes or information through radio, watch video via visual information or television broadcasts, to appreciate, to make observations in natural surroundings, doing experiments in the laboratory or studio. Students, individually and in groups, making notes and writing reports conducted exploration process. In exploration activities, the teacher serves as a resource that answers questions students if students get difficulties, which gives reference information to students to explore further, or provide motivation to students who participate less actively.

Elaboration

Elaboration is a student activity to deliver the results of exploration has been done in a more thorough, meticulous and detailed. Elaboration is the process of adding a new information details so that (will) become more meaningful. With the elaboration of strategies, coding is easier and more certainty. This strategy helps transfer new information from the brain meori

in the short-term to long-term by creating relationships and combined with the new information that ever existed.

Elaboration can be done in the form of the presentation of the work of the group, display/ exhibition of the products of students in the exploration, or inter-group tournaments. In the course of elaboration, students give comments and constructive questions on the work presented by his friend. In addition, in the elaboration, students also to check the results of exploration that has been done to other reference sources available.

Confirmation

Confirmation is an interactive activity between the teacher as an expert resource persons/ facilitators with students to provide feedback on the results of exploration and elaboration. In this activity, the teacher can also take advantage of a variety of reference sources to confirm the results of exploration and elaboration of students. Meanwhile, students reflect on learning experiences that have been conducted. Confirmation of the activity, students will learn to achieve meaningfulness of learning experiences that have been executed. Follower impact of the confirmation activities is curiosity to follow up exploration activities wider and deeper.

3) Cover

Rating of learning outcomes

Rating of learning outcomes is an educator activities with students to measure the results obtained from the learning process. Learning outcomes manifested in various forms of independent tasks that can be exhibited, observed, or collected in student portfolios. In addition, measurements of learning outcomes can also be done through a written test, the tasks that show the collection of student competence that have been achieved, or for performance. Actionable learning assessment results by providing remedial learning, enrichment, or assignment either individually or in groups. In addition to closing activities, the assessment process can also be done at the time of core activities.

IMPLEMENTATION RESULTS AND DISCUSSION

Implementation of innovative learning (EEC) to empower primary teachers pedagogical competence is also involved about 15 students Primary School Teacher Education year 4; implementation of innovative learning (EEC) is still a new thing for the elementary school

teachers, before developing a learning device needs to be disseminated learning and development workshops that educate devices. Socialization and the workshop participants were elementary school teachers, Principals and Supervisors ES is concerned. Involving Elementary Principals and Supervisors concerned to be very strategic, considering they will be supervising teacher participants/ implentor academically.

Implementation and Results

Development was carried out two stages: the first stage is the development stage and the second stage is the stage of real learning. In order to produce the intended learning begins with socialization and workshops. Implementation schedule as the following table.

No	Time	Activity	Results
1	Juli 2012	Socialization educate Learning	Understanding the principles of educate Teaching Learning Process
2	Juli 2012	Dissemination Standard Process and its implications for development of learning tools	understanding of the Teaching Learning Process Basic Standard that educative tools
3	July 2012	Syllabus Development Workshop	Skills developed the Syllabus
4	July 2012	Indicators Development Workshop	Skills Developed Indicators for syllabus and lesson plans
5	July 2012	lesson plans Development Workshop	Skills Developed lesson plans
6	Sept 2012	Feedback and revision of syllabi and lesson plans	Draft 6 innovative learning tools
7	October 2012	Work plans and follow up	Teaching Learning Process implementation plan in Elementary School

During the workshop, the development of learning starts from defining indicators/ learning objectives, student characteristics analysis, task analysis, formulate concepts and instructional strategies, selecting media, develop instruments of evaluation, and revision of the device, with the added element of character in every device that is developed. Especially for the lower class that are 1-3 grade, the learning device use the thematic model. Learning

tools that have been developed (draft syllabus, lesson plans, teaching materials, worksheets, and LDS) then given feedback by two experts and then revised.

Learning tools that can be developed are: (1) syllabus, the component indicators, subject matter, and indicators of achievement of learning outcomes, (2) six lesson plan (3) worksheets used to determine the students' process skills in learning, (4) instructional materials, (5) instructional media can be interactive multimedia.

Syllabus development stages through phases: Planning, Implementation, Improvement, stabilization and assessment syllabus. Teams that elementary teachers are assigned to selected partners to create a syllabus first need to gather information and prepare a bibliography or reference appropriate for developing syllabus. Performed by utilizing information retrieval and information technology devices such as multi-media and internet. In carrying out the preparation of the syllabus, the syllabus constituent elementary teachers need to understand all the devices associated with the preparation of the syllabus, such as Content Standards that relate to the subjects in question and the Education Unit Level Curriculum. Opaque syllabus needs to be re-examined before being used in the learning activities. Assessment involves 2 Primary School Teacher Education lecturer who has long taught courses related didactic-methodical, assessment, learning psychology. Feedback from the review can be considered to improve the initial opaque. If it has met the design criteria of the syllabus can be readily translated into lesson plan. An innovative learning model that supports the implementation of EEC summarized below.

No	Class/ Smtr	Subjects/ Themes	Innovative Learning Methods	Meeting/ Time
1	I/2	Science, Mathematics, Indonesian/ Gaming	Group Investigation	2 X (6 X 65')
2	III/2	Civics and Science/ Education	Word Square	2 X (4 X 35')
3	III/2	Mathematics and Social Science	Jigsaw Kooperative Type	3 X (4 X 35')

4	IV/2	Social Science	Discussion/ Working Group	3 X (9 X 35')
5	V/2	Mathematics	Cooperative Script	2 X (4 X 35')
6	V/2	Social Science	Role Play	2 X (6 X 35')

Mechanism taken in the development of indicators ranging from analyzing the standard level of competence in the competence and basic competences, analyze the characteristics of the subjects, the students, and the school, analyze the needs and potential, formulate indicators and develop assessment indicators.

Level of competence can be seen through the verbs that are used in standard operations and basic competencies. Level of competence can be classified into three parts, namely the level of knowledge, process level, and the level of implementation. The education system must be able to serve the needs of the learners, the environment, and to develop the potential of learners optimally. Learners get an education in accordance with the potential and speed of learning, including the potential level achieved. Indicators developed to encourage an increase in the quality of schools in the future, so that the necessary information on the analysis of potential schools that are useful for developing curriculum through the development of indicators. Each basic competencies to be developed at least three indicators. Overall indicators of competency meet the demands contained in the verb used in the standard operations and basic competencies. Indicators must achieve a minimum level of competence can be developed basic competencies and exceed minimum competency in accordance with the potential and needs of learners. Indicators that describe the hierarchy of competence must be cultivated. Formulation of indicators shall include at least two aspects, namely the level of competency and learning materials. Indicators should be able to accommodate the characteristics of the subjects so using the appropriate verb operational. Formulation of indicators can be developed into some assessment indicators that include cognitive, affective, and/ or psychomotor.

Lesson plans prepared for the development of the Basic Competence; includes Competency Standards, Basic Competencies, and Indicators are quoted from the syllabus prepared earlier; allocation of time taken into account to achieve a basic competence is concerned, which is expressed in the many hours of lessons and meetings. Therefore, the time to achieve a basic competency can be calculated in a number of meetings depends on the characteristics of basic competence.

Steps Lesson Plan from writing identity (school, subject, class/ semester, the standard of competence, basic competence, indicators and time allocation), formulating learning goals, formulating learning materials, formulating innovative learning method, formulating learning methods, formulate measures EEC-based learning activities, learning resources and formulate lists the assessment.

Learning Objectives filled with mastery of the operational competencies targeted in the lesson plan. Learning objectives encapsulated in the statement of operations basic competence. If the formulation of basic competence is already operational, the formulation is exactly what made the basis in formulating learning goals. Learning goals may consist of a goal or several goals. Learning material is the material that is used to achieve the learning objectives. Learning materials were developed with reference to the subject matter contained in the syllabus. Method can be interpreted as a method completely, but it can also be interpreted as a model or approach to learning, depending on the characteristics of the chosen approach and strategy. Learning approach focuses on learning as a process of learning for students who are developing to achieve development.

Learning models focus on learning as a process described design details and situation creation environment that enables students to interact so that there is a change or development on students. Learning Method focuses on teaching and learning materials for specific learning goals are more limited. To achieve a basic competency measures should be included activities at each meeting. Basically, the steps preliminary activities it involves activities, core activities, and closing activities. However, it is possible in the whole series of events, according to the characteristics of the chosen model, using the sequence syntax according to the model. Therefore, preliminary activities, core activities, and there should not cover activities in each meeting. The selection of learning resources refers to the existing formulation of the syllabus developed by the educational unit. Learning resources include a referral source, environment, media, speakers, tools, and materials. Written learning resources in a more operationally. For example, learning resources in the syllabus books written references, Lesson plans included in the textbook title, author, and pages referred to. Appraisal valuation techniques described above, the form of the instrument, and the instrument used to collect the data. In the grain poured in matrix form horizontal or vertical. When using an evaluation technique descriptions written tests, performance tests, and homework is a project with an assessment rubric. A total of six learning device are: 6 syllabus and lesson plans and their supporters ready to be implemented in the learning schedule each teacher in the primary schools.

The second phase is the implementation of a learning device in 6 primary schools, conducted by experts at assisting teachers doing innovative learning; while collecting data

through observation to observation sheet that has been prepared. For example, the observation that educate teachers implement instructional models that apply cooperative Number Head Together technique is as follow.

NO	ASPECT OBSERVABLE	Score
1.	Motivating students	4
2.	Deliver material	4
3.	Divide students in heterogeneous groups	4
4.	Assigns number to each student	4
5.	Dividing the tasks that must be discussed by the group	4
6.	Guide students in group discussions	4
7.	Pointing students presented the results of the discussion in a way to call the number as provided	4
8.	Guiding and directing students in class discussions	3
9.	Provide reinforcement and rewards	4
10.	concludes material	4
11.	Reflection	4

To determine the increase of pedagogical competence of primary schools teacher after executing an organized lesson plan, test competency through tests using the teacher's perception inventory is conducted. 6 Results of a questionnaire completed by the teacher in question is in the following table.

No	Category increase	indicators	%
1	average	19	47.50
2	A bit high	14	35
3	High	7	17.50

Based on the results as presented above, it turns out there are 8 indicators increased pedagogic competence that high. 8 indicators are: Apply a variety of approaches, strategies, methods, and techniques creatively educating learning in five subjects; Determining appropriate learning experiences to achieve five subjects; Understanding the design principles of learning that educates; Developing learning design components; Developing a complete lesson plan, both for the activities in the classroom, laboratory, and field; Implement educational learning in the classroom, in the laboratory, and in the field; Utilizing information and communications technology in learning; Provide a variety of learning activities to actualize potential students, including creativity. Completely the other indicators increases are not included in this paper.

DISCUSSION

This syllabus development and lesson plans activities turns out has produced 6 devices scattered low grade with thematic and upscale models. Having examined all the learning tools have tried to apply the learning model to educate and includes exploration, elaboration and confirmation. Once the learning device is applied by teachers in each primary schools, it can increase the teacher's pedagogical competence.

This innovative approach learning is a skill process of learning that emphasizes the growth and development of a number of specific skills in self-learners so that they are able to process information so discovered new things that are good and beneficial form of facts, concepts, values and attitude development. The learning process is seen as a process that should be experienced by students. Learning emphasis on how students should learn to be realized. Thus this activity of development and application of learning tools that educate this has an influence on the development of students 'skills include conducting experiments and simulation skills and social skills including questioning skills, communication and discussion, on the other hand also improve teachers' pedagogical competence.

Learning by applying this educational lesson plan using the approach skills process that emphasizes growth and development in a number of skills (seek information from a variety

of sources - exploration) as well as a certain character on self-learners so that they are able to process information so it discovered new and useful thing (elaboration) in the form of facts, concepts, principles and procedures as well as the development of attitudes/ values. The learning process is proved to be a process that must be experienced by the learners can improve their skills process with the high activeness of students at each stage of the learning activity, coupled with the positive response of students towards learning, which is followed by a positive response from teachers to students (confirmation) and the development of learning tools, as well as the optimism of teachers in the implementation of the teaching and learning process in their respective class. Thus the development and implementation of an educational learning device has a high influence on increasing teachers' pedagogical competence.

CLOSING

Development of learning tools that have been carried out with the involvement of ES teachers can be produced 6 educate learning devices in the form of syllabus and lesson Plan and its supporters. After have implemented by teachers in each ES, respectively, was found to increase the teacher's pedagogical competence.

This increase of teachers' pedagogical competence occurs because of in the learning using skills approach process that emphasizes the growth and development a number of skills and a certain character (exploration) in the learner so that they are able to process information so it discovered new and useful things (elaboration). Instructional emphasis on learning how to learn. Learning process with an educational learning tools proven to improve student skills process with a high activeness student at each stage of the learning activity, existence of positive response of students towards learning, which is followed by a positive response from teachers to students and the learning tools that are developed, and the optimism of teachers toward the implementation of learning in each class.

Suggestion: This development of learning tools that I have ever done can be applied to other groups of teachers who have needs similar pedagogical development; Learning tools that have been generated can be applied in other ES with modification according to the condition of each ES; Pedagogical competence test instrument used in this development also need to be tested for validity and reliability to be used further; Learning tools that have been generated can be applied for class action research in the other ES by conducting modification.

REFERENCES

- Cruickshank, D.R. et.al. 2006. *The Act of Teaching*. New York: McGraw Hill Inc.
- Degeng, I. Nyoman S. 1997. *Strategi Pembelajaran (Mengorganisasi Isi dengan Model Elaborasi)*. Jakarta: IKIP Malang Bekerjasama dengan Biro Penerbitan Ikatan Profesi Teknologi Pendidikan Indonesia.
- Jonassen, D.H., 1996. *Handbook of Research for Educational Communication and Technology*. New York: Macmillan Library Reference.
- Reigeluth, C. M. 1999. What is instructional-design theory and how is it changing? in Reigeluth, C. M. (Ed.). *Instructional-design theories and models: A new paradigm of instructional theory, volume II*. 5-29. New Jersey: Lawrence Erlbaum Associates, Publisher.
- Slameto, 2011. *Pengembangan Kompetensi Pedagogik & Profesional Guru SMP*. Materi Workshop Fasilitasi Teaching Clinic Pasca Sertifikasi Guru SMP Seksi PPTK Dikdas Bidang PPTK. Dinas Pendidikan Provinsi Jawa Tengah
- Suyanto dan Djihad Hisyam. 2000. *Refleksi dan Reformasi Pendidikan Indonesia Memasuki Millenium III*. Yogyakarta : Adi Cita.
- Wolfolk, A. 2004. *Educational Psychology*. Boston: Allyn and Bacon.

Influence of Procedural and Distributive Justices on Teachers' Professional Commitment

Subarino¹, Abdul Jalil Ali², Tang Keow Ngang³

¹ SMAN 1 Bantul Yogyakarta Indonesia, ^{1,2,3} Universiti Sains Malaysia
¹subarino@gmail.com, ²jalil@usm.my, ³tang@usm.my

Abstract

This study focuses on the relationship between procedural and distributive justices with teachers' professional commitment. The study used questionnaire to sample 346 teachers from Middle Schools in Yogyakarta, Indonesia. Pearson correlations and multiple regression analyses indicated that teachers' perceptions of their levels of procedural and distributive justices are significantly related to their feelings of commitment and teachers' professional commitment. Practical implications of the study are discussed in relation to teachers, principals and policy-makers.

Keywords: procedural justice, distributive justice, teachers' professional commitment

1. Introduction

The topic of organizational justice is not new in the administrative literature but it is a neglected concept in educational administration [1]. Justice and fairness in the school workplace should not be taken lightly and anyone who doubts the validity of this statement simply needs to visit a school and to question teachers about how fairly they are treated on the job; then stand back and listen to the lively discussion that ensues [1]. Numerous studies show that factors affecting organizational justice related to organizational outcomes such as organizational citizenship behavior, turnover, commitment and job satisfaction [2]. A study by Yavuz [3] showed that the perception of organizational justice affect teachers' commitment. This study will examine procedural and distributive justice in relation to outcome that reflects the behavior of teachers in schools as well as the teacher's professional commitment. Teachers' commitment was related to personal factors that interact with other variables that describe teacher work, identity, self-efficacy, motivation and job satisfaction [4]. Teacher's commitment is also related to school outcomes [5]. The teacher's commitment can also be interpreted as a loyalty to the norms and standards of the profession, upholding the philosophy and values of the school, remaining in the profession, and continually extending subject knowledge and teaching expertise [6]. Generally, it can be

said that teachers who are committed perform better than if they are constrained to a specified standard within organizational range [7].

2. Theoretical Framework

2.1 Teacher's professional commitment

Vandenberg and Scarpello [8] define teacher's professional commitment as a form of acceptance of the results of one's job or selected job type with the willingness to eternally remain in that profession. The Teacher's professional commitment is also conceptualized as a psychological link between an individual and a member of the participating schools based on affective reactions of members of the school [9]. Therefore, teacher's professional commitment is the psychological relationship between teachers and teaching jobs. This includes how the teacher maximizes efforts to provide effective teaching, displays high-spiritedness in teaching and dedicates more time to students as individuals or groups as well as the subject being taught [10]. The teacher's professional commitment also plays an important role in determining how long the teacher wishes to remain in the profession [11].

The professional commitment proposed by Aranya, Pollock, & Amernic [12] is consistent with the definition by Morrow [13] which states that commitment to the profession is the strength of identification with the involvement of individuals in the organization. According to a statement O'Reilly & Chatman [14], teacher's professional commitment is the psychological feeling felt by an individual in an organization. It illustrates the extent to which individuals adopt the characteristics of the organization and have the feeling that the individual is part of the organization.

There are several concepts that suggest a commitment to the profession - the process of socialization into the profession and individual attitudes towards the profession [15]; the development of individual goals to achieve the purpose of the profession [16]; or that the teachers' commitment to the profession closeness to the profession or occupation, associated with personal identification and satisfaction as a teacher [7]. The teacher's professional commitment is important because it allows a teacher to develop the necessary skills and have a successful career, regardless of school or teacher organization at work.

Blau [15] noted that teacher's professional commitment is one's attitude toward his profession as a professional calling in life. Somech and Bogler [7] add that the teacher's professional commitment is associated with personal identity and sense of satisfaction. According to Meyer, Allen and Topolnytsky [17], individuals may choose to direct their emotional energy to their profession. There are at least two reasons for that; firstly, is that they will be participating in their professional associations. Secondly, by focusing on the profession, the teacher seeks to increase professional skills, knowledge and ability to improve the quality of work.

2.2 Procedural Justice

Procedural justice is assessed by comparing the process one experiences to several generalized procedural rules. The rules include consistency, bias suppression, accuracy of information, representation and ethicality [18]. Procedural justice refers to the fairness of procedures used in the organization to make a decision [19]. Procedural justice is also an

opportunity for the employee involvement in decision making [20]. Procedural justice has been defined as the perceived fairness of the means, or procedures, used to determine outcomes [21]. Perception of procedural fairness is determined by the results of the organization in designing procedures. If procedures are considered fair use, employees will reciprocate by showing satisfaction, trust, and commitment at a high level [22].

Greenberg & Colquitt [23] states that there are six criteria that define the practice of procedural fairness in an organization. These include: consistency, free from bias, accuracy of information, reparability, feel represented and high sensitivity to ethics. Procedures should be consistent across time and performed similarly, regardless of who is involved, especially in the distribution of resources. Every procedure and decisions taken should be based on valid information and deserve to be trusted. Greenberg [24] reported that medium and high outcomes were fair, regardless of the procedure used, but that low outcomes were only fair when they were based on a fair procedure.

2.3 Distributive justice

In this study, distributive justice refers to the outcome (e.g. salary or promotion in field studies, reward in laboratory studies, classes within schools) and the teacher's opinion about the feasibility of the results and their contribution [18]. Cohen [25] stated that the distribution of justice should be based on four dimensions: receivership, receiver unit, functional method and standard evaluation. Distributive justice exists to the extent that the allocation of an outcome is consistent with the goals of a particular situation, such as maximizing productivity or improving cooperation, because the most common goal during most distributive justice research has been maximizing productivity; most research focused on the equity rule [18].

2.4 Role of Distributive and Procedural Justice

Greenberg [26] states organizational justice is a concept that expresses employees' perceptions about the extent to which they were treated fairly in organizations and how such perceptions influenced organizational outcomes such as: commitment and satisfaction. Individuals with a high-level perception of organizational procedural justice also have a high level of commitment to the organization [21]. Various studies about procedural justice and distributive justice relates to commitment by members of the organization [32].

Several studies about how procedural justice and distributive justice relates in education are also related to commitment. Yavuz [3] studied how procedural justice, distributive justice and interactional justice relate with teachers' commitment. Other studies have also shown that organizational justice helps to predict teacher's commitment [33-36].

3. Materials and Methods

3.1 Participants

The teachers in this study were sampled from a random sample of schools located in Yogyakarta, Indonesia. Out of 400 teachers from 20 middle schools, 346 (77%) returned usable questionnaires. Gender representation of respondents was 41.2% male and 58.8%

female. Respondents' age and teaching experience was averagely 45 years and 15 years respectively. Five percent have diploma degrees, 90% have bachelor degrees and the remaining 5% have master degrees.

3.2 Instruments

A quantitative questionnaire using a 5-point Likert-type scale was administrated to the respondents who were instructed to refer to their current school to fill out the questionnaire that asked a range of questions about their perceptions and feelings on their profession, school commitment, procedural justice and distributive justice.

3.3 Measurements

3.3.1 Professional Commitment

To measure teachers' professional commitment, we adapted Lodahl and Kejner's [37] questionnaire, which was specifically adjusted to suit the educational setting context. This instrument consists of 14 items and focuses on teachers' involvement in the present job and on the importance of the work as a teacher in general. Sample items include: "I feel depressed when I fail at something connected with my profession as a teacher" and "I am very much involved personally in my teaching profession". The reliability level of alpha was .85. The respondents used a 5-point Likert-type scale to indicate their agreement (1 = strongly disagree, 3 = neither disagree nor agree, and 5 = strongly agree) with each of the items in the scale. The scale was measured by the mean response to the 14 items.

3.3.2 Procedural Justice.

Six items of the procedural justice measure ($\alpha = .75$) developed by Colquitt [18] were used to assess perceptions of procedural fairness. Sample items include "Procedures designed by the school to collect accurate information necessary for making decisions" and "Procedures designed by the school have all sides affected by the decision represented. The respondents used a 5-point Likert-type scale to indicate their agreement (1 = strongly disagree, 3 = neither disagree nor agree, and 5 = strongly agree) with each of the items in the scale.

Table 1:
Descriptive statistics and correlations

No.	Variable	Mean	s.d	1	2	3
1	Procedural Justice	3.88	0.50	1.00	.546**	.297**
2	Distributive Justice	3.76	0.60		1.00	.268**
3	Teacher's Professional commitment	3.99	0.43			1.00

** $p < .01$

Multiple regression analysis was employed to identify the influence of procedural justice and distributive justice to teacher's professional commitment (see Table 2). Table 2 shows that two predictor variables, procedural justice and distributive justice were statistically significant predictors of teacher's professional commitment and explained 10.4% of its variance ($F_{(343)} = 19.924, p < .01$).

Table 2:

Regression coefficients value for procedural justice and distributive justice to teacher's professional commitment.

Variable	B	SE	β	t
Procedural Justice	.429	.122	.215**	3.518
Distributive Justice	.303	.122	.151*	2.474

R= .323, R² = .104, F = 19.924**, **p < .01, *p < .05

3.3.3 Distributive Justice.

Five items of the distributive justice measure ($\alpha = .76$) developed by Colquitt [18] were used to assess perceptions of outcome fairness. Sample items include "Principal awards me for the work I have done well" and "Principal awards me for the stresses and strains of my job". The respondents used a 5-point Likert-type scale to indicate their agreement (1 = strongly disagree, 3 = neither disagree nor agree, and 5 = strongly agree) with each of the items in the scale.

4. Result

Means, standard deviations and inter-correlations for the research variables are shown in Table 1. An examination of the means of teacher's professional commitment that received the highest scores were status ($M = 3.99$). The lowest average score was ascribed to distributive justice ($M = 3.76$). The Pearson correlation matrix revealed that procedural justice ($r = .297$) and distributive justice ($r = .268$) were significant ($p < .01$) and positively correlated with teacher's professional commitment. In addition, the correlation between procedural justice and distributive justice was positive and significant ($r = .546$).

5. Discussion

The findings regarding the means of procedural justice, distributive justice and teacher's professional commitment appear to be consistent with previous studies. Spreitzer & Mishra [38] for example, found that procedural justice ($M = 3.61$; s.d = 1.30), in the present study, we found very similar results procedural justice ($M = 3.88$; s.d = 0.50). Zeinabadia & Salehib [36] found that distributive justice ($M = 3.86$; s.d = 0.74) amongst teachers, in the present study, we found very similar results for distributive justice ($M = 3.76$; s.d = 0.60). A study by Bogler & Somech [39] found teacher's professional commitment ($M = 3.40$; s.d = 0.59); in the present study, we found very similar results for teacher's professional commitment ($M = 3.99$; s.d = 0.43).

Table 2 show that the predictive variables together correlate significantly with teachers' professional commitment scores ($R = 0.323$, $R^2 = 0.104$, $p < 0.01$). It also shows that the predictive variables together account for 10.4% of the total variance in teachers'

professional commitment. Results of this study therefore show that procedural justice and distributive justice significantly predicted teacher's professional commitment. This results, according to a similar study by Cohen & Keren [40] show that procedural justice and distributive justice influence teacher's commitment. According to other research results, procedural justice and distributive justice are some of the most important causes of teacher commitment [3, 41, 42].

Findings regarding the significant positive correlation between procedural justice & distributive justice confirm previous research too such as Cohen & Keren [40]. The results of the present study may imply that there is no inherent conflict between procedural justice and distributive justice [18]. Results of the standardized regression coefficients (β) and *t*-test also show the influence of procedural justice ($t = 3.518$, $\beta = .215$, $p < .01$) to be more significant than distributive justice ($t = 2.474$, $\beta = .151$, $p < .05$) on teachers' professional commitment. These results are consistent with the findings of the study by Yavuz [3].

6. Conclusions and implications

This study primarily investigated the relationship between procedural justice, distributive justice and teacher's professional commitment. The findings demonstrate that a number of justices have an impact on teacher's professional commitment, but a number of limitations should be considered when interpreting these findings. Among these are: since all measures used are self-reports, common method variance is a problem, as well as the effect of social desirability respondents [39]. Although self-report data are commonly used to measure individual self-perception [43], one should remember that they may not reflect actual perception of respondents. Next, even in selecting the sample schools, care has been taken in relation to the representation schools in urban, suburban and rural areas that serve a variety representative of the population of teachers in Yogyakarta with regard to gender, time served, age and education. These cannot be generalized for all secondary schools in Yogyakarta.

One of the important contributions of the present study is that it underscores the relative effects of justice dimensions on the important outcomes of teacher's professional commitment in the school. The teacher's professional commitment is considered a major determinant of organizational effectiveness [44]. It also plays an important role in determining how long the teacher wishes to remain in the profession as suggested by Tyler & De Cremer [45]. Furthermore, teachers who perceive themselves as professionals or have the opportunity to develop their professional could contribute more to the school and to improve their profession. Principals should always know the sense and desire of teachers to professional development. Finally, is on the major finding of this study - organizational justice relates to teachers' commitment. Principals must create and keep a sense of justice in school so that teachers are committed. Thus, the Ministry of Education, as the centralized office, and its operational units at the local levels, should encourage participation of principals in seminars and programs that stress teachers' professional growth and organizational justice in schools.

Possible extensions of this study could be to examine the effects of other variables, trust and altruism [46] or gender, leadership, and goal setting as mediating or moderating variables in

the relationship between organizational justice or its subscales; and school outcomes, using either those examined in this study or others. In addition, since the current study was conducted in middle schools, it may be worthwhile to investigate elementary schools or universities to determine whether the results presented here reflect the general situation of teachers at all levels.

REFERENCES

- [1] W.K. Hoy and C.J. Tarter, Organizational justice in schools: no justice without trust. *International Journal of Educational Management*, 2004. **18**(4): p. 250-259.
- [2] J. Greenberg and R. Cropanzano, *Advance in organizational justice*, Stanford, CA: Stanford University Press, 2001.
- [3] M. Yavuz, The effects of teachers' perception of organizational justice and culture on organizational commitment. *African Journal of Business Management* 2010. **4**(5): p. 895-701.
- [4] L. Crosswell, *Understanding teacher commitment in times of change*. 2006, Unpublished EdD thesis submitted to Queensland University of Technology, Brisbane, Australia.
- [5] R.M. Ingersoll, et al., *Teacher professionalization and teacher commitment: A multilevel analysis*, National Center for Education Statistics, Washington: U.S. Department of Education Office of Educational Research and Improvement, 1997.
- [6] R. Killen, *Effective teaching strategies: Lessons from research and practice*, Melbourne, Australia: Thomson Social Science Press, 2006.
- [7] A. Somech, and R. Bogler, Antecedents and consequences of teacher organizational and professional commitment. *Educational Administration Quarterly*, 2002. **38**(4): p. 555-577.
- [8] R.J. Vandenberg, and V. Scarpello, A longitudinal assessment of the determinant relationship between employee commitments to the occupation and organization *Journal of Organizational Behavior*,, 1994. **15**(6): p. 535-547.
- [9] K. Lee, J.J. Carswell, and N.J. Allen, A meta-analytic review of occupational commitment: Relations with person- and work-related variables. *Journal of Applied Psychology*, 2000. **85**(5): p. 799-811.
- [10] N.A. Razak, I.G.N. Darmawan, and J.P. Keeves, Teacher commitment, in *International Handbook of Research on Teachers and Teaching*, L.J. Saha and A.G. Dworkin, Editors. 2009, Springer Science + Business Media. p. 343-360.

- [11] D. De Cremer, and T.R. Tyler, The Effects of Trust in Authority and Procedural Fairness on Cooperation. *Journal of Applied Psychology* 2007. **92**(3): p. 639-649.
- [12] N. Aranya, J. Pollock, and J. Amernic, An Examination of Professional Commitment in Public Accounting. *Accounting, Organizations and Society*, 1981. **6**: p. 271-280.
- [13] P.C. Morrow, The theory and measurement of work commitment, Greenwich, CT: JAI Press Inc, 1993.
- [14] C. O'Reilly, and J. Chatman, Organizational commitment and psychological attachment: the effects of compliance, identification, and internalization on pro-social behavior. *Journal of Applied Psychology*, 1986. **7**: p. 492-499.
- [15] G. Blau, The measurement and prediction of career commitment. *Journal of Occupational Psychology*, 1985. **58**: p. 277-288.
- [16] S.M. Colarelli and R.C. Bishop, Career commitment: Functions, correlates, and management. *Group and Organization Studies*, 1990. **15**(2): p. 158-176.
- [17] J.P. Meyer, N.J. Allen, and L. Topolnytsky, Commitment in a changing world of work. *Canadian Psychology*-, 1998. **39**: p. 83-93.
- [18] J.A. Colquitt, On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 2001. **86**(3): p. 386-400.
- [19] B. Erdogan, M.L. Kraimer, and R.C. Liden, Procedural justice as a two-dimensional construct: An examination in the performance appraisal context. *Journal of Applied Behavioral Science*, 2001. **37**: p. 205-222.
- [20] M.A. Konovsky, Understanding procedural justice and its impact on business organizations. *Journal of Management*, 2000. **26**: p. 489-512.
- [21] R. Folger, and M.A. Konovsky, Effects of procedural and distributive justice on reaction to pay raisedecisions. *Academy of Management Journal*, , 1989. **32**(1): p. 115-130.
- [22] M.A. Konovsky, and R. Cropanzano, Perceived fairness of employee drug testing as a predictor of employee attitudes and job performance. *Journal of Applied Psychology*, 1991. **76**: p. 698-707.
- [23] J. Greenberg, and J. Colquitt, *Handbook of organizational justice*, New Jersey: Lawrence Erlbaum Associates, 2005.
- [24] J. Greenberg, Organizational justice: Yesterday, today, and tomorrow. *Journal of Management*, 1990. **16**(2): p. 399-432.

- [25] R.L. Cohen, Distributive justice: Theory and research *Social Justice Research*, 1987. **1**(1): p. 19-40.
- [26] J. Greenberg, *The quest for justice on the job*, Thousand Oaks, CA. : Sage, 1986.
- [27] R.H., Moorman, Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employee citizenship? . *Journal of Applied Psychology*,, 1991. **76**(6): p. 845-855.
- [28] T. Tang, and L. Sarsfield-Baldwin, Distributive and procedural justice as related to satisfaction and commitment. *S.A.M. Advanced Management Journal*, 1996. **61**(3): p. 25-31.
- [29] D.B. McFarlin, and P.D. Sweeney, Distributive and procedural justice as predictors of satisfaction with personal and organizational outcomes. *The Academy of Management Journal*, 1992. **35**(3): p. 626-637.
- [30] Y. Cohen-Charash, and P.E. Spector, The role of justice in organization: A meta-analysis. *Organizational Behavior and Human Decision Processes*, 2001. **86**: p. 278-324.
- [31] J.Y.Y. Kwong, and K. Leung, A moderator of the interaction effect of procedural justice and outcome favorability: importance of the relationship *Organizational Behavior and Human Decision Processes*, 2002. **81**(2): p. 278-299.
- [32] Y. Cohen-Charash, and P. Spector, The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, 2001. **86**(2): p. 278-321.
- [33] R. Cropanzano, D.E. Bowen, and G. S.W, The management of Organizational Justice. *Academy of Management Perspectives*. *Academy of Management Perspective*, 2007: p. 34-48.
- [34] O. Shapira-Lischshinsky, Israeli male versus female teachers' intent to leave work. *Gender in Management: An International Journal*, 2009. **24**(7): p. 543-559.
- [35] O. Shapira-Lishchinsky, and Z. Rosenblatt, Organizational ethics and teachers' intent to leave: An integrative approach *Educational Administration Quarterly*, 2009. **45**(5): p. 725-758.
- [36] H. Zeinabadia, and K. Salehib, Role of procedural justice, trust, job satisfaction, and organizational commitment in organizational citizenship behavior (OCB) of teachers: Proposing a modified social exchange model. *Procedia - Social and Behavioral Sciences* 2011. **29**: p. 1472-1481.
- [37] T.M. Lodahl, and M. Kejner, The definition and measurement of job involvement. *Journal of Applied Psychology*, 1965. **49**(1): p. 24-33.

- [38] G.M. Spreitzer, and A.K. Mishra, To stay or to go: voluntary survivor turnover following an organizational downsizing. *Journal of Organizational Behavior*, 2002. **23**: p. 707-729.
- [39] R. Bogler, and A. Somech, Influence of teacher empowerment on teacher organizational commitment, professional commitment and organizational citizenship behavior in schools. *Teaching and Teacher Education*, 2004. **20**: p. 277-289.
- [40] A. Cohen, and D. Keren, Individual Values and Social Exchange Variables: Examining Their Relationship to and Mutual Effect on In-Role Performance and Organizational Citizenship Behavior. *Group Organization Management*, 2008. **33**(4): p. 425-452.
- [41] A.A. Chughtai, and S. Zafar, Antecedents and consequences of organizational commitment among Pakistani university teachers. *Applied H.R.M. Research*, 2006. **11**(1): p. 39-64.
- [42] K. Yilmaz, Secondary public school teachers' perceptions about organizational justice. *Educational Sciences: Theory & Practice*, 2010. **10**(1): p. 603-616.
- [43] P.E. Spector, Using self-report questionnaires in OB research: A comment on the use of a controversial method. *Journal of Organizational Behavior*, 1994. **15**: p. 385-392.
- [44] A. McMahon, A cultur perspektive on school effektiveness, school improvement and teacher professional development. In D. Hopkins & D. Reynolds (Eds.), *School effectiveness, school improvement*. London: Continuum International Publishing Group. 2004.
- [45] T.R. Tyler, and D. De Cremer, Process based leadership: Fair procedures, identification, and the acceptance of change *Leadership Quarterly*, 2005. **16**: p. 529-545.
- A.G.K. Abdullah, T.K. Ngang, and A. Ismail, Keadilan organisasi, kepercayaan dan altruisme. *Jurnal Pendidik dan Pendidikan*, 2007. **22**: p. 75-92.

EDUCATIONAL RESEARCH POLICY TEACHER TRAINING DEVELOPMENT: Preparing Teacher's for Early Childhood Programs of Computer Assisted Instruction in Indonesia

LulukAsmawati

Lecturer's at PGPAUD FKIP and Instructional Technology Programs Postgraduate
Sultan AgengTirtayasa State University
nialuluk@yahoo.com

Abstract

The aims of paper the framework includes the six components of in an early childhood teacher education programs computer assisted instruction: (1) recruitment and selection: the purpose of selection, standars an criteria, professional jugdment, legal and ethical consideration, (2) general education, (3) professional foundations, (4) instructional knowledge, (5) practice: role of the cooperating teacher, role of the university supervisor, and (6) program modification. The number of early childhood education programs in Indonesia has increased significantly over the last few years. Along with this increase. There is an increase in the number of staffs them, including teachers, assisstants, and aides. These early childhood personnel are prepared in two types of programs. Teachers who are hired in public prekindergartensschool, kindergartens, and primary classes are prepared in four and five year programs in colleges and universities. Teachers in child care programs along with assisstants and aides are in one and two year programs in community colleges and in vocational programs in high schools. Four year institutions also support the continued professional development of teachers by offering graduate degree and in service training programs. Teacher inservice programs is based on six teacher roles: (1) diagnostician, (2) curriculum designer, (3) organizer of instruction, (4) manager of learning, (5) counselor advisor, (6) decision maker. Finally, I need to make a plea for developing increased research about early childhood teacher education programs of computer assisted instruction. As more resources are provided to increase the preparation of early childhood teachers, increased research activities in this area also need to be supported more reliable base of knowledge about the preparation of early childhood teacher's computer assisted instruction.

Keywords: teacher's for early childhood, programs computer assisted instruction

INTRODUCTION

Teacher education programs plan experiences designed to allow teacher candidates to acquire the knowledge, skills, and attitudes needed to teach. These experiences are founded on research, theory, and practice. Ethical considerations also influence these program. In order to codify the characteristics of early childhood teacher education in Indonesia the preparation of early childhood teachers is described here using a framework developed by Saracho and Spodek (1983:412). The framework includes the six components of an early childhood teacher education program: (1) recruitment and selection: the purpose of selection, standards and criteria, professional judgment, legal and ethical consideration, (2) general education, (3) professional foundations, (4) instructional knowledge, (5) practice: role of the cooperating teacher, role of the university supervisor, and (6) program modification.

BASIC THEORY AND DESIGN

Recruitment and selection. The reform of teacher education has focuses on recruiting and selecting teacher education candidates that have the attributes necessary for becoming outstanding teachers. A great deal of attention has been directed toward identifying these characteristics in candidates. Ryan (1976: 105) identified essential qualities for teachers, including warmth, enthusiasm, and attitude, flexibility, ability to enjoy and encourage children. Katz (1969: 28) explain patience, maturity, energy, encouragement of individual responsibility, and ingenuity in providing teaching and software programs. Almy (1975:10) prospective teachers should also be motivated to teach and hold appropriate attitudes, including an openness to new idea, some tolerance for ambiguity, an interest in untraveling cause effect relationships, and an ability to think and organize information in multidimensional categories. Individuals who are already working with young children, for example, could be recruited into teacher education programs employ many people from diverse socioeconomic and cultural backgrounds, well motivated and would be prime candidates for teacher education programs.

Applegate (1987:17) explain for five issues on the selection of teacher candidates: (1) purpose of selection, (2) standards and criteria, (3) professional judgment, and (4) legal and ethical considerations, The purpose of selection is to determine an individual's ability to succeed in teaching. Since a teacher preparation involves a lengthy and complex process, selection criteria should attend to developmental considerations. For example, the characteristic essential to succeed in college course work may not be the same as those

essential to succeed in student teaching. Selection criteria should anticipate later stages and consider the demands of all elements. Sometimes this is done through a continued review which selects students for each stage of the program. Standards and criteria ranged from applying several demanding and explicit criteria to using: (1) graduation from high school, (2) a formal application, (3) written recommendations, (3) speech tests, (4) informal written language tests or writing samples, (5) physical examinations, (6) psychological examinations, (7) standardized tests to determine proficiency in basic school. Standardized tests are also used in selecting candidates to judge in basic skills: (1) The Pre Professional Skills Test, (2) The Scholastic Aptitude Test, and (3) The National Teachers Examination, (4) Teacher performance, (5) personality development, (6) leadership traits. Professional judgment are: (1) interest, (2) attitudes toward professors, (3) time, (4) efforts, and cost, (5) personal background, (6) personal qualities, (7) individual traits, (8) perceived occupational status. Teacher educators judgment as members of committees reviewing the candidates credentials. The collective wisdom of shared decision making is a strength of this approach. Legal and ethical considerations admission to a teacher educators recognize the complexity of teacher candidate selection and improve existing procedures. Applegate (1987:415) selecting early childhood teacher educator candidates: (1) more caring, more concerned with nurturance, (2) requiring different communications skills, (3) encompassing a broader range of tasks related to children, parents, community agencies.

General education. General education is basic to all teacher education since teachers should be well educated individuals. Early childhood education is drawn from various disciplines such as language, social studies, mathematics, science, aesthetics, and humanities.

Professional foundations. Laska in Spodek (1993: 416) Professional foundations are concerned with those aspects of anthropology, economics, history, philosophy, psychology, politics, and sociology, linguistics. Foundations courses present the world differently from its practical reality. Teacher candidates learn to restructure their views of children, school and subjects to analyze Indonesian educational patterns in relation to democratic ideals, humanized vision of education of society and practical education system.

Instructional knowledge. Schulman (1986:27) suggests that these be embedded in different forms of knowledge. Content knowledge is the degree and order of knowledge in the teachers mind. Content knowledge can be represented using Bloom's cognitive taxonomy or Gagne's varieties of learning. Pedagogical content knowledge includes knowledge about teaching subject matter. It is composed of important topics in the teacher's subject area which are integrated with teaching strategies to presentation of important concepts, the most powerful analogies, illustrations, examples, explanations, and demonstrations. Pedagogical content knowledge also includes strategies to individualize the

instruction from easy to difficult topics. For example, it must consider students of different abilities, ages, and backgrounds. Curricular knowledge is knowledge of the education program, which includes instruction in specific subjects and topics at a specific level as well as the use of a special curriculum or program materials in particular circumstances. Saracho in Spodek (1993:417) identified 6 roles of the teacher that could provide another way of determining the professional knowledge component of the program: (1) diagnostician. Teachers need to assess children's strengths and needs in order to plan the proper match of successful learning experiences for children, (2) curriculum designer. Teacher develop curricula for young children within their capabilities based upon theories and practices of early childhood education as well as the learnings which community considers important, (3) organizer of instruction. Teacher use their outcomes from long range and short range planning to organize the classroom activities to achieve the educational goals. Teachers inquire about appropriate available resources and make these resources to their best use of them, (4) manager learning. Teachers facilitate learning by creating a learning environment and offering learning experiences which are relevant and of interest to the children, (5) counselor/advisor. Teachers continuously interact with children and provide them with care, emotional support and guidance as well as instruction. Teachers also help children to learn socialization skills, (6) decision maker. Teachers make a range of decisions about children, materials, activities, and goals. Some are instantaneous decisions, while other reflect decisions as teachers plan, select, and implement from among alternatives. The summarized teacher's performance of each role requires that teachers of young children acquire a range of knowledge, skills, and attitudes (see table 1,1).

Table 1.1. Summary of Teacher education programs plan experiences designed to allow teacher candidates to acquire the knowledge, skills, and attitudes (Spodek, 1993: 418-419)

ROLES	KNOWLEDGE	SKILLS	ATTITUDES
Decision maker	Curriculum of early childhood education Content and methods of different subject areas Child development Theories of play	Organizing the classroom Planning the curriculum Matching materials and methods to children Meeting individual needs Obtaining techniques to work with children Knowing how to use play as a tool of learning	Community's values Behavioural style Play as educational

	Recent research, development, and ce in early practical childhood education Role of the teacher	Acquiring research skills Teaching duties, responsibilities, obligations, functions	Objectives Ethics, attitudes, ideological position, self image, Membership and reference group, commitment to the profesions
Organizer of instruction	Child development-process of development and learning Evaluating methods	Knowing how certain procedures affect children and teachers Integrating information within some structure to give meaning Developing materials Operating equipment Locating resources for a variety of materials Working with other adults in the classroom Evaluating msterials, resources, and equipment Knowing self evaluation Knowing evaluation of teaching and programs	Behavioural style Teaching style
Curriculum designer	Curriculum theory	Selecting scope, sequence, and balance Adapting content to individual differences Knowing different methods of teaching Selecting materials and equipment without	Community's values Cultural values Teacher's ideology of early childhood education

	<p>Child development theory</p> <p>Knowledge of curriculum areas (language, reading, mathematics, Social studies, etc)</p> <p>Philosophy</p>	<p>Demeaning individuals</p> <p>Planning long range and short range goals</p> <p>Establishing goals, content, and teaching technique</p> <p>Matching goals, methods, and experiences</p> <p>Knowing developmental norms to group children for appropriate experiences</p> <p>Selecting concepts from a mixture of different forms of knowledge</p> <p>Integrating knowledge with understanding</p> <p>Integrating curriculum areas and teaching practice</p> <p>Integrating activities with the different discipline</p>	<p>Ethnic groups</p> <p>Teacher's values</p> <p>Teaching style</p>
Diagnostician	<p>Child development</p> <p>Assessment techniques</p>	<p>Judging children's maturation stages, Achievement of prior learnings, behavior, and so on</p> <p>Collecting, analyzing, and interpreting data</p> <p>Becoming aware of individual skills, abilities, interests, and behavior</p> <p>Using: Sociometric scales Observation techniques</p>	<p>Concern for individual differences</p>

	Curriculum and methods	Interviews Selecting appropriate experiences, materials, and equipment Selecting activities	
Manager of learning	Psychology of learning	Creating an attractive educational environment	Awareness of individual differences such as cognitive styles, interest, and needs
Manager of learning	Curriculum theory Child development	Planning and implementing learning activities Guiding children's behavior in performing educational tasks Establishing work routines Presenting subject matter Providing educational tools and classroom displays Offering a wide range of learning alternatives Scheduling and implementing transitions	
Counselor/advisor	Child psychology Child development Sociology Anthropology	Knowing different methods of interacting Creating an environment that motivates the child's exploration and discovery Helping children make decisions Promoting children's creative growth and self-actualization	Teacher's values and priorities Accept individual differences Provide warmth and emotional support Present a sense of trust

	Philosophy Psychology of learning	Manifesting their personality in an authentic way Searching their educational and teaching values	and security Society's values
--	--	--	--------------------------------------

Practice. According Dearden in Spodek (1993: 420) there are 3 kinds of learned concepts: (1) perceptual concepts about physical objects and properties, (2) practical concepts about how people use the objects in their culture, (3) theoretical concepts which are the knowledge and understanding. Field experiences are used to integrate previous learning with emerging experiences and transform theoretical instruction into reality. The practice component should use intellectual methods to understand the nature of good practice as well as provide opportunities to improve practice. The practice component of teacher education program could include a range of field experiences including workshops, observations, practice, and student teaching. Role of cooperating teacher's need to experiment and create their own routines by technology computers.

Technology should be integrated into curriculum areas in experiences that enhance the educational process for students. Technology should facilitate instructional management for more individualized instructional and assessment. Technology should support administration for greater efficiency and focus on learning. Learning goals should be strengthened by technology use to make learning: (1) relevant, (2) appealing, (3) developmentally appropriate, (4) successful for students (Shade in Henniger, 2013: 469-471). Making a learning relevant means relating it to the world in which students live now and will live in the future. This include relating concepts to real applications, being able to think and solve problems, and working and communicating effectively with others in the same class and farther away, as in other schools and other parts of the world. Making learning appealing means arranging for learning experiences is which students get involved, that seem relevant to them, there are fun, and that help students want to be life long learners. Making learning developmentally appropriate means providing for each students developmental

stage and learning style with concept development moving from concrete, hands on experiences to abstract concepts. Making learning successful means making sure that each students experiences success and makes significant progress in learning.

Day (1994: 477) suggestions for early childhood teacher's use of technology: (1) student informational management use software to make information management more efficient. Use it to record and calculate attendance, maintain a student database create reports on students progress, create and update inventories of resources and create lesson plans, presentations, handouts, and evaluations, (2) teacher as instructor. When computer is brought in to the early childhood setting, adults will need to help children learn how to use the technology, (3) teacher as a coach. As children become more comfortable with the computer, the early childhood professional becomes move of a facilitator by providing assistance as needed and guiding children into appropriate uses of the technology in the following ways: (a) planning innovative uses for technology such as the narrative reports and addition of the assessment, (b) applying for grants, (c) helping with troubleshooting, (d) helping lead and organize staff development, (e) coordinating with site-based management and curriculum committees, (4) Teacher as model. Children should see adults using computer as well recording children's oral stories, creating charts and signs for early childhood setting, and corporating computers in to small group activities are some examples of this modeling

Program modification. Program modification is an essentials component for any teacher education program because it provides a vehicle for program improvement. Spodek (1993: 423) program evaluation identifies 3 goals of educational evaluation: (1) to foster an understanding of the educational evaluation, (2) to provide data for the correction of shortcomings, (3) to move the never ending evolution of curriculum toward a better balance among the rational, the intuitive, and the humane.

CONCLUSIONS

1. Teachers can have a long lasting influence on the young children in their classes. Teacher competence must be rooted in an understanding of children and in set of values that

- determines appropriate influences on young children. Teachers as they interact with children using computers as planner lesson plan and assessment, as instructor, as coach, and as model.
2. Programs of education and teacher education are based upon specific ideals and values, whether or not these ideals and values are made explicit. These determine the judgment of what treatments are considered worthy and what outcomes are considered worthy for each program.
 3. Program treatments can be portrayed to determine whether treatment elements are consistent with values and expected outcomes.
 4. Program outcomes can be assessed in terms of their consistency with program ideals and values as well as with the context in which the teacher is operating. Indicators of outcomes may vary for different types of programs.
 5. Programs of teacher education can be compared on common dimensions.
 6. Teacher's need training in appropriate computer use including its implementation as a tool for working with other professionals.

REFERENCES

- Applegate, J.H. 1987. *Teacher Candidates Selection: an Overview Journal of Teacher Education*, 38 (2) 2-6.
- Barroman, M.L. 1965. *Teacher Education in America*. New York: Teachers College Press.
- Day, Barbara. 1994. *Early Childhood Education: Developmentally/Experiential Teaching and Learning*. New York: Mac Millan College Publishing Company.
- Dejnozka, E.L dan Smiley, L.R. 1983. *Selective Admissions Criteria in Graduate Teacher Education Programs. Journal of Teacher Education*, 34 (1), 24-27.
- Henniger, 2013. *Educational Technology for Early Childhood Education*. New Jersey: Prentice Hall.
- Katz, L.G. 1969. *Teaching in Preschools: Roles and Goals*. Urbana: IL ERIC Clearinghouse on Early Childhood Education.
- Ryans, D.G. 1976. *Characteristics of Teachers*. Washington: American Council on Education.
- Spodek, Bernard. 1994. *Handbook Research on The Education Young Children*. New York: MacMillan Publishing Company.

A GUIDANCE MODEL FOR ART AND CULTURE TEACHERS IN IMPROVING THEIR COMPETENCE THROUGH COLLABORATION BETWEEN UNIVERSITIES AND MGMP (PROFESSIONAL SUBJECT TEACHER ASSOCIATION)

Bandi Sobandi

Arts and Education Department, Faculty of Language and Arts Education
Indonesia University of Education (UPI)
E-mail: bas@upi.edu, bsobandi@yahoo.com

Abstract

The development of Arts and Culture teachers' competency organized by LPMP, P4TK for Arts, professional associations, and MGMP has not run optimally yet. This is due to several problems such as an insufficient number of teachers, low awareness of the teachers to improve their competence, the unworkable professional organizations which can support MGMP as a potential association to develop their competence. In addition, so far the coordination among those institutions is not well established. Considering such problems, this paper aims to discuss: 1) How to plan a guidance model to coach the teachers through collaboration program between the university and MGMP Arts and Cultures in West Java?; 2) How is the implementation of a coaching model to the teachers through collaboration program conducted?; 3) How can coordinated networking among the institutions be realized to support the coaching program in developing the teachers' competence. One of the alternative solutions is planning and implementing a coaching model through collaboration between universities and MGMP to conduct coaching and training for the teachers. This effort is a strategic program giving many advantages both to the lecturers (coaches) and the teachers (participants). For the lecturers, this program gives them opportunity to implement the result of their research as fulfilling their task of Tri Dharma in community services in the form of developing materials, media and doing collaborative research, whereas for the teachers, this program may offer them good chance to increase their relevant knowledge which prepares them to be professional teachers in their subject.

Keywords: *Model, Teacher, Competence, Development, Coaching*

A. Introductions

1. Background

Teacher is a professional occupation that requires specialized skills. To conduct their job, teachers officially have a duty to educate, teach and train. Educational activities done by the teacher is to continue and develop the values for learners while teaching means to continue and develop science and technology and the arts, while training means developing skills of potential students.

However, teachers should get coaching and training which is guided by the government particularly handled by Professional Subject Teachers Association (MGMP) collaborated with Education Quality Insurance (LPMP and P4TK). By doing so, it is expected the cooperation among those institutions can be functioned optimally because at present they have not established good networking to improve the teachers' competence and extend their role as professional teachers, especially for those who graduated from different subject. Such condition lead a mismatch which gradually cause the quality decrease (Gaffar,2012: 45). Nowadays, teachers who teach Art and Culture mostly have irrelevant educational background. This case is very worrying because the teachers do not put the goals clearly including understanding knowledge, choosing appropriate approach less, learning methods, and techniques of evaluation of learning outcomes has not been well programmed.

Guidance has purposes to deliberate effort to maintain both the profession and improve the ability to enhance their performance and career as a professional teacher. Basically, the teacher should conduct their tasks to give coaching through considering relevant background and qualification. The teachers 'qualification involve improving teacher competence that includes personal, social competence, pedagogic competence and professional competence.

Career guidance teacher directed to deliver rapidly promoted dann professorship accordance with applicable rules

Based on these problems mentioned above about the model of coaching competence of Cultural Arts teachers in improving competence through collaboration between universities (course of study) with MGMPs be one right solution in the development of the teaching profession. This model provides a lucrative opportunity for both parties, scientific background sources relevant to the needs of teachers in the field.

2. Formulation Problems

Deal with the background of this study, the formulation of the problem can be drawn as follow:

- a. How to plan a guidance model to coach the teachers through collaboration between university programs and MGMPs Art and Culture in West Java?
- b. How is the implementation of a coaching models to the teachers through collaboration program conducted?;
- c. How can coordinated networking among the institutions be realized to support the coaching program in developing the teachers' competence?

B. Discussion

Teacher Competency

Competence is the ability to execute something acquired through education, and competence is shown through the rational performance. To conduct their duties, roles, and functions, teachers are required to have sufficient competence so that the presence of the teacher as an agent of change can be shared with the society. Competence is interpreted by Cowell (1988: 95-99) as an active skill/proficiency.

Howard & Johnson (2002) argued that teaching competence also includes having access to effective and current instructional strategies and skills and enabling students to engage with and achieve expected standards for a course. However, competence can be compromised if a teacher is faced with a classroom of students, for example, to teach a subject in which they may have limited discipline knowledge. Additionally, classroom and behaviour management are implicit instructional strategies for working with students and, as such, they are also likely to influence teaching competence.

Professional competence of teachers have been defined by the government as regulator education providers. Through the Indonesian Government Regulation No. 19 of 2005 Chapter VI Article 28 Paragraph 3 claim that teachers in primary and secondary education need to have certain competencies include: pedagogic competence, personality, professional, and social competence. The regulation of teacher competence is in line with formula that has been formulated by Ministry of Education and Culture (Sukmadinata, 2001: 192-193). More specifically, there are three-dimensional capabilities of teachers, namely: 1) The ability of professionals include: a) Mastery of subject matter, covering the material to be

taught and basic knowledge of the subject material, b) Mastery grounding and insight into education and teacher training, and c) control of the process of education, teacher training and student learning), 2) social skills, the ability to adjust to the demands of work and environment, 3) a personal capability which include: a) overall positive attitude toward his duties as a teacher, and the overall situation of education, b) understanding, appreciation, and performance values that her teachers have some requirements: c) attempt to make themselves considered as a role model and example for the students.

Career guidance for teacher directed to deliver a rapid promotion and professorship according to applicable rules. Based on these problems, the model of coaching competence Cultural Arts teachers in improving competence through collaboration between universities (course of study) with MGMPs be one right solution in the development of the teaching profession. This model provides a lucrative opportunity for both parties, scientific background sources which are relevant to the needs of teachers in their field.

Usman (2004) distinguishing competence of teachers into two, namely professional: personal competencies and professional competences. The personal competencies include: (1) the ability to develop personality, (2) the ability to interact and communicate, (3) ability to implement guidance and counseling. While competence professionals include: (1) mastery of the educational foundation, includes (a) understand the purpose of education, (b) knowing the function of the school in the community, (c) know the principles of educational psychology; (2) master teaching materials, meaning that teachers should understand well that teach materi pelajaran. Mastery of the subject matter contained in the materials curriculum and enrichment, (3) the ability to develop programs of teaching, these capabilities include the ability to set learning competencies, developing teaching materials and develop learning strategies, and (4) ability to formulate the assessment of learning processes and outcomes.

In line with the above opinion, Marielle Anne Martinet, et. All (2011: 55) has elaborated on the core competencies of teachers consisting of professional competence: Foundations, Teaching act, Social and Educational Context and Professional identity. In detail, those four competencies are discussed as:

Foundations:

1. To act as a professional who is inheritor, critic and interpreter of knowledge or culture when teaching students.
2. To communicate clearly in the language of instruction, both orally and writtenly, using correct grammar, in various contexts related to teaching subject.

Teaching act:

3. To develop teaching/learning situations that are appropriate to the students concerned and the subject content with a view to developing the competencies targeted in the programs of study.
4. To pilot teaching/learning situations that are appropriate to the students concerned and to the subject content with a view to developing the competencies targeted in the programs of study
5. To pilot teaching/learning situations that are appropriate to the students concerned and to the subject content with a view to developing the competencies targeted in the programs of study.
6. To evaluate student progress in learning the subject content and mastering the related competencies.

Social and educational context:

7. To plan, organize and supervise a class in such a way as to promote students' learning and social development.
8. To adapt his or her teaching to the needs and characteristics of students with learning disabilities, social maladjustments or handicaps.
9. To integrate information and communications technologies (ICT) in the preparation and delivery of teaching/learning activities and for instructional management and professional development purposes.
10. To cooperate with school staff, parents, partners in the community and students in pursuing the educational objectives of the school.

Professional identity:

11. To cooperate with members of the teaching team in carrying out tasks involving the development and evaluation of the competencies targeted in the programs of study, taking into account the students concerned.
12. To engage in professional development individually and with others.
13. To demonstrate ethical and responsible professional behaviour in the performance of his or her duties.

Teacher Association of Subject Specific(MGMP)

MGMPs is an organization of professional activity for the same subject teachers from secondary junior high school SMP/MTs/SMPLB, SMA/MA/SMALB, and SMK/MAK at the district/city consisting of a number of teachers from several schools.

The implementation of organizational procedures of MGMPs include the establishment of National Development Team, Development Team Provincial level, District Level Development Team/City of, Board MGMPs, Membership and Procedures Governing MGMPs Formation and Development Association (AD) and By laws (ART). Teacher coaching process through MGMPs done to function main source comes from the elements: Teacher (members), instructor/facilitator, and other functional power. In addition to the activities supported sources MGMPs derived from the following elements: Head of School, School Supervisors, Structural Power in the Department of Education, and Laborstructural/non-structural from other agencies.

1. Plans Teacher Competency Model Development Through Collaboration Between Higher Education and MGMPs Cultural Arts

Container coaching existing teachers is Congress Subject Teacher (MGMPs) for teachers SMP/MTs/SMPLB,SMA/MA/SMALB, and SMK/MAKis still not running well and still face many obstacles. Therefore, the government through the Directorate of Professional Educators have launched guidelines for developing and executing KKG and MGMPs. The guidelines consist of three (3) books, namely: 1) Signs Development Activities KKG and MGMPs; 2) Implementation of Standard Operating Procedures and MGMPs KKG; 3) Standard Operating Procedure Education Unit Level Curriculum Development in KKG and MGMPs.

Based on interviews with chief MGMPs districts/cities of the obtained information about the type of training and coaching area number of activities that have been carried out by MGMPs as presented in Table 1.

Table 1
Types of Training Program In Improving Teachers Competence done by MGMP

No	JProgram	City/District C								
		Bandung	Bdg Barat	Garut	Subang	Ciamis	Sukabumi	Kuningan	Cianjur	Karawang
1	Workshop on Action research				v	v	v	v	v	v
2	Art Learning Model		v			v				
3	Modern Dance					v				
4	Composing Dance		v		v					
5	Developing Learning Media	v								
6	Batik Workshop		v		v	v				
7	Musical Art Wokshop		v		v	v				

Sources: Interviews with Chief MGMPs Artson March 28, 2013

The table above shows that the development activities of teachers conducted by MGMPs at distric/city networking among the colleagues to realise their program in improving their

competence. This program is supported by the Chairman of MGMPs West Java district through training and coaching program listed below (Table 2).

Table 2
Types of Training and Development Requirements
By Master Arts and Culture MGMPs

No.	Types of Program	City/Regency								
		Bandung	Bandung Barat	Garut	Subang	Ciamis	Suka-bumi	Kuning-an	Cianjur	Kara-wang
1	Socialization of Curriculum 2013	v	v	v	v	v	v	v	v	v
2	Workshop on Art and Culture Learning method	v	v	v	v	v	v	v	v	v
3	Material Development	v	v	v	v	v	v	v	v	v
4	Action Research	v	v	v	v	v	v	v	v	v
5	Training on Traditional Music								v	
6	Test and Learning Evaluation Model	v	v	v	v	v	v	v	v	v
7	Learning Media development	v	v	v	v	v	v	v	v	v
8	Workshop on craft (batik, keramik)		v	v	v	v	v	v	v	v
9	training/ workshop on Music		v							v
10	Workshop on Traditional Dance								v	v
11	Teater Art/ <i>longser</i>									v
12	Scientific Writing	v	v	v	v	v	v	v	v	v
13	FLS2N Teachers Training					v				

Resource: Interview to the head of MGMP of Art and Culture, 28th March 2013

Table 2 shows the material needed teachers and MGMPs through collaboration with courses in the colleges. Socialization curriculum in 2013 is required by all teachers in the district town. Approach and workshop materials on Cultural Arts teaching methods, development of teaching materials, instructional media development, and the development of arts and culture learning evaluation tools are also required by all teachers, and training and field craft art workshops (batik, ceramics). This condition is in line with the demands in the field that most teachers who teach the subject of the Art and Culture of West Java mostly background instead Arts Education.

The findings are presented in the table above are the real facts on the ground. On the basis of the needs of the planned development of a model art teacher cultural competency development in Java designed Baratakan through the stages:

- a. To coordinate with the management MGMPs Cultural Arts at the provincial and district/city;

- b. To coordinate with the Department of Education district/city;
- c. Identify needs in accordance with the information obtained from the field;
- d. Set objectives and competencies of coaching to be conducted;
- e. Develop models, materials, media and evaluation tools;
- f. Schedule and personnel who will be involved;
- g. Carrying out development activities;
- h. Evaluation of the program or activity, and
- i. Follow-up program that will be implemented.

Coaching model plan is in line with the Direktorat Profesi Pendidik (2010: 14-16) before determining that the program of activities that will be used in the implementation of KKG menu or MGMPs begins with the following: 1) Analysis need for increased teacher competence as a member of KKG or MGMPs which include professional competence, pedagogical, and social personality; 2) The results of the needs analysis compiled program priorities as outlined in the annual and semester schedule; 3) There are three types of programs that can be designed for activities in KKG and MGMPs, the general program, the core program (consisting of regular programs and program development) and supporting the program. The program includes detailed a number of activities for each meeting; 4) Program needs analysis results poured in schedule of meetings for the year and at least the 12 activities as outlined in the 12 meetings in a year, and is made possible programs and activities organized by Team Special/caretaker, but after the program and activities to materialize, it needs to be communicated by the Special Teams/caretaker to all members of the group.

Of the two models lies in the problem of planning the implementation of organizational mechanisms. Teacher coaching competency models developed by the cultural arts program of study undertaken on the initiative of courses in realizing community service, while the model of the activities carried out by MGMPs usually begins initiative to mengeleng chairman or member is mandated activities.

2. Implementation of Teacher Competency Model Development Through Collaboration Between Universities with Arts MGMPs

Implementation model of coaching competence of teachers through collaboration between universities and MGMPs Cultural Arts is one of the alternative offer that may be made by the college to carry out their work through community service activities. It is realized considering the model of coaching competence of teachers by the government through the Education Quality Assurance Agency (LPMP) in the form MGMPs empowerment program in Elementary and Secondary Education level (junior and senior) in its implementation has not been touched all walks of teachers because of the number of

teachers that much so not all teachers have limited opportunities. Availability of block-grant funds disbursed by the government to assist teachers in developing and implementing a variety of programs and activities related to the educational process (in particular the learning process and manajemen) has not been utilized by MGMP. A one of contributing factor is the lack of insight and initiative of the chairman and members of the MGMPs to play its role.

Traditionally, the teaching role has been one of nurturing and developing students' potential. However, teachers' work today comprises a complex mix of various factors that include teaching; learning new information and skills; keeping abreast of technological innovations and dealing with students, parents and the community. These are demanding roles and there are growing concerns about teacher well-being and competence. (Pillay, Goddard, and Wilss, 2005).

Implementation model of coaching competence of teachers through collaboration between universities (course of study) with MGMPs Cultural Arts in West Java, on the basis of partnership both disciplines. Owned course is one of the strengths and potential that can be exploited in order to develop competence Arts teacher.

Forms of collaboration that can be done by a program of study with MGMPs include: 1) preparation of training materials and forms required by the teacher; 2) Determination of the time and place of execution; 3) Determination of cost of implementation; 4) Determination of resource persons who will be involved.

Development and career coaching profession and teachers can be implemented through various forms of education and training (training) and non-training (Danim, 2010: 30). Implementation of the coaching model of teacher competence through collaborative programs with MGMPs done in the form of activities:

- a. Seminar: Discussing the orientation and nature of the problem of learning Arts and Culture;
- b. Workshop: Developing implementation plan (RPP), Constructing TOD proposal; Development of innovative learning model in the field of arts culture, strategy/method/ approach of Cultural Art, instructional media development, development of learning resources, the development of an evaluation tool, analyzing learning outcomes;
- c. FGD: Discussing the issues and look for alternative solutions in the Cultural Arts learning, provide an opportunity for teachers to share their experiences and give each other support and feedback;
- d. Simulation: Displays the results of the process penciptan artwork, such as integrated arts learning model.

e. Research: Research to do is classroom action research or other experimental research is to improve the quality of learning.

According to the chairman of the board MGMPs districts/cities in West Java, there are a number of obstacles in implementing teacher training, among others:

- a. Cultural background art teacher who comes not from arts disciplines (visual, music and dance)
- b. Availability of resource persons to conduct activities seen as less
- c. Type of training that is the or etically less desirable teacher, the teacher is more interested in training that is practical.
- d. Location teachers are scattered in various areas to difficult to collect teacher
- e. Opportunity for participants to follow the activities are limited by quota
- f. Support/permission from the principal limited

2. How Can The Institutions among Coordinated Networking be Realized to Support the Coaching Programs in Developing the Teachers' Competence

Model of coaching competence of teachers who do this can be held properly if the cooperation of various parties, in this case the government (Provincial Education Department and district/ city), the participation of officers and members from the Cultural Arts MGMPs Provincial/district town in West Java, partisipasi professors as resource persons involved in the activity.

Revitalization coaching teachers through MGMPs According to the Direktorat Profesi Pendidik(2010: 5-6) are expected to get results: namely: a) broaden their horizons and knowledge teacher in various things, such as the preparation and development of syllabi, Learning Programme Plan (RPP), preparing teaching materials based Technology Information and Communication Technology (ICT), discusses the elusive essential materials, strategies/methods/ approaches/learning media, learning resources, minimum completeness criteria, remedial learning, test items for various needs, analyzing learning outcomes, develop programs and enrichment, and discuss various problems and find alternative solutions, b) provide an opportunity for teachers to share their experiences and give each other support and feedback c) improving the knowledge, skills, and attitudes and adopt a more innovative approach to learning for teachers; d) empower and assist teachers in perform the duties of teachers in schools in order to improve learning in accordance with the standards; e) changing the work culture and develop the professionalism of teachers in ensuring the quality of education; f) improving the quality of education and the learning process is reflected in improved student learning outcomes in order to realize the service

quality education; g) develop activities mentoring dari junior senior teacher to teacher, and h) increasing teachers' awareness of the problem of learning in the classroom that have not recognized and not well documented.

Coaching competence of teachers is done through collaboration between universities and MGMPs has the benefit of various parties including:

a) For Lecturers

Through this program, the faculty has direct experience in developing competence in the field of science teachers profesionalise. In addition to gaining experience in running dedication, this program is also a land that is conducive to the material used in the research activities. Finally, the material is conveyed through the devotion and reduced through research into the source or base material to develop learning materials on campus.

b) For Studies Program

Through competency development activities of teachers, courses to obtain information about the various permasalahan that occur in the field. Such findings can be used as an ingredient in efforts to improve the curriculum and learning. Forms of development activities also have benefits for the university in an effort to improve the imaging institute in society.

c) For Teachers

Development of teacher competence can enhance teachers' abilities in performing professional duties, such as:

- Increased competence of teachers in preparing lesson plans, teaching materials, and assessment tools
- Increased competence of teachers in learning activities, Innovative, Creative, Effective, and Fun (PAIKEM).
- The results of coaching will assist teachers in collecting documents that portfolios can be used for the certification process, functional promotion of teachers, and the recognition of learning outcomes.
- Optimization of the role of the board members or organizations in accordance with the teaching profession diampunya field.

d) For Schools

Benefits gained these schools:

- The creation of a conducive atmosphere for schools to implement the curriculum and the quality of learning
- Ease of management participation in education and training of teachers in MGMPs can minimize the negative impact of teachers often leave the task of teaching because of participation in training.

e) For MGMPs

The realization of a vehicle coaching teachers of subjects that can be used as a kind of means of communication, coaching, and professional improvement and career teachers are trusted.

f) For the Government, Provincial Government and Regency/City Government

Available models and the creation of teacher professional development professional organizations to improve the quality of learning.

D. Conclusion

Art and Culture teacher coaching competence is a necessity in order to improve teachers' abilities in performing tasks, and roles, and function. Model coaching organized by the government, professional associations, and MGMPs which had not been optimal. One solution could be done alternative yang college is through direct development activities for teachers Cultural Arts.

Model of teacher competence development plans through collaboration between universities and MGMPs Cultural Arts in West Java is done through the following phases: coordination with officials MGMPs Cultural Arts at the provincial and district/city, coordinating with the Department of Education district/city; Identify needs; formulate objectives and competencies coaching to be done; Develop models, materials, media and evaluation tools; Establish schedules and personnel who will be involved; Conducting coaching activities; evaluation program or activity, and follow-up program that will be implemented.

Implementation model of coaching competence of teachers through collaboration between universities and MGMPs Cultural Arts in West Java is increasingly collaborative in

terms of: 1) Preparation of training materials and forms required by the teacher; 2) Determination of the time and place of execution; 3) Determination of cost of implementation; 4) Determination of resource persons who will be involved.

Model of coaching competence of teachers through collaborative programs with MGMPs done in the form of activities such as: seminars, workshops, focus group discussions, simulations and other activities.

Process of institutional coordination and cooperation in supporting teachers' competence development programs to realize the activities carried out on the basis of a partnership that benefits both parties.

This effort is a strategic vehicle that can benefit both the college and MGMPs. For university, the lecturers can implement one form of a tri dharma college community service in the form of the development of learning materials, media, tools and research. Model evaluation is considered effective because there is relevance of knowledge among faculty with similar studies teachers. While teachers will have meaningful input in the form of knowledge and technical skills in the field.

E. References

Danim, S. *Profesionalisasi dan Etika Profesi Guru*, Bandung: Alfabeta.

Direktorat Profesi Pendidik, *Rambu-Rambu Pengembangan Kegiatan KKG dan MGMP*. Jakarta: Ditjen PMPTK Direktorat Jenderal Pendidikan Tinggi Kemendiknas, 2010.

-----, *Prosedur Operasional Standar Penyelenggaraan KKG dan MGMP*, Jakarta: Ditjen PMPTK Direktorat Jenderal Pendidikan Tinggi Kemendiknas. 2010.

Gaffar, M. F., *Dinamika Pendidikan Nasional, Isu, tantangan dan Persepektif Masa Depan*. Bandung: UPI Press, 2012.

Howard, S., & Johnson, B. Resilient teachers: Resisting stress and burnout. Proceedings of the Australian Association for Research in Education Conference, *Problematic Futures: Education Research in an Era of Uncertainty*, 1-5 December 2002, electronic papers. (2002), Retrieved 30 September 2004 from: <http://www.aare.edu.au/02pap/how02342.htm>

Marielle Anne Martinet, at all, *Teacher Training, Orientations Professional Competencies*, Gouvernement du Québec: Ministère de l'Éducation, 2001.

Pillay H, Goddard, R., and Wilss, L., "Well-Being, Burnout And Competence: Implications for Teachers", *Australian Journal of Teacher Education*, Vol. 30, No.2, November, 2005, pp. 22-33

Richard N. Cowell, *Buku Pegangan Para Penulis Paket Belajar* ,Jakarta: Proyek Pengembangan Pendidikan Tenaga Kependidikan, Depdikbud, 1988.

Sukmadinata, Nana, *Pengembangan Kurikulum: Teori dan Praktek*, Bandung: Remaja Rosdakarya, 2001.

Usman, M.U, *Menjadi Guru Profesional*, Bandung: Remaja Rosdikarya, 2004

TEACHERS' NEEDS to CONDUCT RESEARCH: A COMPARISON BETWEEN PRE-SCHOOL AND ELEMENTARY-SCHOOL TEACHERS*

Durri Andriani¹, Triyono², Della Raymena Jovanka³, Sukiniarti⁴

¹²³⁴Faculty of Education and Teacher Training - Universitas Terbuka
¹durri@ut.ac.id, ²triyono@ut.ac.id, ³dla@ut.ac.id, ⁴kuniarti@ut.ac.id

Abstract

Government Regulation Number 14 Year 2005 on Teacher and Lecturer and Ministry Decree Number 16 Year 2009 on Teachers' Functional Position and Credit Point are issued to make sure that teachers realize their rights and duties as professional. One of many indicators of professional teachers is ability to conduct research to enhance learning process. Many research reports teachers' constraints in conducting research which generally rooted from lacks of knowledge in research theory and skills to implement research. Since there are characteristics differences between learners in pre-school and those in elementary school, learning materials learnt and methods used in pre-school and elementary school are also different. These differences could influence teachers' understanding of research and teachers' perceptions of the important of research in their line of work. Therefore, it is important to make comparison between teachers in pre-school and those in elementary school. This paper discusses comparison between pre- and elementary-school teachers' definition of research and perception on the importance of research in their line of work. Data were gathered from 93 teachers from 40 schools in Banten and Yogyakarta areas. Both schools and teachers were randomly selected. Banten and Yogyakarta were selected purposely for this preliminary study to grasp the issues. A more thorough research is required to analyze the issues. The results show that only 27.3% the respondents representing elementary school teacher had conducted research at least once in the last five years while the percentage for pre-school teachers is (85.7%). However, both groups of the respondents have similar definitions of research, mainly point out the roles of research for improving learning quality. In term of research importance for teachers, there is a difference perceptions between respondents who conduct research and those who did not. While 79.6% of the respondent who conduct research agreed on the very important value of conducting research, only 41% of those who did not conduct research share the percpetions. Based on the results, it is found that pre-school teachres and elementary school teachers have some differences in term of their activities and perception toward research.

Keywords: comparison, elementary-school teacher, pre-school teacher, research

* The presentation of this paper is possible with Universitas Terbuka's financial assistance

Introduction

Teachers are the spearhead in educational system. The task to educate the young, although now technology could take over some of the delivery of learning materials, rests on teachers. Significant roles of teachers are acknowledged everywhere. The Indonesia government responds to this by issuing a regulation on educators as stated in the Republic of Indonesia Regulation Number 14 Year 2005. The regulation stipulates that teachers have to be professional in order to be able to fully function as agent of learning in increasing educational quality (Verse 4). In addition, Verse 20 states that in conducting their professional duties, teachers are required to:

- a. Plan and implement quality learning process, as well as assessing and evaluating learning results
- b. Increase and develop academic qualification and competencies continuously in accordance with science, technology, and arts.

It is not easy tasks for teachers to carry out all of these requirements.

One way to achieve these requirements is through conducting research. Research is an effective tool to increase teachers' professional as well as teachers' competencies. Doing research, one has to follow certain rules and be responsible. Nonetheless, it is not easy to conduct quality research. One has to poses skills and knowledge on formulating problems, determining method to be used, developing instruments, choosing samples, gathering data, analyzing data, and presenting research results.

Notwithstanding, research has not been familiar activities for teachers. Experts have found reasons on why teachers reluctant to conduct research. Reference [4] mentions six common reasons for teachers to not conducting research namely (1) laziness, (2) do not know how to do research, (3) do not know what to research, (4) afraid of exposing his limited capability in conducting research, (5) like instantious instant ways, and (6) not enough proof of benefit from the research.

It is therefore important to analyze teachers' needs to conduct research. This paper reports a study comparing needs of per-school and elementary school teachers to conduct research to increase the effectiveness of their teaching-learning process.

Method and Results

Aware of the importance of research for pre-school and elementary-school teachers, this study was carried out with objectives to gain insight on the teachers' needs to conduct quality research. Specifically, this study aims at comparing pre- and elementary-school teachers' definition of research and perception on the importance of research in their line of

work. In addition, this study also raised a question about funding necessary to conduct research in pre- and elementary school environment.

A number of 49 samples were chosen randomly from 20 pre-school facilities and another 44 samples from 20 elementary schools. The study takes place in Banten and Jogjakarta. Banten and Jogjakarta were chosen purposely to grasp the depth of the issues. A follow up research in a broader locations is necessary to allow generalization of the results. As it is, this reported study is intended to set up sound empirical data for further study of providing necessary training and education for pre- and elementary-school teachers to increase their ability to conduct research.

All of the 93 respondents were asked to fill out questionnaires specifically developed for this research. The questionnaire has open-ended and closed questions. In general, the respondents were asked to provide definition of research for teachers, rate the importance of research for their teaching activities, and funding needed to conduct quality research. Upon filling out of the questionnaires, the respondents were accompanied by researcher so that the respondents could freely ask clarification about the study. The respondents were encouraged to ask questions related to the objective and method used in the research as well as the respondents' involvement in the research.

The data were gathered between 2 – 28 April 2013. All data gathered were analyzed using descriptive statistics. Distribution of the respondents is shown in Fig.1A, 1B, and 1C.

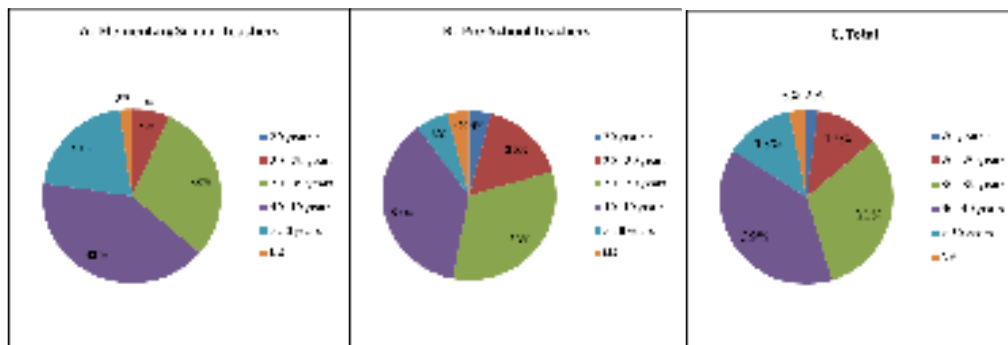


Figure 1. Distribution of Respondents' Age

The majority of respondents were 40-49 years old, 39% for total respondents, 41% for elementary-school teachers' respondents, and 37% for pre-school teachers' respondents. The youngest respondent was a pre-school teacher (16 years old) while the oldest was an elementary school teacher (57 years old). All pre-school teachers' respondents were females while 30% of elementary school teachers' respondents were male and 70% were

females. It is common to have female pre-school teachers since the profession related to young children which in social values fall under mother's care, namely female teachers.

In term of the respondents' activities in research, 85.7% of pre-school teachers' respondents states they conducted at least one research in the last five years. On the other hand, only 27.3% elementary school teachers' respondents had carried out research (Fig.2)

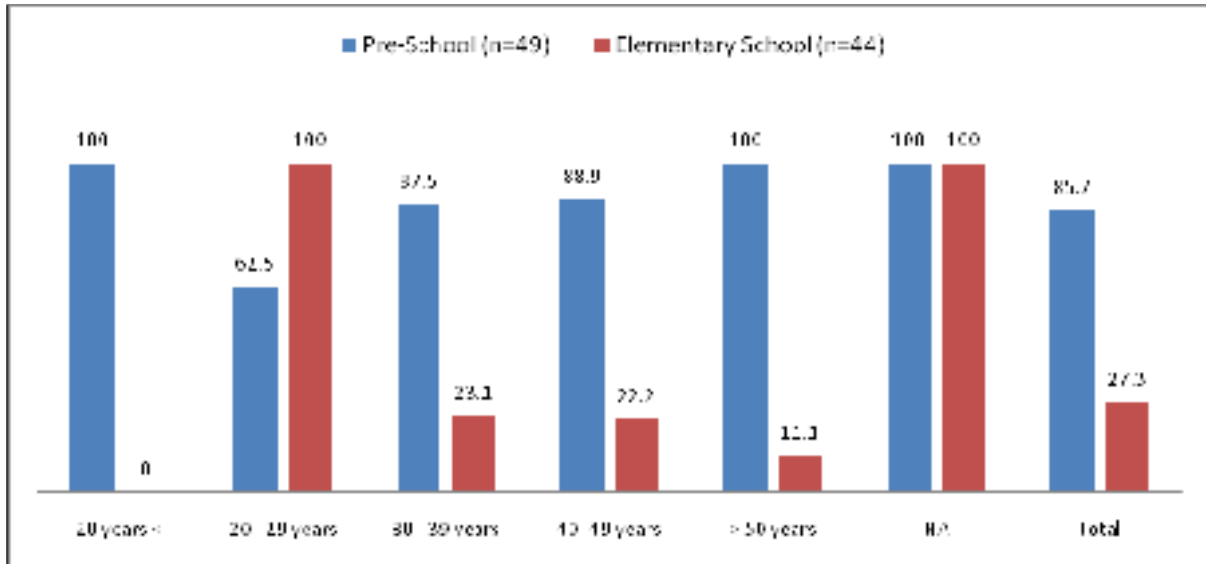


Figure 2. Respondent at Least Conduct One Research in the Last Five Years (%)

In term of the respondents' age, the least respondents that conducted research in the last five years were those in (20-29) years group for pre-school teachers (62.5%) and >50 years for elementary school teachers (11.1%) .

Meanwhile, 79.6% of those who conducted research perceived that research was a very important activities for teachers. In contrast, only 41% of those who did not conduct research perceived that research was a very important activity (Fig.3).

There is a tendency to value research as a very important activity for respondents who at least conduct one research in the last five years. In contrast, respondents who did not had research in the last five years tended to perceive research as important for teachers. Their perception of the importance of research is not as high as respondents who conducted research.

This tendency also occurs across age and sex of the respondents. Table 1 depicted detail on the distribution of respondents shows the tendency.

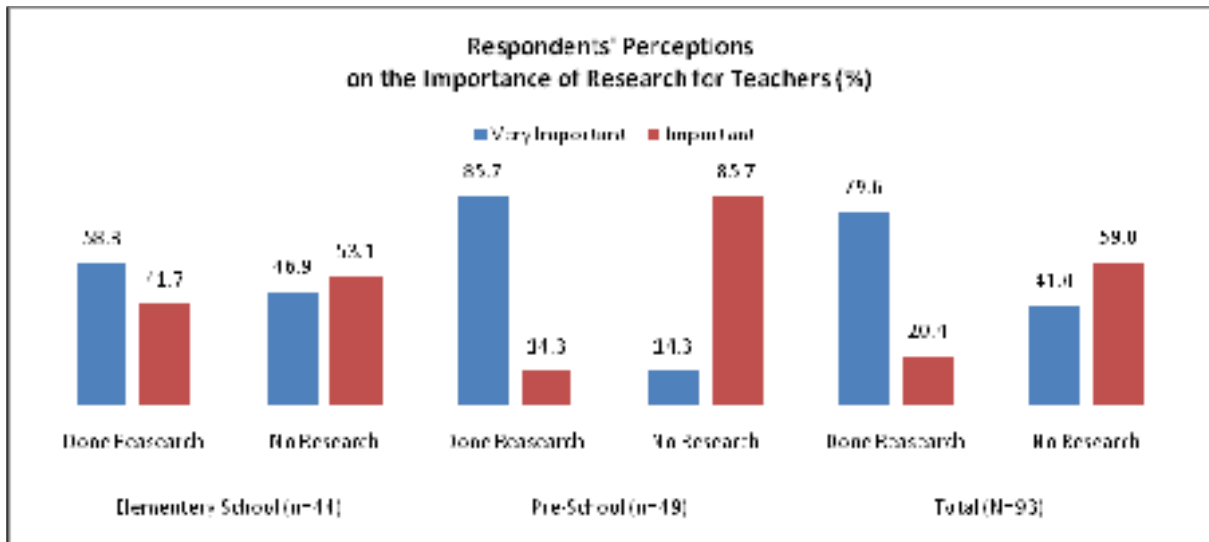


Figure 3. Respondents' Perceptions on the Importance of Research for Teachers (%)

Respondents' Age	n	Perception of the Importance of Research for Teacher	Male (n=13)		Female (n=31)		Total	
			Done Research	No Research	Done Research	No Research	Done Research	No Research
20 - 29 years	3	Very Important	33,3	0	0	0	33,3	0,0
		Important	0	0	66,7	0,0	66,7	0,0
30 - 39 years	13	Very Important	7,7	30,8	7,7	15,4	15,4	46,2
		Important	0	15,4	7,7	15,4	7,7	30,8
40 -49 years	18	Very Important	16,7	0	5,6	22,2	22,2	22,2
		Important	0	0	0	55,6	0	55,6
> 50 years	9	Very Important	0	22,2	0	33,3	0	55,6
		Important	0	0	11,1	33,3	11,1	33,3
NA	1	Very Important	0	0	0	0	0	0
		Important	0	0	100	0	100	0
Total	44	Very Important	11,4	13,6	4,5	20,5	15,9	34,1
		Important	0	4,5	11,4	34,1	11,4	38,6

In total, the highest number of respondents (34.4%) spend Rp.1-Rp.2 million for one research. While this is also true for elementary school teachers' respondents where 45.5% of them spend the amount of rupiah for one research, pre-school teachers' respondents only spend less than Rp.1 million for one research (Fig.4). Nonetheless, the number of pre-school teachers' respondents who conducted research at least once in the last five years is more than three times than those of elementary school teachers (Fig. 2).

Moreover, pre-school teachers' respondents who spend more than Rp. 5 million for one research is twice than elementary school teachers.

A relatively similar number of respondents from both school spend Rp2-Rp3 million, 13.6% for elementary school teachers' respondents and 12.2% for pre-school teachers' respondents. Still form Fig. 4, there is a tendency of smaller respondents spend larger fund for one research.

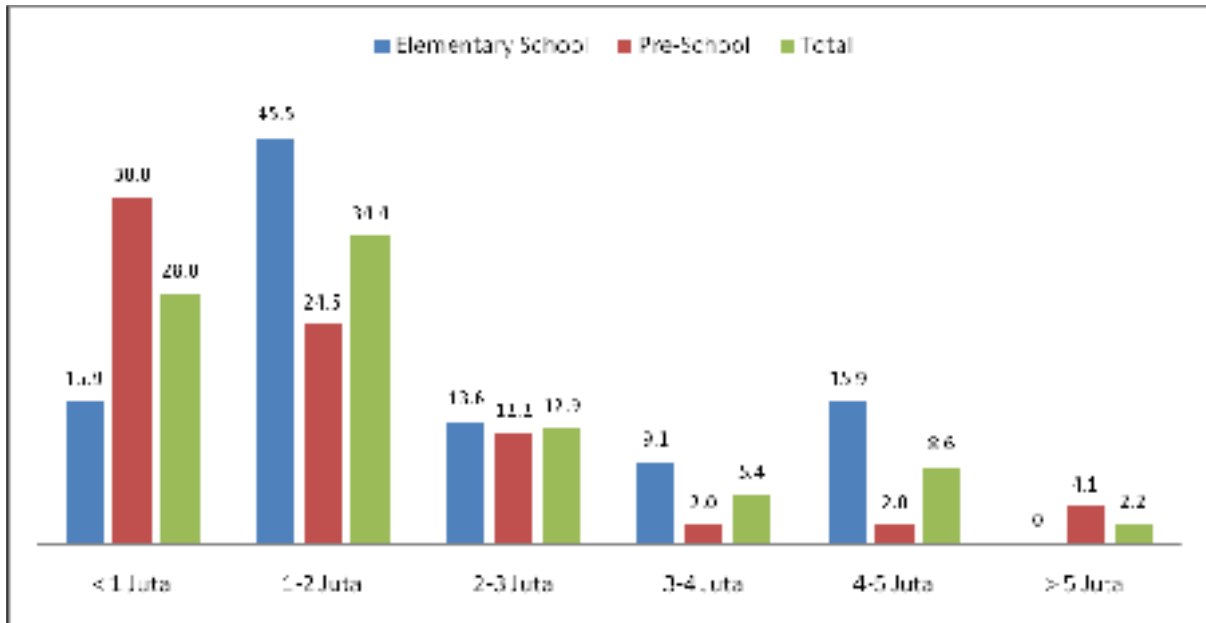


Figure 4. Budget for One Research (Rp., %)

When asked to define research, the respondents come up with 10 types of definition (Table 2). This definitions are in line with definition from experts. A broad definition of research is given by [2] in which research is defined as any gathering of data, information and facts for the advancement of knowledge. Another definition of research is given by [3] who states that research consists of three steps: pose a question, collect data to answer the question, and present an answer to the question to increase our understanding of a topic or issue. Meanwhile, [4] defines research as "a studious inquiry or examination; especially: investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws". In addition , [5] defines research as a process to find something while educational research is defined as a systematic investigation to gain information for decision making process in education.

From those experts, there are five aspects that related to definition of research, namely (1) gathering data, information, and facts; (2) advancement of knowledge; (3) answer question; (4) increase understanding of topic or issue; and (5) discovery and interpretation of facts. Comparing these five aspects to respondents' definition of research, some similarities come into view. The respondents voiced comparable aspects when defining research (Table 2).

Table 2. Respondents' Definition of Research

Definition of Research	Elementary School	Pre-school
• Systematic activities to achieve specified objectives	✓	
• Gathering and analyzing data one's interested in	✓	
• Systematic approach to gain scientific results	✓	
• Assessing the quality of teaching-learning process		✓
• Activities to improve the quality of teaching-learning process		✓
• Activities to improve results of students' learning		✓
• Finding answers to issues in classrooms accurately	✓	✓
• Finding root of problems in teaching-learning process		✓
• Activities to improve ways of teachers in delivering learning materials		✓
• Assessing and evaluating students development		✓

However, it is interesting to note that pre-school teachers' respondents took into consideration aspects of teaching-learning process when defining research while elementary school teachers' respondents seems not to include teaching-learning process in their definition.

Some of the examples of the respondents' definition of research are as follows.

Elementary school teachers' respondent:

- Conducting a set of activities to achieve objectives
- Activities aims at solving problems more accurate, activities conducted to know and solve problem, ways to gather data in cases for maximum results
- Systematic activities to gain scientific and accurate results

Pre-school teachers' respondents:

- Gathering and analyzing data to increase teaching-learning process
- An action to improve teaching-learning process
- To observe or to gather data related to problems in order to solve the problems
- Improving activities by gathering data to solve problems
- Ways to increase teachers ability to teach

- An action to analyze children’s development stage in order to increase the children’s achievement

Educational researchers have come to the consensus that, educational research must be conducted in a rigorous and systematic way (accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws". [6] [7]. Nevertheless, what this implies is often debated [8] [9]. Notwithstanding, in order to be able to conduct quality research, teacher have to poses certain skills and knowledge.

When asked to state skills and knowledge the respondents lack of in order to carry out research effectively, both groups of respondent agreed on their lack of research method. From Fig. 5 which details the distribution of respondents’ lack of skills to conduct research, interesting findings arose. Pre-school teachers’ respondents seemed to be more comfortable with their skills. Only around 50% of the respondents stated their lack of skills. On the other hand, in general, more than 70% of elementary school teachers’ respondents stated their lack of skills to conduct research. This could be one of reasons only 21% elementary school teachers’ respondents had conducted research in the last five years. In some skills, the different even counts more than 25% (formulating research questions and developing instruments). A different findings turn out in lack of knowledge (Fig. 6).

Both elementary school teachers’ respondents and pre-school teachers’ respondents affirmed similar lack of knowledge to conduct research. Teaching method development stands out as the most knowledge the respondents felt short of.

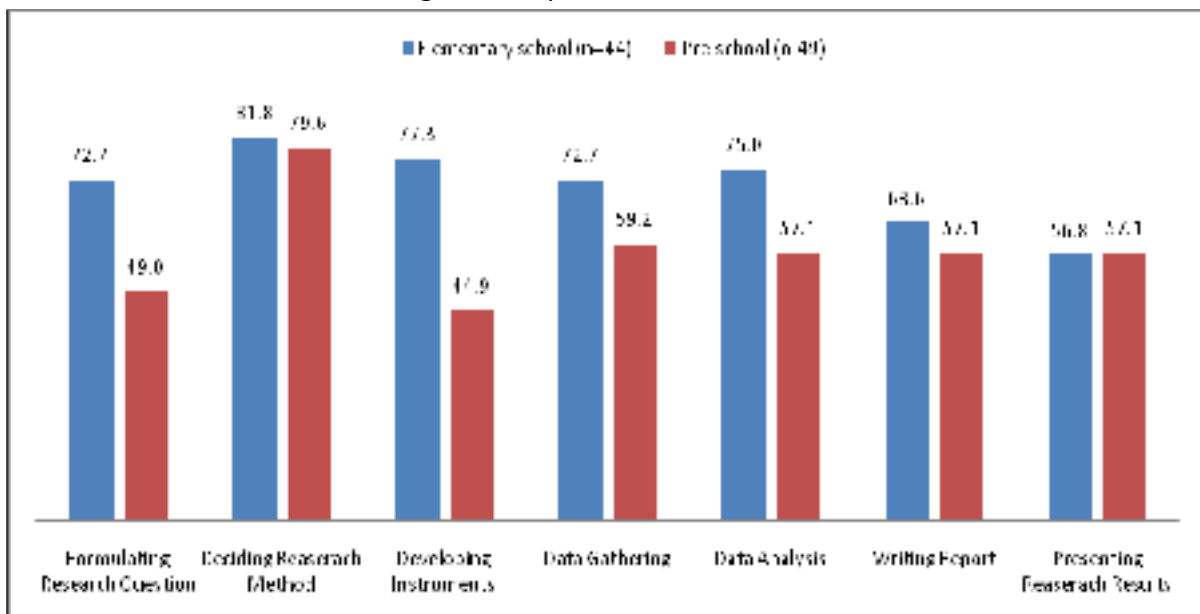


Figure 5. Skills Needed by the Respondents to Conducting Research (Multiple Responses, %)

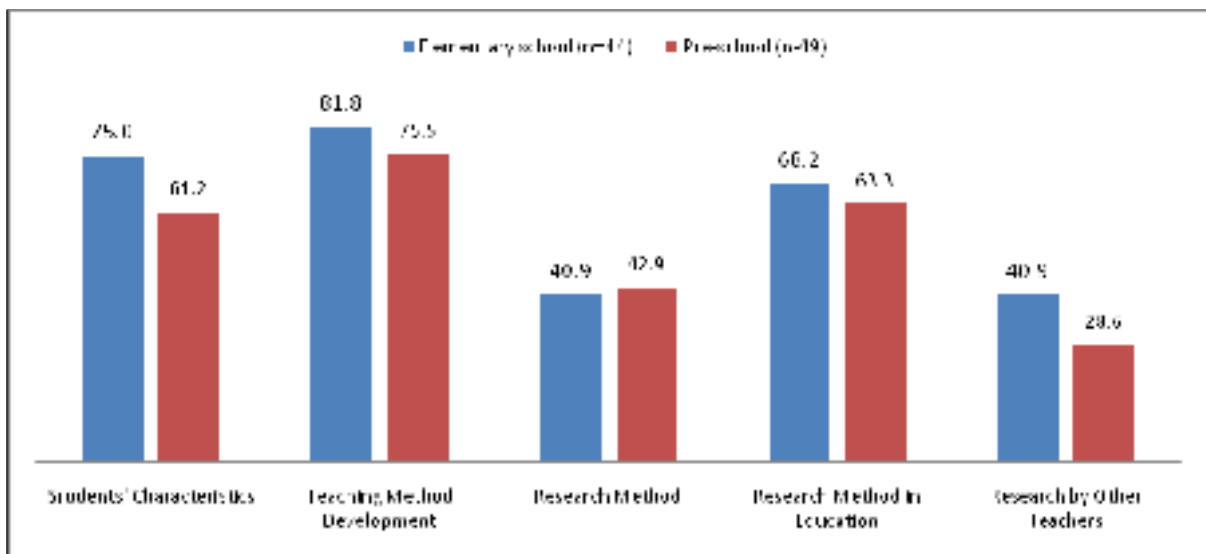


Figure 6. Knowledge Needed by the Respondents to Conducting Research (Multiple Responses, %)

Conclusion

Pre-school teachers' respondent who at least conduct one research in the last five years is three times of elementary school teachers' respondents. This could be caused by the elementary school teachers' respondents who stated that they did not comfortable with skills they poses to carry out research. More than two third of the elementary teachers' respondents felt their lack on amost ever skill required to conduct research while only less than half of the pre-school teachers' respondents felt it. On the other hand, both groups of respondents affirmed similar concern on their lack of knowledge to conduct research.

Based on the results, it is recommended to differentiate materials in relation to research for elementary- and pre-school teachers so that their needs to be able to conduct research could be effectively met.

REFERENCES

- [6] Anderson, G. & Arsenault, N. (1998). *Fundamentals of Educational Research*. Routledge. ISBN 978-0-203-97822-1.
- [3] Creswell, J.W. (2008). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd Ed.). Upper Saddle River: Pearson.

- [7] IAR: Glossary. (n.d.)". *Instructional Assessment Resources*. University of Texas at Austin. 21 September 2011.
- [5] Indrawan, R. Aug 24 2012. Penelitian dan Profesionalisme guru. http://www.slideshare.net/rully_indrawan/penelitian-dan-profesionalisme-guru retrieved 30 April 2013
- [9] Kincheloe, J. (2004). *Rigour and Complexity in Educational Research*. McGraw-Hill International. ISBN 978-0-335-22604-7.
- [8] Lodico, M.G.; Spaulding, D.T.; Voegtle, K.H. (2010). *Methods in Educational Research: From Theory to Practice*. Wiley. ISBN 978-0-470-58869-7.
- [2] Shuttleworth, M. (2008). Definition of Research. Experiment Resources. *Experiment-Research.com*. Retrieved 14 August 2011.
- [1] Suyatno. (8 Mei 2011). Hambatan guru saat melaksanakan Penelitian Tindakan Kelas (PTK).<http://garduguru.blogspot.com/2011/05/hambatan-guru-saat-melaksanakan.html>) diunduh 30 April 2013.
- [4] Unattributed. "Research" in 'Dictionary' tab". *Merriam Webster (m-w.com)*. Encyclopædia Britannica. Retrieved 13 August 2011.

Teachers' Sensitivity to Scientific Paper: Article Review from Guru Pintar Online³⁵

Andayani, Dodi Sukmayadi, Suroyo

Faculty of Teacher Training and Education, Indonesian Open University
anda@ut.ac.id, dodisy@ut.ac.id, suroyo@ut.ac.id

Abstract

Along with the establishment of professional work as a teacher and was recognized with the award of incentives, teachers are required to demonstrate their academic professionalism. One of them is by showing the ability to do research, write, and present the results of research through seminars and writing scientific papers. Universitas Terbuka (UT) develops Portal Guru Pintar Online as an Open Educational Resources (OER), one of which is intended to provide a variety of materials that can be used to enhance teacher competence. One of learning resources in Guru Pintar Online is Learning Enrichment Material (LEM) which contains a collection of scientific papers that can be used as references as well as examples of how to write scientifically and also can be utilized as a good practice in managing teaching learning process in the classroom. Until now there are more than 30 scientific papers and 10 power point presentation on various topics of learning which is divided into 7 topics related to various fields of study. From the questionnaires and interviews with 175 elementary and secondary school teachers who previously were asked to read 1 title of paper from LEM, found that some teachers do not sensitive to certain elements of scientific paper, meanwhile, at another element, the teacher might be sensitive to scientific paper. Nevertheless, exercise in writing scientific paper regularly and getting used to reading, might be increased sensitivity to a scientific paper.

Keywords: Teachers' Writing Skill, Scientific Paper, Guru Pintar Online

³⁵ This paper is based on the evaluation of GPO in 2012 were financed by BERMUTU Project, World Bank Loan, Report No: 39299-ID on 30 May 2007. While the presentation was funded by UT.

Introduction

Teacher is a profession that should be seriously undertaken and requires specific education to be a good teacher. Teachers' work touches with the behavior and character of person as well as the transfer of knowledge. Therefore, it is needed a comprehensive knowledge to know the students and their needs. The study of middle school student achievement in Indonesia indicates that they are still ranked lower than in Singapore, Malaysia, and Thailand to the field of mathematics, science, and reading [1].

Government through [2] and [3] confirmed that teachers have same professional positions with lecturers. Consequence of the Law is the teacher must be able to demonstrate professionalism in their work and must be willing to increase the competence and skills continuously in line with the development of science and technology. The effort in improving teacher quality by the Government is to require teacher has the degree of Bachelor and also through educator certification. In addition, through joint regulation between the Minister of Education and Chief of Employee State Number 3/V/PB/2010 and Number 14 in 2010 [4], are required for teachers who willing to get on to the next position from IIIb to IIIc level, must do self-improvement activities such as training and joined in the teachers' work group in district, also do publication of scientific paper or innovative work. Related to the scientific papers produced by teachers, [5] shows the data taken from Kompas news on 14 December 2007 that there are many teachers who are not promoted because they cannot produce scientific papers as the requirements to be promoted.

In line with the Government's commitment to keep on improve teacher quality continuously, Universitas Terbuka (UT) in its strategic plan also take part to improve the competence of teachers continuously. Guru Pintar Online (GPO) as an Open Educational Resources (OER) is developed by UT to be used and utilized by the teachers with the goal of continuously improving the competence, one of which sharpening ability to read, write, and publish scientific papers.

In 2012, in order to find out teachers' perception about GPO and its' advantages, the evaluation of learning resources including the existing scientific paper on GPO was conducted. The method of study is survey by distributing questionnaires supported by interviews to 175 primary and secondary school teachers from 12 cities in Indonesia. There are three kinds of learning resources on GPO which become the focus of the evaluation, such as short video program of problem-based learning resources, a collection of scientific paper on LEM and teacher communication forum. This paper will describe only the teacher's perception of the format and content of the scientific paper as one of the existing learning resources on LEM in GPO.

Teachers' Writing Skill

In order to improve the competence of teachers, the Government has done through such professional training and grants to attend seminars, to write scientific papers, and to do action research. However, there are many teachers who have not been able to take advantage of these opportunities to enhance professional competence in particular through seminars and scientific writing [6], [7], [8]. Alwasilah in [9] pointed that number of publications in Indonesia is on the order to 92 after Malaysia, Thailand, and Nigeria. This indicates that the culture of writing in Indonesian society is not well formed. In terms of writing skills of teachers, the reasons were mentioned most often is due to the time consumed for teaching activities and do not have proper writing skills.

Reference [10] suggested that one of the characteristics of an effective teacher if they are able to utilize the research results to improve learning. While [11] states that research on student learning will form the empirical basis for educational theory, and based on the theory of learning, a teacher will be able to develop the appropriate instructional strategies for his class.

The description confirms that the scientific literature is very useful for teachers personally as well as for effectiveness of learning process in the classroom.

Professional competence through writing scientific papers can be formed with continuous training and the conditioning of read. Government allocated 50 billion to get used 10.000 teachers write scientific papers [12]. In order to have Writing habit, it must be balanced with reading habit. Writing and reading are a soul mate activities [13]. Therefore, the availability of learning resources in libraries, computer connected with internet at schools might support teachers and students in getting closer to reading and writing culture. However, of all these efforts, personal teachers themselves should have a strong and consistent willingness to continue to practice writing and reading.

Scientific Paper

Currently, there is a Phenomenon that is writing a scientific paper becomes a problem not only for the teacher but also for lecturer. The issue of scientific papers writing can be a problem of nation known by other nations as less productive in writing scientific papers. Also in modern times, the oral culture flourished and was impressive in the media are available in almost all the modern humans, such as in television shows, 'We are aware that television is a lively pictorial book... all the viewer see and hear tend to be absorbed without a filter. So it is

no doubt that the idol of the viewer is a sitcom actress, singer and presenter with violence is the main themes [14].

From the point of view of message delivery in scientific paper, there are logos, pathos, and ethos. Reference [15] explains Logos is the aspect of scientific paper to invoke cognitive and rational response from its reader. It is as well to show how credible the writer is. Therefore, logos can be shown in quite theoretical and abstract language the paper uses including its presentation of definition, facts, statistics, analogy, citation, and of opinion. Meanwhile, ethos is to show reliable, competent, and respectful the writer is towards the value and ideas likely to be held by its reader. The language used should be appropriate for the people it addresses as well as for the field or area of knowledge it covers. Courtesy and prudent arguments should accompany such language. Lastly, pathos aspect of a scientific writing is to invoke emotional response of its reader. The language used must lively, full of spirit, figurative, and of course meaningful.

Aspects of logos, ethos and pathos in scientific paper would be shown through its characteristics in below.

Table 1. Aspect of Logos, Ethos, and Pathos in Scientific Paper

Logos	Ethos	Pathos
<ul style="list-style-type: none"> • Raise cognitive respond and ratio • Showing writers' credibility • Theoretical language and abstract • Analogy • Definition • Factual data and statistic • Quotation • Citations from experts' authority • Informed opinion 	<ul style="list-style-type: none"> • Showing competent and respect to the writer who have same value and idea with the reader through evidence • The same appropriate language and field of knowledge with the reader • Polite, fair, and wise writing format • Correct and good language 	<ul style="list-style-type: none"> • Raise emotional respond • Concrete language, passionate, emotional, and figurative • Contain connotative meaning

Furthermore, there is one aspect that must be considered in preparing scientific paper that is literature review. On the scientific activity, work on the literature has brought the

advantage not only for the writer, but also for the reader. As O'Leary describes in [15] that there are some benefit of literature review:

- Give the information of the background of the topic in scientific paper;
- Raise critical thinking to face knowledge and skill in scientific paper;
- Support idea and argument;
- Find out the discrepancy into the topic;
- Avoid unintentional plagiarism.

Even though the challenges to produce scientific paper is an issue that clearly inhibited. In order to raise the pathos and the ethos, it seems various attempts to realize the nature and importance of the scientific work is the first step of logos. Ethos can be realized by not getting bored to locate and review the various of literature that we can access it Therefore, the pathos always searches the next step, thus, the practical implementation of it will be developed, and finally, the quantity and the quality of scientific paper is getting better.

Guru Pintar Online

Portal was developed to be used by teachers widely and evenly. The uniqueness of GPO is on providing problem-based learning resources are packaged in the form of video, and it is accompanied by alternative solutions to the problem. Teachers are encouraged to reflect on the same problem that was experienced by them, and it will form critical thinking.

Further, one of the focus discussions is Learning Enrichment Material (LEM). It contains the collection of more than 40 popular scientific paper which is divided on the various of subject field such as some topics related to subject in the primary school, secondary school, and general issues of teaching learning method. Besides in the form of a scientific article, LEM also contains power point and modules that can be directly used for both teacher professional development and for learning in the classroom.

Related to the article review as a part of the evaluation of GPO that is conducted in 2012, it is only one article were taken at random for review, in title "The Education to Shape Nations' Character and Personality. The sample of the study is 175 elementary and secondary school teachers from 9 different cities in Indonesia (Jakarta, Tangerang, Surakarta, Magetan, Batam, Medan, Pontianak, Makassar, and Kendari). In terms of age, in general, the sample is between 30 to 50 years, while from educational background, 50 percent of the sample has Sarjana degree Meanwhile the focus of the study is to gain information about the quality and usefulness of LEM as a part of GPO based on teachers' perceptions.

In addition, there are data taken from the online questionnaire placed in the GPO. Associated with the perception to 55 visitors who have been filled out a questionnaire on an idea of the quality of LEM, as shown below.

Table 2. The Perception of Learning Enrichment Material on GPO

Number	Question	Respond (in percentage)				
		A	SA	LA	DA	Not Ans
1	Interesting topic	65	16	5	4	9
2	The advantage of topic	75	7	4	4	11
3	Solve teaching problem	53	22	9	5	11
4	Willing to read other resources	67	11	7	2	13
5	Current issue	47	24	13	2	15
6	Enrich insight of learning	67	13	4	2	15
7	Trigger critical thinking	64	15	5	2	15
8	Creativity of teaching	67	11	5	2	15
9	finding the same topic on other learning resources	58	15	7	5	15
10	All required topics available	25	24	24	11	16

Note: A = Agree SA = Slightly Agree LA = Less Agree DA = Disagree Not Ans = Not Answered

It appears that 55 visitors feel that the LEM has good quality and can bring benefits to teachers. Nevertheless, it could be common opinion and it does not represent what they actually experienced. However, the information received from online questionnaires can be starting point to improve the LEM. Regarding the information tracked from the open questions, the visitors asked more learning resources related to student organization and subject matter that they teach.

Finding

Based on the response of the teachers who fill 12 of the questions and reinforced by interviews and expert judgment about the article is considered, it appears that there are several different grains questions answered by experts. The questions related to the elements of the conclusions in the article that does not exist according to experts, but 79% percent of teachers responded differently. Responding to questions about the originality of article, as much as 63% of teachers stated the article is rarely discussed; include the original article, while expert has a different response. Furthermore, questions relating to a particular theory used by the author, there are 70% of teachers claimed that they saw the theory of

reference contained in the article. Instead experts do not see any theory in the article. Further, below is the illustration on table 3 that describes the differences responses between teacher and expert on several aspects contained in the article that was reviewed by teacher.

Table 3. Different Respond between Teacher and Expert

Questions	Teachers' Respond		Expert
	Appear	not appear	
Conclusion	79	19	not appear
Easily understood	91	6	not appear
Logic, coherent, and scientific	90	18	not appear
Daily live observable	95	5	not appear
Originality	63	31	not appear
Theoretical reference	70	32	not appear

While the response of teachers and experts to several questions related some question are almost same, as shown on the table 4.

Table 4. Similar Respond between Teacher and Expert

Number	Question	Respond		Expert Judgment
		Yes	No	
1	Logic, coherent, and scientific	90	7	Yes
2	Easily Understood	91	6	Yes
3	Consistency (objectives and content)	96	5	Yes
4	Relevance	90	8	Yes
5	Reference correspond	93	5	Yes
6	Reference accessibility	90	14	Yes

It seems that the teachers and experts have the same thoughts and opinions in response to some questions. As apparent on questions relating to the level of sensitivity of viewing articles, questions regarding the level of logical, coherent and scientific questions about the suitability of the content writing goals, questions related to the ease of interpreting the contents of the article, the question of the validity of the theory used in the article, all of them equally well answered by the teacher or by the expert.

Conclusion

It seems that, basically, teachers have already had a pretty good sensitivity in reviewing simple article since their responses in answering the questioner are almost similar with the experts' responses. The findings of this research imply that there is a need to give teachers some training to motivate teachers to do a lot of reading, examining and discussing a variety of writings that hopefully will increase teachers' sensitivity in writing scientific papers. However, teachers' perceptions of the scientific paper need to be examined further. Therefore, the results obtained from this study can be seen as a snapshot of the teachers' sensitivity in reading scientific papers.

Future Work

As an OER, GPO should be developed as much as possible and be creative in order to survive and become the main reference for the teachers. In addition, GPO should be disseminated widely so that more teachers can make use of it, in particularly, for improvement of teacher competencies.

ACKNOWLEDGMENT

To our colleagues who help us taking the data to 12 cities in Indonesia, especially to Nunung, Tuti, and Della, many thanks for the dedication in developing GPO.

REFERENCES

<http://siteresources.worldbank.org/INTINDONESIA/Resources/Publication/280016-1106130305439/617331-1110769011447/810296-1110769073153/education.pdf>
retrieved on 30 April 2013

Law of the Republic of Indonesia Number 20 Year 2003 on National Education System

Law of the Republic of Indonesia Number 14 Year 2005 on Teachers and Lecturers

The Joint Regulation of the Minister of Education and the Chief of Employee State Number 03/V/PB/2010 Numbers and Number 14 on 2010

I.N. Suandi, "The movement of scientific writing (an effort to improving teacher professionalism)," In UNDIKSHA Journal of Education and Instruction, Special Edition, May 2008, pp 510 – 530. ISSN 0215 – 8250

- Suroso, "In memoriam teacher: raise the spirits of empowering". Jendela. Yogyakarta. 2000
- I.G. Ayu .Ketut. Wardani, "Performance of graduate teachers of 1996 PGSD Curriculum". Unpublished research report. Universitas Terbuka. Jakarta. 2002
- D.S. Anshori, "Reading and writing: about stuttering culture". A paper is presented on national seminar: Toward professionalism of Indonesia language teacher. Bandung. April 2009
- P. Surya, " Making scientific paper to be a culture of Teacher Profession". Unpublished paper. Yogyakarta. 2011
- A.J. S. Reed and V.E. Bergemann, "In the classroom: An introduction to education". The Dushkin Publishing Group. USA. 1992.
- P. Pannen, "Research about learning: What is the advantage for lecturer?" In Communication Media Number 1/MK/V, pp. 4. Universitas Terbuka. Jakarta. 1995
- Kompas Newspaper. December 14, 2007
- R. Binham. "Smart writing: Tips, trick, and motivation to become smart writer (an e-book). 2012.
- Editorial of Edukasi Newspaper. 117 edition. May 2012
- D. Sukmayadi, "To understand the nature and importance of scientific paper: The Effort to improve quality and productivity".A book will be published soon.

INTEGRATIVE LEARNING MODEL ON EARLY CHILDHOOD EDUCATION FOR POOR CHILDREN IN TRADITIONAL MARKETS JAKARTA

Suhartono¹ and Tetty Rachmi²

^{1,2} FKIP Universitas Terbuka-Indonesia

¹hart@ut.ac.id, ²tetty@ut.ac.id

Abstract

Nowadays, formal education for Early Childhood Education (ECE/PAUD) provides children's readiness to learn basic education. However, ECE's availability for poor children in urban areas is very limited. In addition to the difficulty for providing learning facilities, there's uncertainty for learners to follow learning schedule. The purposes of this research are: (1) to find out the effectiveness of integrative learning implementation for poor children in Jakarta Traditional Market, (2) to find out integrative learning concept which can be applied for ECE teachers with limited funds and facilities, (3) to find out the implementation of integrative learning as society empowerment post, (4) to produce integrative learning books for the teachers and superintendents. The results of this research shows: the implementation of educational cost per session with integrative learning plan and involving student's parents in self-financial managements is an alternative which can be developed as ECE's market-based availability. The link of social causality of the parents which their activity done in traditional market has become a link, in which mutually supports the performance of ECE. The Research used in-depth field survey and observation method with developmental research approach. Samples used poor children in EVE "Sallam", Bulog Market, Jakarta and became the place of research, while seven ECEs/POSDAYAs which are placed in 4 sub-districts of Jakarta acted as supported research place. There were 170 respondents involving parents, students, and teachers.

Keywords: *Integrative Learning on ECE/PAUD, Poor Society, Traditional Market*

Introduction

In 2009 to 2014 the achievements of non-formal early childhood education in Indonesia is expected to break the 52.9% or 16.1 million children enrolled in early childhood. Data indicate the target of non-formal early childhood education by 2010 as many as 11.6 million (38.5%), in 2011 as many as 12.85 million (42.43%), in 2012 14 million (46.2%) and in 2013 as many as 15.05 million (49.7%) (Source: <http://www.paud.kemdiknas.go.id>). In Jakarta showed the existence of early childhood, children aged 0-6 years by 1,164,583 inhabitants, the number of early childhood students as people and as many as 496 470 42.63% is the Gross Enrolment Ratio (GER) of potential early childhood early childhood requiring non-formal schools. This phenomenon indicates a variety of issues, among others:

1. The number of children who have not attended early childhood is still quite large.
Facilities and infrastructure in quantitative and qualitative study is still limited, it is caused by the limited creativity of early childhood teachers to create and develop teaching methods and learning resources to harness the potential of cultural and natural surroundings
2. Competence of most early childhood teachers are not sufficient because most of them do not come from a background of early childhood education and they have not received training related to concept and practical knowledge about early childhood education
3. Differences in gross enrollment ratios (GER) ECD participants in urban and rural areas is still very large.

Today the level of formal education in early childhood a lot of good contributed to the preparation of children to basic education. However, the availability of early childhood education for poor children is very limited existence, apart from the difficulty of managing the funds needed for facilitating activities are also factors uncertain learners in the following learning activities. This situation provides a great impact on the community, so that their participation in the development of an alternative school for poor children in urban areas is limited. Though the existence of the school is necessary for them in addition to functioning as a place to get lessons also expected to ease the problem of the cost of education. Report the results of the implementation of early childhood programs nonformal lines developed by a studio playing Sallam Club (Cici and Suhartono, 2008) is a program of early childhood education for poor children who could not afford the cost. Education offered to play the studio can be used as an alternative education for poor children to prepare themselves to basic education. Generally children studying in Play Studio's come from underprivileged families / poor, like the child of a family of street vendors, laundry workers and children employed by their parents as hawkers and beggars that usually they move the

corners of the intersection at a red light. Locations are around the traditional market, so it becomes a pattern of integration between parent and child as market participants as learners.

In the development of every year, this studio has increased the number of students enrolled in school. Thus indicating that, poor families in urban Jakarta, especially in East Jakarta each year also increased. This play was originally intended as a studio space for parents who happen to trade in the market that is located close to the school to leave their children while they trade. Through perdatang cost and affordable system provides a solution for parents to leave their children can get a variety of subject matter kindergarten level. With the cost of education comes system, the number of students each day is uncertain. It depends on the time learners have the money for school. The arrival of learners who are not sure, would have caused difficulties include (Cici and Suhartono, 2008):

- a. Program learning undertaken by teachers to be difficult to implement an efficient and integrated learning can facilitate children whose arrival is not necessarily
- b. In general, the teacher is difficult to observe and record student progress on the presence of less than 50% per month
- c. Sometimes difficult teachers describe students' progress chart in general
- d. Most of the teachers had difficulty in reporting the results of students' progress to parents, because most of them many who do not understand even the illiterate.

Based on the background and results of the preliminary report that has been done by previous researchers (Cici and Suhartono, 2008) have given a thought and encouragement for the author to establish the design of more efficient integrated learning for poor children with the application fee in the studio playing comes system integrated Sallam Club in the traditional market place. Author hopes that the program design will be developed useful and necessary for children with social and economic backgrounds are very limited in getting a better education.

Research Objectives

This study aims to:

1. Determine the effectiveness of the implementation of an integrated learning for the early childhood classroom for poor children in Jakarta on an on going basis
2. Knowing the concept of integrated learning and an integrated curriculum based on core curriculum that can be applied for early childhood teachers with limited classroom conditions in the various facilities and the cost of education in the traditional market.

Integrated Learning

There are two reasons for the application of blending learning of the subjects with other subjects, or a subject with certain materials, so that it becomes a menu that will be served in the learning process (Personnel Directorate, Directorate General of Primary and Secondary Education, Ministry of Education: 2004):

1. Empirical reasons, because essentially life experiences are complex and integrated, meaning that involves various interrelated aspects.
2. Scientific Theoretical reason, because of circumstances and problems in life will continue to evolve in line with developments in science and technology.

To put things into a separate subject, of course, may not be incorporated into the curriculum as a stand-alone subject. In other words, the science payload and increasing the information that may not be incorporated into the curriculum into a stand-alone subject. Therefore, it is necessary that the content of the curriculum organization is more of a choice of teaching materials that are specifically prepared as the menu for the learning process. From this came the birth of subjects fusion integrated curriculum (integrated curriculum), and then gave birth to the core curriculum (core curriculum). Furthermore Conny R Semiawan limiting integrated learning as a "natural way of learning for children" (Semiawan, 2001). According to the integrative process to move from a particular subject but rather are loose in linking the topic as a "center of interest" (center of attention) with other elements of the various subjects in order to form a more meaningful whole. Said to be significant because of the integrated learning, children will understand the concepts they learned through direct experience by connecting other concepts they already understand. The advantage is seen from the perspective of the child is a separate field of study is very appropriate. She read, calculate, record something with no direct interest in getting out of a particular field of study.

Alternative Education for Poor Children

Based on this view if only education needed is education for poor children with the resulting liberation of a social movement, which began the politicization of education and weak people and then involves the collective efforts of the weak people to gain power and change the structure of -structures are still pressing (Parsons, 1994).

Sallam Club School

From the academic year 2003/2004 amounted to 9 student learners, until the academic year 2007/2008 the number of students reached 72 people. So that the average annual number of students increased by 10-20%. Until the year 2012 the number of children who joined in early childhood consists of 93 children. The number of ups and downs, because their participation in early childhood education in Sallam depending on the wishes and interests of each parent and child.

Results of initial studies through interviews with parents when they enroll their children concluded their reasons include (Cici and Suhartono, 2008):

1. Schools are cheap and affordable pay per system comes in the amount of Rp. 2500, - every meeting and learning activities.
2. Conveniently located close to the market so that parents can perform trading activities.
3. In general, busy parents who trade and other work led to not have time to teach their children before entering elementary school.
4. The number of primary school selection tests are conducted for students in the form of a test reading, writing and arithmetic, so parents should prepare their children to be received at the elementary school.

From interviews indicate that many parents from lower-middle class who want to send their children to a kindergarten that teach the preparation of reading, writing and arithmetic, but due to limitations of the economy they can not afford, so the studio playing with perdatang costs serve as an alternative school for parents in preparing their children to the primary school level.

Education Costs Comes System

Important consideration in choosing a pre-school is able or not to bear the cost of education. There are some schools that ask for payments weekly, monthly, semester or even a full year in advance (Marian, 2001).

School costs vary widely depending on the place. Generally schools are located in large cities, such as Jakarta school costs more expensive depending on the place and the quality of education. It varies from hundreds of thousands to millions of dollars, which includes the monthly fee, money when he first entered the base, building fees, uniforms, extracurricular activities and regular monthly money. It needs to be understood according to Marian, that school is expensive does not guarantee the quality of education for the child. Many schools that sell equipment and facilities for reasons of prestige and excellence (Marian, 2001).

Through education costs are periodic perdatang conducted concurrently with the students following each harinnya learning activities with very affordable cost.

Results and Discussion

Based on the results of the questionnaire and the analysis of the data obtained shows that the condition of the parents and students who are studying in the studio playing/PAUD Sallam be observed as follows:

1. Background of the parents of the children studying in the studio playing/PAUD Sallam has realistic conditions of structural poverty, as poverty suffered from a family because of social structural join can not use other sources of income is actually available. They are the parents of the workers who are not educated, not trained and entrepreneurs without capital and without any facilities that include a very weak economic group.
2. Parental education level is very low. average is not completed primary school.
3. Daily parental income of around Rp 15,000, - up to 25.000,-rupiah, with load dependent family members on average 3 people.
4. The average child less get balanced nutrition of the elderly, because several things including:
 - (a) the availability of food due to lack of purchasing power of the food needs of the elderly poor,
 - (b) parental knowledge of the pattern of low nutrition due to low educational ,
 - (c) poor culture resulted in irregular eating patterns and food menu is potluck.

The design of integrated learning for poor children that is in the studio play 'Sallam' focused on:

1. Child-centered curriculum
2. Effective learning
3. Classroom management
4. Appraisal
5. Management education costs/present

(1). The Curriculum is Centered on The Needs of Children

Child-centered curriculum that emphasizes more on the needs and interests of children who designed the thematic project. The thematic topics can be constructed from a variety of sources, but the theme is based on the high interest of the child will support the child's motivation and learning success. With the teacher will ask the children's interests are developed. Duration of each project thematic flexible nature and depend on the interest of the majority interest of the child class.

In making the thematic projects focused on children should pay attention to the selection of the theme. Theme selection should be done by holding considerations include: there should be an opportunity to apply the skills, there must be linkages with other subjects, there must

be a source of learning, teacher interest and so on. Thematic learning criteria are applied studio playing Sallam include:

1. All children studied had significant
2. Children learn about the environment of life in traditional markets
3. Teachers must associate all subjects in one theme and should emphasize the skills that can help children to acquire knowledge through learning activities
4. There must be an interest and creativity of teachers in presenting the material so it does not dull boy.

The preparation of the child-centered curriculum with thematic can be made in stages, namely:

1. Annual planning
2. Weekly planning
3. Daily planning

The design of child-centered curriculum in the PAUD "Sallam" learning design in the design of presentation of thematic projects themes derived from the original pre-school education curriculum that has been established Department of Education, but the sub-theme is based on children's interests.

Table 1. Theme of Semester 1

No	Theme	Sub Themes	Allocation of Time
1.	Myself	1. Describe Myself, 2. Telling the Family 3. Hobbies and Habits in the Family	3 weeks
2.	My Neighborhood	1. My Home 2. My School 3. My Playground	4 weeks
3.	My needs	1. Clothing 2. Food and Drink 3. Hygiene 4. Health 5. Break	4 weeks
4.	Animal	1. Beast 2. Pets 3. Livestock Animals	3 weeks
5	Plants	1. Various Plants 2. Maintaining Plants	3 weeks
Number			17 weeks

Table 2. Theme of Semester 2

No	Theme	Sub Themes	Allocation of Time
1.	Recreation	1. park 2. market 3. Kids game center	3 weeks
2.	The Job	1. The types of work 2. place of work	3 weeks
3.	Water, Fire, Air	1. Water for life functions 2. Function Apibagi life 3. Air Water function for life	3 weeks
4.	Transportation	1. Land Transport 2. Maritime Transport 3. Air Transportation	3 weeks
5.	Fatherland	1. country 2. flag 3. My anthem	3 weeks
6.	Universe	1. Erath 2. Sun, Moon, and Star	3 weeks
Number			18 weeks

Table 3. Modified and Developed of SKH

No	Indicator	Learning Activities	Tools and Resources	Evaluation of Child Development	
				Technique	Results
1	Count the number of red flowers in the garden	1. Initial activities (singing, praying greeting) 2. Bring the kids to the park 3. Given the task of counting the red flower	<ul style="list-style-type: none"> •Worksheets •Stationery and coloring • Mat as a cushion 	<ul style="list-style-type: none"> •Observation •Work assignments •Questions and answers 	

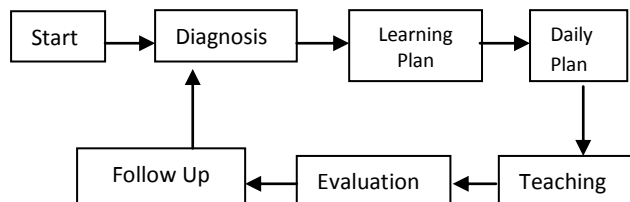
Table 4. Modified and Developed of SKM

No	Fields are Developed	Day/Date					
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	Music			Sing the most beautiful garden			
2	Count		Count the number of red flowers in the garden				
3	Writting				Writting word 'park'		
4	Language	Read the story of the Garden Beautiful					
5	Sains		Collecting leaf forms that exist in the park				
6	Religion					Saying "Subhanallah"	

						" when looking at God's creation.	
7	Sosial Sciences						Creating a map layout of toys in the park
8	Art			Attaching various leaf			Coloring pictures map made
9	Drama					Playing pretend to be flowers of God's creation	
10	Physical of Motor				Jumping and swinging		
11	The Introduction of English			Mengucapkan kata "Park"			
12	Playground	Play Puzzle	Play in the park				

(2). Application of Integrative Learning in The Studio Playing 'Sallam'.

Workflow learning model that has been applied in the studio playing 'Sallam' group illustrated as follows:



Application of learning through the following steps:

- Step 1: Diagnose the learning situation, and then determine the curriculum that will be used.
- Step 2: Plan and create outline what will be taught.
- Step 3: Develop a daily plan or plans per unit. Determine what children should know and what activities to get the desired result.
- Step 4: Perform teaching. Teachers lead children to perform a series of activities that have been planned.
- Step 5: Conduct an evaluation to determine students' mastery of material or a theme that has been given.
- Step 6: Follow-up. If the evaluation shows a lack of student mastery of the material, then do next to provide remedial plan.

(3). Classroom Setting

Studio playing 'Sallam' has only four classrooms that accommodate 72 students, each class consists of 18 to 20 children. Limitations of the study was not an excuse to explore the child's learning. Hours of study divided into two sessions, the morning classes and afternoon classes are rotated every week. Classes based on children's interests, which opened on a daily basis. This is in anticipation of the study are limited, every child is free to choose the classes that interested him the child's arrival does not necessarily correspond with the ability of the child's parents have the cost of study per day.

Here is a classroom management plan based on the child's interest in the studio playing "Sallam"

(4). Appraisal

Assessment applied in the PAUD Sallam covers, record the activity of a child's learning activities using electronic media cards and study visits. Most of the activities recorded by the teacher using a recording medium such as a mobile phone with video facility which is then transferred to the monitor or TV screen is presented to the parents of each month along with the relationship between the parents in the form of social gathering and the nutrition. The draft assessment using integrated learning in the PAUD 'Sallam':

1. Initial observations, teacher observations on the Daily activities of students.
2. Implementation of integrated learning assessment by comparing the results of the assessment based on the experiences of parents and the child's environment teacher assessment based learning process of children.

(5). Cost Management in Early Childhood Education each present

The application fees were applied in PAUD Sallam with Rp.2500 comes system, -. Every child is free to choose the classes that interested him based on a predefined schedule school. The financing is intended to:

1. Rp.1000,- for teachers. While the teacher incentive program assistance obtained from government work together Himpaudi DKI
2. Rp.500 for operational
3. Rp 500 for equipment
4. Rp 500 business

Nutrition day is cook and eat together activities between parents, teachers and students. Cost for the day nutrition in PAUD Sallam obtained from the joint parents of students in the form of materials obtained directly from the merchandise sold. This activity aims to introduce a balanced diet that can be implemented by parents in their homes. Teachers assigned as administrative faculty concurrently manage payment comes system students whose format is based on student attendance.

Conclusion

1. Teaching and learning process with an integrated learning is in accordance with the characteristics of learning preschool age children, especially for children and the elderly with social and economic backgrounds who are limited in the traditional market.
2. Integrated learning process of teaching and learning with educational expenses per application came to provide an alternative way of funding for non-formal schools.
3. Integrated learning at the scene of traditional markets can provide learning situations that make children responsible for their learning, either independently or appreciate the work of parents. Implementation can be developed with different situations and learning facility limitations.
4. Integrated learning also offers opportunities for children to work with other parties on a different challenge.

Suggestion

The need to apply the concept of integrated learning in early childhood education for poor children in the traditional market place must be empowered in big cities like Jakarta. Authors feel if in front of our eyes are still a lot of students in Jakarta, displaced due to the lack of fulfillment of the need for education for the early childhood program. Do as little as possible for the future of your child, appropriately empowered.

References

- BPS/Badan Pusat Statistik dan Depsos/Departemen Sosial (2000). *Penduduk Fakir Miskin Indonesia 2002*, Jakarta: BPS.
- Children's resources International, Inc (2000). *Menciptakan Bahan Ajar Yang Berpusat Pada Anak*. Jakarta: CRI Indonesia.

- Cici, dan Suhartono (2008). *Pembelajaran Terpadu di Sanggar Bermain Sallam-Jakarta*. Jakarta: Laporan
- Depdiknas (2005). *Pedoman Pembelajaran di Taman Kanak-Kanak*. Jakarta: Direktorat Jenderal Manajemen Pendidikan Dasar dan Menengah.
- Marian Borden E (2001). *Smart Start, Panduan Lengkap Memilih Pendidikan Pra Sekolah Balita Anda*. Bandung: Penerbit Kaifa.
- Parsons, Ruth J., James D. Jorgensen, Santos H. Hernandez, (1994). *The Integration of Social Work Practice*. Wadsworth, Inc., California.
- Seksi PAUD dan Pendidikan Inklusif Divisi Pendidikan Dasar Sektor Pendidikan UNESCO (2005) *Laporan Kebijakan: Pendidikan dan Perawatan Anak Usia Dini di Indonesia*, Jakarta: Workshop UNESCO.
- Semiawan, Conny R. (2002). *Belajar dan Pembelajaran Dalam Taraf Usia Dini*, Jakarta : Ikrar Mandiri Abadi.
- Suharto, Edi. (2004). "Social Welfare Problems and Social Work in Indonesia: Trends and Issues" (Masalah Kesejahteraan Sosial dan Pekerjaan Sosial di Indonesia: Kecenderungan dan Isu), makalah yang disampaikan pada International Seminar on Curriculum Development for Social Work Education in Indonesia, Bandung: Sekolah Tinggi Kesejahteraan Sosial, 2 Maret.

DEVELOPMENT of M-Edukasi.kemdikbud.go.id A MOBILE LEARNING-BASED LEARNING MEDIA

M. Miftah. M.Pd.

A Researcher On Education in BPMP, Pustekkom Kemdikbud
email:hasanmiftah@yahoo.com

ABSTRACT: Education is a very worthwhile investment in human life. Therefore, development efforts are under way to create a variety of learning alternatives to support the educational process. Information and Communication Technology (ICT) is one of the important components in providing innovative alternative education and learning. With the expected ICT learning process can be more optimized and enrich learning resources for students. Multimedia Education Development Center (BPMP) of Education and Culture Ministry has been appropriate with its duties and function to develop models and learning multimedia presentation formats, continue to innovate to develop instructional media adapted to the conditions and information technology advances which continue to grow as well. One of the models that was developed is Mobile Learning (M-Education)-based phone/mobile.

Keywords: development, learning media, mobile learning

INTRODUCTION

Information and communication technology (ICT) reinforcement in education area is stated explicitly in strategic plan of National Education Department in 2010–2014. In this way, ICT is employed to sustain the national education programs, i.e.: access distribution and extension, quality enhancement, relevance and competitiveness, and public management and imaging.

As its obligation, Information Technology and Communication Center (ITCC/Pustekkom) of Education and Culture Ministry (now: Kemdikbud) always tries to make development, maintenance, and activity evaluation in educational technology area and ICT reinforcement for education. ITCC has several functions in technical policy formulation in educational ICT, system development, ICT-based learning model and media, and Human Resources development in ICT area. Besides, based on Permendiknas No. 38 of 2008, ITCC has a new obligation to be responsible for ICT management in whole Kemdikbud environment.

In undertaking the mission, Pustekkom has three Technical Implementor Units (TIU) to develop media. They are Radio Education Media Development House in Yogyakarta,

Television Education Media Development House in Surabaya, and Education Multimedia Development House in Semarang. As one of Pustekkom TIUs, Education Multimedia Development House (BPMP) has obligation and function to develop learning multimedia model and format. One of the multimedia-based learning models developed by Educational BPM is Mobile Learning program. This program is expected to be one of Jardiknas contents excluding the contents developed by Pustekkom. The program is evolved as one of ICT-based learning resources as well as other education resources fostered by Pustekkom like Educational Television (TVE), the sites of learning material Edukasi.net, and education radio.

Mobile Learning is a learning model undertaken by using technology which is portable when studying in mobile condition. With its various potentials and excesses, Mobile Learning is expected to be alternative learning sources which can enhance the efficiency of the process and performance of future students in Indonesia.

This article is written to share the experience in developing mobile/handphone-based learning media and to give a clear description about *Mobile Learning* program developed by Pustekkom. It is expected that this article can be one of resources generally for the developers, observers, and users of the program especially for the civitas academica.

ANALYSIS AND DISCUSSION

ICT Development

Communication and Information Technology (ICT) is part of Knowledge and Technology Science which means all technology is generally related to uptaking, collecting, processing, storing, distributing, and information presenting (Research and Technology State Ministry, 2006). All software, hardware, content, computer infrastructure, and telecommunication are included in the definition. The term of ICT or famous as *infocom* in Asian countries which use English appeared after computer technology (both hardware and software) and communication technology are integrated as means of information distribution in the mid of 20th century. Both technology unification develops rapidly exceeding other technology areas. It is even believed that until the beginning of 21st century, ICT will continuously develop rapidly. In global level, ICT development has influenced all areas of human life.

If traced from the past, there were some technology development areas which obviously give contribution towards the recent ICT existence. The first is telephone invention by Alexander Graham Bell in 1875. This invention was then followed up with communication network realization by using cable encircling in whole American land. It was then followed by trans-atlantic communication cable installation. This is actually the first infrastructure which were massively established by human for global communication.

In the 20th century, especially between 1910-1920, sound transmission without cable was carried out through the first AM radio broadcast (Lallana, 2003). The sound communication without cable developed rapidly, and it was then followed by audio-visual transmission without cable in the form of television broadcast in 1940s. The first electronic computer was operated in 1943 then followed by miniatur movement phase of electronic component through transistor invention in 1947 and integrated electronics in 1957. Electronic technology development, which recently becomes ICT of teacher, acquired its golden moment in cold war era. IPTEK competitive between West Block (USA) and East Block (ex Uni Sovyet) triggered electronic technology development by the efforts of electronic combination miniatur movement to control space planes and war mechines. The miniatur movement of electronic component through integrated combination making will definitely result in micro-processor. Thus, it will be the “brain” of computer’s hardware which continuously experience evolution until nowadays.

However, the telecommunication set developed well when digital technology was implemented to substitute the analog one which started to show its maximum limits exploration. The digital movement of telecommunication set then converged with computer ware which initially adopted digital technology. The convergence result product have recently appeared in the form of cellular phone. There is certain content inside the telecommunication and computation in the form of multimedia, which get appropriate place to develop. The convergence of telecommunication-computation-multimedia becomes the characteristic of the 21st century in which in the 18th the characteristic was industry revolution. If mechines were subsituted into human power in industry revolution, mechines substituted (or at least evolved its ability) human brain in digital revolution (because the convergence of telecommunication-computation-multimedia occurred through digital technology implementation).

Indonesia has ever used the term of *telematics* about the same meaning as ICT that has been already known recently. Encarta Dictionary describes that *telematics* is *telecommunication + informatics* although it previously means *science of data transmission*. The process and distribution of information through telecommunication network give many opportunities to use in many areas in human life including education. The idea to use learning mechine, to make complicated simulation, and to make animation of process which is difficult to describe cause the learning practitioners feel interested. In addition, the possibility to serve learning without any time and place constraint is also facilitated by ICT . Thus, there were many jargons started by ‘e’ like *e-book*, *e-learning*, *e-laboratory*, *e-*

education, e-library, ect emerged. The initial of 'e-' means electronics which implicitly means digital technology-based.

The Roles of ICT in Learning

Learning is a process of interaction between students and learning resources in learning environment. Therefore, the students should not only learn from teachers or educators but also learn from any available resources in their environment. In learning activity, the students find it so easy to access learning resources which definitely determines the success of achieving the goals of education. Students are closely related to information and educational material so that tools and infrastructure are required to fulfil the stated charge. Thus, they will not be confused to find relevant materials, obvious resources, and place to aspirate the learning when they have many tasks in learning activity. There are actually many kinds of learning resources. They can be in form of message, person, material, tools, technic, and environment. The understanding of learning resources in school has been limited only in teachers or books. In fact, there are only little part of learning resources.

ICT use in learning in Indonesia has relatively long history. The initiative to broadcast education radio and television as efforts to spread information to educational units which are spread in whole nation is the result of awareness to optimize technology usage to help the society learning process. The weakness of radio and television broadcast was there is no simultaneous feedback interaction. The broadcast is in one way direction from facilitator towards learners.

Computer introduction with its ability to process and present multimedia presentation (text, graphic, image, sound, and movie) gives a new opportunity to overcome the weakness possessed by radio and television. If television can only give one-way-information (even when the broadcast is record), internet technology-based learning gives a chance to interact both in real time or delayed. Internet-based learning enables to make synchronous learning. Its main excess is that both learner and facilitator do not have to be at the same place. Technology use of video conference operated based on internet technology enables for learners to be everywhere if they are connected with computer network. In addition to the mentioned applications, there are other several opportunities which are more simple, easier, and can be developed in line with recent ICT development. One of ICT forms is internet that has rapidly developed since 21st century. Internet is actually one of globalisation era instruments that changes this world into transparent and is connected easily and quickly without any place and nation limits.

In line with ICT rapid development, the need of concept and mechanism of ICT-based teaching-learning (education) cannot be avoided anymore. The concept which was then familiar by *e-Learning* influences the process of conventional education transformation into digital form both in its content and system. Nowadays, *e-Learning* concept is accepted well by the world society by the implementation of *e-Learning* in education institution. The program of *e-Learning* developed in Multimedia Development Division of Pustekkom is one of e-learning model application forms.

Concept of ICT-Based Learning

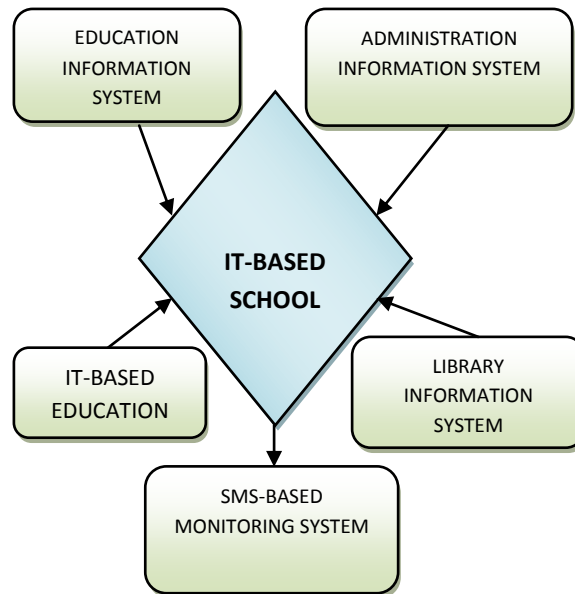
ICT-based education is an education system in which the teaching learning process takes place by using information and communication technology. In this system, the interaction between teachers and learners must not meet physically like in conventional education system. They meet in information technology space (internet) by employing a media called computer. The physical things (learning materials, books) in conventional learning system change into digital information in ICT-based learning system. Because of the change, for they do not meet physically, the way of teaching learning and learning way of the learners must also change as well. The ICT-based education will change the teachers' and learners' attitude in teaching learning process. They must get under information technology instruments employed in learning so that the teaching learning process can take place.

Challenge and implementation of ICT-based education are very hard. In addition to change the way of teaching learning process, big investment to provide appropriate IT infrastructure so that learning process could take place also became a problem. Thus, there must be successful and failure story from their experience which innitially implement ICT-based education.

ICT-based education then took more simple forms to reduce the weight of pure implementation such as the use of intranet network (intranet is local computer network which is the miniatur form of internet) and the use of CD-ROM media. Learning process in intranet local network has almost similar characteristics to learning process in internet network. It is undertaken in one place or in one building or in wider area. In CD-ROM-based system, the learning material is brought by learners in form of CD-ROM then learned in each computer.

The thing that must be remembered is that any forms taken from ICT-based education must refer to the main goal, repairing teaching and learning quality in class and evolving information technology literacy. Never develop ICT-based education system as *optional* or due to *nice to have*.

The future school development in Indonesia necessarily focuses on more attention in ICT use like in ICT-based school program. (look at following the picture)



Picture of IT-Based School

Education system information is a system to manage educational data, administration information system to manage administration data and school finance, library information system to manage books and literatures data in library, and sms-based monitoring system to monitor the start and finish schedule of the students by integrating sms technology and finger print. This monitoring system is quite useful for parents. All mentioned systems are useful to evolve effectiveness of school organization and IT-based education system.

The Concept of E-Learning-Based Learning

There are many experts who define *e-Learning* from different point of view. Many people generally state that *e-Learning* is an education system or concept that use information technology in teaching learning process. According to Hartley (2001), *e-Learning* is a kind of teaching learning that enables the distribution of materials towards the students by using means of internet, intranet, or other computer media. Meanwhile, in *LearnFrame.Com* (2001) it is stated that *e-Learning* is an education system which employs electronic application to support teaching learning activity by media of internet, computer network, and stand-alone computer.

Therefore, *e-Learning* is all included in computer use in sustaining learning quality increase, including the use of mobile technology such as PDA and MP3 players. It is also included in the use of web- and hypermedia-based teaching materials, CD-ROM multimedia or web sites, discussion forum, collaborative software, e-mail, blogs, wikis, computer aided assessment, educational animation, simulation, games, learning management software, electronic voting systems, and so on. In addition to the mentioned usages, it can be also in form of combination of different media use (Thomas Toth, 2003; Athabasca University, Wikipedia).

As one of learning systems, *e-learning* can control various learning activities, such as planning, organizing, implementing, and evaluating. Training programs can be also designed more efficiently and effectively.

The advantages of using e-Learning are: saving time of teaching learning process, reducing transportation cost, saving whole education cost (infrastructure, tools, books), reaching all wide geographic areas, practicing the learners to be more independent in obtaining science.

The e-Learning development strategy is substantially the same as software development one. It says so because e-Learning is a software. In *software engineering*, there are several phases we have to get through in developing a software, i.e.: requirement analysis and specification, design, coding, testing, and maintenance.

The Basic Concept of Mobile Learning

The use of information technology and communication in educational area increasingly develops in various strategies and patterns which are basically classified into *e-Learning* system as the form of learning that employs electronic ware, digital media, and *mobile learning (M-Learning)* as form of learning that specifically utilizes moving ware and communication technology.

The high level, the relatively easy use, and reachable ware cost of moving compared to personal computer are the factors to escalate the use and application chance of *mobile learning* as a new trend in learning that form a learning paradigm that can be carried out wherever and whenever.

Mobile Learning is defined by Clark Quinn (Quinn, 2000) as: “*The intersection of mobile computing and e-learning: accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning, and performance-based assessment. E-Learning is independent of location in time or space*”. Based on the definition, mobile learning is a learning model which employs information and communication technology.

The Plan of M-Education Application

Mobile learning is one of potential alternatives to extend education access. However, there has not been much information about moving ware use, especially celluler telephone as learning media. It may be deplored because the high level of ownership and usage is not employed optimally for education development.

Therefore, BPMP Pustekkom tries to make innovation in model development for learning media program designed purposely. The program is developed in BPMP Pustekkom with special term called *Mobile Edukasi (M-Edukasi)*. Here is the address: www.M-Edukasi.kemdikbud.go.id (WEB) and wap.M-Edukasi.kemdikbud.go.id (WAP). *M-Edukasi* is special name of mobile learning which is basically special form of model from term of generic mobile learning in general. As a system development product, *M-Edukasi* is developed with special format and model. *M-Edukasi* has slogan “*belajar cepat tanpa sekat*” (learning fast without barrier). This slogan describes a mission that by *M-Edukasi* the users can learn fast wherever and whenever without any obstacles of learning time and place.

The Design of M-Edukasi Content

To explain the M-Learning model and format, the *M-Learning* content design (M-Learning Content) must be prepared. The mapping of M-Learning Content is as follows:



Picture of *M-Learning Content*

From content category, *M-Learning* which will be developed by BPMP Pustekkom can be explained as follows: 1). By Type of Version: *M-Edukasi* program which will be developed is based on *Screen Size*, 2). By Type of Application which comprises Drill and Practice, Tutorial, Simulation, Education Games, experiment, and Ensiklopedy. 3). By Topics: temporary development in Science, Math, English, and Geography. 4). User by Educational Level: for education in middle level of both senior and junior high school.

The Content Development of M-Edukasi

Content Development of *M-Edukasi* is elaborated based on Platform, User Interface Design, Development Process, Technical Resources/System Requirements, and Distribution Format.

The content development discussion is elaborated as follows: 1). by Platform: there are some platforms that can be employed to develop M-Learning program, such as: Flash Lite, Java, Symbian, Windows Mobile, and WAP application. For initial M-Learning development, BPMP Pustekkom will develop it by using Flash Lite platform. 2). User Interface Design: *M-Edukasi* is deliberately designed by bending on User Interface Design as follows: opening, introduction, competence, material, simulation, question practices, tests, help, and closing.

1). Opening; Logo of *Tut Wuri Handayani*, Logo of *M-Edukasi*, “BPM Pustekkom Depdiknas” words, in blue (appears with *Zoom from Point* transition effect simultaneously), Navigation => “Masuk” and “Keluar”, and the Background Opening is in black. 2). Introduction; the title of *M-Edukasi* program and a perception (can be in animation, integrated graphic and text, or only text). In introduction appearance scroll facility is not used, Navigation => “Menu” and “Keluar”, and the background color is adjusted with the courses. 3). Competence; about competence which will be achieved by the users after using the program, Navigation => “Menu” and “Keluar”, and the background color is adjusted with the courses, 4). Material ; about material description which can be learned by the users. The material is divided into some menus in which the users can choose deliberately. The material is presented in some kinds of media, i.e.: text, graphic, photo, and animation. The material text is in black, and the text of sub-title is in bold. The material text is presented in Left and per page by using navigation of Next (>) and Back (<). The page position information is given. The text is also presented in Up (^) and Down (v) scroll, the rule of scroll making is maximally 3 times of screen height , ± 500 pixel and ± 1000 pixel for program with screen size of 128x160 pixel and 240x320 pixel, respectively. If there is more pixel, it is suggested to present in the next page. The text explaining foreign term is in italic. 5). Simulation; about simulation emphasized on material. Simulation basically tries to give direct experience for users to experience real condition. There is not always simulation in *M-Edukasi* program, adjusted with the need in chosen topic, and practices. The practices are to practice the users so that they have capability in a skill or strengthening a concept mastering. This program provides various questions which are usually presented randomly, so they will appear differently, or at least in different combination, when used. This program is equipped with correct answers, completed with their explanation. So, it is expected that the users will understand a certain concept. In the last part, the users can see their final score they get as an indicator to measure their success level in finishing the questions. The practices are presented by Drill and Practice type. 6). Test ; the test is about questions for the users who want to know how far they have competence mastering after learning. In the last part, they can see their final score they get as an indicator to measure their success level in competence maturing after learning. The test is presented in Tutorial type. 7). Help ; It is about complete manual in program use. There are also several explanations about related

material reference in website/wapsite of *M-edukasi*. 8). Closing; It is about co-work: care taker, writer, production team, Website/Wapsite address.

The Excess and Weakness of Mobile Learning Program Application

The excess of mobile *learning* program, as in the concept of developing the program, is giving benefit of learning material availability that can be accessed every time and has interesting visualization. The term of M-Learning or Mobile Learning refers to the use of handfull ware like PDA, cell phone, laptop and information technology ware which will be frequently employed in teaching learning activity. In this sense, it will be focused more on cell phone ware. The aims of mobile learning development are: long life learning process, students can be more active in learning process, saving time because students do not meet to attend the class only to submit assignments. They can send their tasks by mobile phone appliation directly so that it will increase learning process quality.

The architecture of *mobile learning* can utilize infrastructure provided by celluler operator, which is principally 3-tier application in which there are layer *front-end*, *application server*, and *database server*. Architecture meaning can be seen as follows:



Picture of *Mobile Learning Architecture*

Moving ware can be employed as offline learning media (without any connection in server system through celluler operator network) or online by employing media GPRS/UMTS(3G) media to connect with repository system as seen in the picture above. The weakness of development and appclation of *mobile learning* BPMP is mobile/HP which is supported with flash player is needed.

CONCLUSION AND SUGGESTION

Conclusion

M-Edukasi program is part of mobile learning development model in <http://www.M-Edukasi.net> / M-Edukasi.kemdikbud.go.id (versi WEB) and wap.M-Edukasi.net. WAP is a learning content program which is developed with mobile/handphone-based model; practical, easy to access, and very useful as learning material for students. The concept of mobile learning (*M-Edukasi*) gives benefit of learning material availability which can be accessed every time with interesting visualization. The models of *M-Edukasi* development which will be developed by BPMP Pustekkom are: 1). Product Version Type, 2). Application Type, 3). Topic, and 4). Target/user.

The *M-Edukasi* content development is elaborated based on; 1). *Platform*, 2). User Interface Design, 3). Development process, and 4). System Development Components and Distribution Format.

Suggestion

There is very little effort of moving-ware-based learning content development which can be accessed widely like *M-Edukasi* program. Most existing contents in market are dominated by entertainment in education aspect created by other countries that have different culture background. Therefore, it needs to have more attention from the government in education aspect as well as from private party to see this reality to be able to make moving-ware-based content/application development which is more in variety, cheap, and easy to accessed by the learners.

The model of *M-Edukasi* program development should be able to give benefit for public. In the future, this program is expected to develop and use for all education level including Early Age Children Education (PAUD).

The content development of *M-Edukasi* program should be able to develop learning quality. There are 3 things, i.e.: (1) Students and teachers must have access in digital technology and internet in class, school, and education institution; (2) There must be cultural support from students and teachers; and (3) Teachers must have knowledge and skill in employing means and digital resources to help students achieve academic standard.

BIBLIOGRAPHY

- Arikunto, Suharsimi. (2007). *Dasar-dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara.
- Consuelo G. Sevilla. (1988). *Pengantar Metode Penelitian*. Jakarta: Universitas Indonesia Press.
- Dick, Walter, Lou Carrey and James O Carey. (2005). *The Systematic Design of Instruction*. Boston: Pearson, Allyn and Bacon.
- Gagne, Robert M. (2005). *Principles of Instructional Design*. Belmont, CA : Thomson/Wadsworth.
- Haryono. (2008). *Pengumpulan Data*. Makalah disampaikan pada lokakarya penyusunan instrumen ujicoba MPI. Semarang.
- Rika Sa'diyah. (2012). *Pengembangan Instrumen Penelitian*. Diakses tanggal 25 Januari 2013 di http://www.fai.umj.ac.id/index.php?option=com_content&task=view&id=39&Itemid=54.
- Muhammad Takdir. (2010). *Teknik Penyusunan Instrumen Penelitian*. Diakses pada <http://muhammadtakdir686.blogspot.com/2010/01/teknik-penyusunan-instrumen-penelitian.html>.
- Moh. Nazir. (2005). *Metode Penelitian*. Bogor: Ghalia Indonesia.
- Mukminan. (2007). *Penelitian Uji Coba*. Makalah disampaikan pada lokakarya penyusunan instrumen uji coba *online* dan *offline* MPI. Semarang.
- Purwanto. (2008). *Metodologi Penelitian Kuantitatif untuk Psikologi dan Pendidikan*. Yogyakarta: Pustaka Pelajar.
- Romiszowski, A. J. (1981). *Designing Instructional System*. London: Kogan Page, Ltd.
- Suharsimi Arikunto. (1998). *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta: Rineka Cipta.
- Sudjana. (1996). *Metode Statistik*. Bandung: Tarsito.
- Singgih Santoso. (2005). *Mengusai Statistik di Era Informasi dengan SPSS 12*. Jakarta: Elex Media Komputindo.
- Samsudi. (2005). *Disain Penelitian Pendidikan*. Semarang: Universitas Negeri Semarang Press.

The Integration of Open Meeting Facility (OMF) into Online Tutorial (OT)

Dodi Sukmayadi, Herawati

Faculty of Education Universitas Terbuka
dodisy@ut.ac.id, hera@ut.ac.id

Abstract

One delivery method provided by Indonesia Universitas Terbuka (UT) including its faculty of education (FKIP-UT) is online tutorial (OT). OT is an alternative for students to support their learning achievement. As is currently implemented, OT consists of several initiating materials aims to invoke student interest to participate actively in OT. OT also facilitates students with forum discussion and three assignments. This article describes the result of the study on the process of integration of open meeting facility (OMF) already provided in the existing OT. OMF is provided by Moodle as a means of student interaction in web-based learning or OT. The study was to develop a model of designing and integrating OMF into OT. Besides, the study aims to determine patterns of student interaction with tutors, and among students, as well as students interaction with the materials provided. The study is also to know the model of evaluation to be applied during the implementation processes which utilizes OMF. The study was conducted at science education department, faculty of education of UT. The result showed that the integration of the web-based open meetings was successfully implemented in OT. One of the important advantages of this integration is facilitating intensive learning for student who lives in remote areas and abroad. The study found that the integration did had huge potential as efficient substitute for face to face tutorial mostly expected by the students.

KeyWords: FKIP-UT, online tutorial, delivery methods, open meeting facility (OMF), ICT

Introduction

Information and communication technology (ICT) has continued to grow, and web-based learning has as well continued to expand. The number of internet users in Indonesia is estimated 48 million users including approximately 46.000 schools have linked with internet connection. While the dominant learning environment in early until higher education continues to be the face to face classroom, the statistics cited are evidences of increased efforts to provide online courses and programs at colleges and universities to meet student needs for flexible access of education. The ever expanding ICT is expected to provide major support in the effort to improve the quality of Indonesia human resources. Indonesia has huge differences in term of geographical condition and population distribution as well as in the level of highest education achieved. Therefore, the need to disseminate ICT's utilization in education is particularly urgent. The dissemination of ICT is to accelerate educational equity and to improve the quality of education through 1) supporting the government intention to implement 12 years compulsory basic education; 2) developing distance education program; 3) providing solutions for a miscellaneous educational problems relating to ICT; 4) providing equitable learning opportunities; 5) improving the quality of education; and 6) improving the quality of human resources.

Universitas Terbuka (UT) including its faculty of education (FKIP-UT) is the only one universities in Indonesia which fully implements distance education (DE). DE means students learn most of the time in a distance from their instructor. They are connected with the instructor through instructional media which are expected to provide interaction as much as necessary. One interactive learning process in FKIP-UT was delivered through online tutorial (OT). In this way, FKIP-UT can provide learning process or support for the students who live in various parts of Indonesia. OT is a learning support for student to solve learning problems especially in understanding subject matter area. The purpose of OT is to elaborate and discuss essential concepts which are considered difficult to understand. OT is especially useful for students who have internet access either individually or through public facilities. In an OT, students can communicate and interact with their tutor at any place and at any time. OT as is currently implemented lasts for 8 weeks in a semester. During OT activities, tutor should provide 8 initiations of the material as well as 8 discussion's session, and 3 assignments to be done by students. To implement OMF, OT is using software called Moodle, a Learning Management System (LMS) freely available (Open Source) in <http://moodle.org>. Several advantages of Moodle are simple, efficient, compatible with any browser, easy to install, available at various languages, available for various facilities (chat, forum, journal, and quiz), and –as is needed by the study reported in this paper- is equipped with OMF (open meeting or web conference).

This paper describes the integration of OMF in FKIP-UT's OT. The paper begins with a definition of OMF, and then, proceeds to describe how to integrate OMF with OT and how to use OMF as well as how the interaction and the perception of the student in utilizing OMF in an OT.

Video conferencing as interactive media

In education, including in distance education (DE), interactivity is the most important part in learning process. Interactive learning process is believed as an added value to improve the quality of education. According to Moore (1991), there are three types of essential interactions in DE. They are learner–content interaction, learner-instructor interaction and learner – learner interaction. Learner–content interaction is defined as the non–human interaction the student has with the subject matter. These include interaction with course content, lessons, learning activities, videos, assignment, websites, and projects. Learner-instructor interaction is defined as the human interaction consisting of two way communication between the learner and the instructor. Learner-learner interaction is defined as the human interaction consisting of two way communication between the learner and other learners. The last two types of interaction may be facilitated via email and discussion board. Meanwhile, Bates (1995) mentioned two interaction types, i.e. individual interaction or isolated interaction (interaction between learner and subject matter) and social interaction (interaction between two more other people).

One feature of interactivity in DE is that it is “very difficult and very expensive” in terms of the effort and the cost to design of high quality media to create interactivity between learner and content (Padmo, 1997). One interactive media which fits with such is video conferencing (VC). VC is a set of interactive telecommunication technologies which allow two or more people in different locations to interact via audio or video simultaneously. In technical terms, VC is basically using audio and video streaming compressed in real time system. The emergence of compressed video technology provides opportunities to implement VC at a lower. The technology is getting cheaper and the number of instructors can be reduced drastically (compared with the face to face tutorial, for example) (Padmo: 1997). VC needs to be equipped with several hardware and software. The hardware components required are computer, web camera, microphone (for audio input), and LAN or internet. Meanwhile, its software components are server, web based software, free open source software (including OMF).

Open Meeting and the Feature

OMF as described by Googlecode is a free browser-based software that allows you to set up almost instantly a conference in the Web. To optimize OMF, we can among others use microphone or webcam, share documents on the white board, and share our screen or meetings' notes. They are all available as hosted service, so that each participant can download and install a package on his/her server with no limitations in usage or users.

OMF feature in online tutorial using Moodle consists of:

1. Single Sign On from Moodle

To access in open meeting, students can be sign up into OMF directly.

2. Use different room types: Conference (max 16 participants), Audience (max 32 participants), Webinar (max 150 participants)

- Integrate Recording we have made into Moodle directly.
- Control default moderator settings from Moodle (Moodle teachers are always moderator in the conference rooms).

3. Audio and video conferencing

Open meeting have four modes of audio/ video conferencing which users can select during a conference session.

- audio + video
- audio only
- video only
- fig. only

Users can change video/audio, multiple camera resolutions (4:3, 16:9 or 3:2) and various input devices.

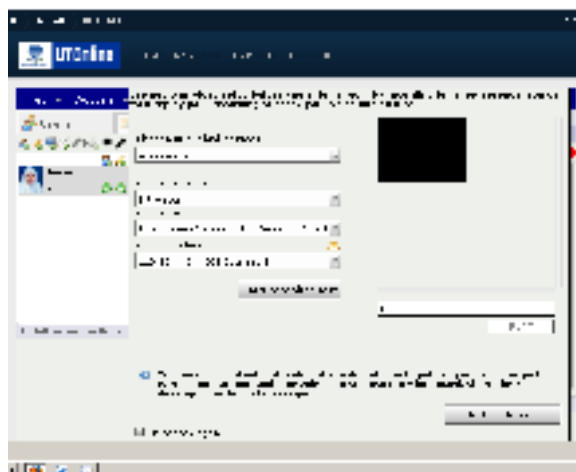








Fig. 1. Selection of mode of audio/video conferencing

4. File explorer

Users can upload and download various types of file format. Each rooms has its own file explorer, and every user have private drive file explorer which can contain their own files and the same files as those owned by the tutor. Every user has as well as public drive file explorer to facilitate the conference/discussion.

5. Moderating system

During a conference, the moderator can adjust the user permission to every user individually.

-  Allow/Deny moderation
-  Allow/Deny to draw on white board
-  Allow/Deny screen-sharing/record screen
-  Allow/Deny Remote Control Screen
-  Give exclusive audio to others or self
-  (Re-) Start Audio, Video or Device settings

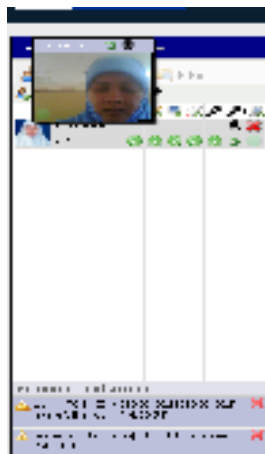


Fig. 3. Moderating system

6. Meeting recording and share screen

In conference room, every meeting among users can be recorded including all audio or video streaming.

7. Multi - whiteboard and chatting

In Multi-Whiteboard, users can add new whiteboard instances. Each white board can have the full range of tools and documents inside. Users can import from a various document formats (DOC, PPT, ODT, PDF, and etc.). In addition, every user can save

each white board instantly as a file and the file will automatically located in the file explorer and can be dragged and dropped to the white board again and organized like any other document, image or folder. Thus, in the whiteboard, users can can write, drag n drop, resize images (Drag n' Drop from File-Explorer), use symbol(s)/clipart, as well as set the screen to be 100% view.



Fig. 3. Multi whiteboard and chatting activity

8. Private Message Centre

Users can send messages and organize them in folders. Users also can book conference rooms by sending private messages. The booked event is automatically saved in the participants' calendar, changes to that event will be shared to all users booked to the event. To contact the some other participants, user can search and add them in the contact.

9. Plan Meeting With Integrated Calendar

Every meeting in conference room is planed through integrated calendar. Users can plan the conferencing and invite attendees from Open Meetings. The invited attendees will receive an e-mail with details required in the meetings.

Integration OMF into UT online tutorial

The integration of OMF in UT online tutorial is intended to support student learning and to facilitate the meeting between tutor and student in discussing learning material. To integrate the OMF into OT, tutor first added the OMF which is available at OT activity. Furthermore, tutor can design and prepare the OMF including audio/video selection, materials to be uploaded, discussion topics, conference room, and chatting modes. To begin the conference activity, tutor should invite the student by email.



Fig.s 4. Step by step of OMF integration into OT

Every students can access to OMF if they have account to be registered in OT and do a "Sign in" on OMF directly. Students then can enter the conference room if they have been invited by the tutor. This integration of OMF into OT was conducted in physics subject matter i.e. solid state physics. The data collection consists of survey using questionnaire to get students' perception of OMF integration to OT and an in-depth interview by the tutor. The data was collected in the first semester in 2012.

Data showed that the students' felt that the integration of OMF into OT very helpful to support their online learning. The students very agree that OMF can assist their understanding the lessons and are happy to interact and communicate with tutor, learning materials and other students via video conferencing. Furthermore, the students very agree that they can ask questions and discuss as well as get feedback -written and orally- by the tutor through chatting facility. The students felt video conferencing with the tutor make them enjoy the learning materials.

However, there are some constraints in integrating OMF into OT. Data showed that students can access to the OMF easily only if their internet connection had good signal strength. Thus, students who live in urban area of big cities in West Java can have that good signal strength. But, in rural area (such as in Mojokerto, East Java), Indramayu (West Java), Purwokerto (Middle Java), Padang (West Sumatra), students could not access the OMF due to lack of the internet connection.

Last Remarks

The results showed that the integration of OMF into UT online tutorial has been implemented successfully. This integration of OMF needs to be developed in UT online especially to assess the evaluation of online learning. But to do more widely, it is of course needs the full support from the government of Indonesia to provide a huge bandwidth (internet connection) to all Indonesia's area.

References

1. Bates, A.W (Tony). (1995). *Technology, e-learning, and distance education (2nd edition)*. Rotledge, New York.
2. Garrison, d Randy & Cleveland-Innes, Martha. (2004). *Facilitating Cognitive Presence In Online Learning: Interaction Is Not Enough*. The American Journal Of Distance Education, 19(3), 133–148. Diakses tanggal 3 Maret 2012.

3. Moore, Michel G. and Kearsley Greg (1991). *Distance Education, a system view*. Wadsworth Publishing Company. California
4. Universitas Terbuka (2012). *Software Open Meetings Manual*. UT. Tangerang
5. Padmo, Dewi. (1999). *Interaktivitas dalam Proses Belajar Mengajar Pada Sistem Pendidikan Jarak jauh Melalui Media dalam Cakrawala Pendidikan*. Universitas terbuka. Tangerang.
6. <http://incubator.apache.org/openmeetings/index.html>, accessed July, 30 2012.

IMPROVING STUDENTS' MOTIVATION OF LEARNING THROUGH THE USE OF BLENDED LEARNING: CASE STUDY OF SMKN 1 BANTUL

AlitaArifianaAnisa¹, AnnisaRatna Sari²

^{1,2}Yogyakarta State University

¹bukand_oshin@yahoo.com, ²annisars.uny@gmail.com

Abstract

The purpose of this study is to improve Student's Learning Motivation through the use of Blended Learning Strategy. The subject of this research is the students of XAk3 class of Accounting Program at SMK N 1 Bantul. The research was implemented in the second semester of Academic Year of 2012/2013. This is a Classroom Action Research study which is done in two cycles using two kinds of data collection techniques, i.e. observation and questionnaire. The observation was used to capture the self-readiness, participation, enthusiasm, and attendance indicators; while the questionnaire was used to capture the correlation indicator. The collected data were analyzed using qualitative analysis. A descriptive analysis was used to calculate the students' score of Motivation of Learning in Accounting Subject. Based on the research result, the implementation of Blended Learning was able to improve students' Learning Motivation classically. It is shown by the improvements of XAk3 class's average score of Learning Motivation from 78.45% in the first cycle to 85.46% in the second cycle. In addition, the number of students who were able to fulfill the successful criteria also increased, from 17 students in the first cycle to 26 in the last cycle, from a total of 33 students.

Keywords: blended learning, motivation of learning, accounting subject

INTRODUCTION

Education is one of the most strategic solutions for countries that aim to improve the quality of life. Education works best if all the component of education make a reciprocal relationship among them and perform well during the implementation of teaching and learning activities (Siswoyo,2008:33). As one of the tools of education, school is a strategic meeting point for the majority components of education in a process of teaching and learning. Teaching and learning activity itself is influenced by motivation which can be defined as the powers inside the learners' selves that stimulate the learning activities, keep the continuity of the learning activities, and give a clear direction to achieve the learning objectives.

The motivation of learning usually related to students because the object of learning laid in the students itself. Since students' motivation in learning is considered essential, Slavin (2009:134) stated that teachers could use interesting and high variety of teaching methods in transferring knowledge. Hence, the students' motivation in learning can be improved.

Related to teaching methods, there are various types of teaching methods which can be used in three classification of learning delivery, i.e. class-based learning, online learning, and blended learning. The class based learning is the conventional way to deliver learning through the use classroom. In this typical of learning delivery, students and teacher are attending a class session physically; while the online learning is the opposite of it. The online learning gives a lot of flexibility because students and teacher are not required to meet physically. It is believed to be low cost, but it also gain some critics regarding the absent of social interaction, the difficulty for teachers to monitor their students directly, etc. Thus, blended learning seems can be utilized as the solution to bridge the gaps between class-based learning and online learning.

Blended Learning is a strategic alternative of learning through the mixture use of class-based instruction with computer-based instruction (Graham, 2004:3). Blended Learning use variety ways of instruction in delivering learning materials to the students. Furthermore, Graham (2004) listed several benefits of Blended Learning which make it gain its popularity, including: the high variety of ways in transferring knowledge in face-to-face interaction, the high variety of forms of learning material which can be uploaded on e-learning, the use of familiar social media which close to teen lifestyle, flexibility access to knowledge, and cost effectiveness. In addition to that, some experts also stated that collaboration and self-regulated learning are also turn out to be the advantages of Blended Learning.

The X Ak 3 at SMK N 1 Bantul, where the research done, researcher found that students did not ready to enroll the class. These preliminary findings showed that 15.15% students of the class did not bring their homework, and 21.21% students of the class did not

bring books to school which is essential as the source of learning, instead they just brought notes to record teacher's explanation.

During the lesson, the preliminary findings indicated that only 2 students out of 33 students were participating by asking questions to the teacher, more than 75% of the students of the class were not enthusiastic in doing assignment, instead they were waiting for the teacher explanation rather than doing their assignment. More than half of the students of the class did not pay the attention to teachers' explanation. Some students asked for permission to go outside the class during the lesson, some students discussed with their peers during individual task and did not give a good respond to the teacher.

The students' ability in correlating the material learnt on class to their daily life is important as one indicators of students' motivation in learning. The preliminary finding indicated that only 14 students had this ability, while some others had not.

In terms of students' attendance, the quality of students' attendance was not good because some students came late to join the class. This indicates that some students are not motivated to join the class.

Usually, schools already set the minimum criteria standard that is called KKM (or in Bahasa we called it *Kriteria Ketuntasan Minimal*) that applicable to all standard of competencies. Similar to SMK N 1 Bantul, they also have KKM to indicate the success of students' learning. The preliminary finding showed that 27% of students in class did not pass the KKM score of first standard competency of basic accounting subject.

All of those preliminary findings listed on the previous paragraphs indicated that there are only some students out of 33 students of the class which fulfilled the indicators of motivated student from Tom Kourentes (in Metler, 2011). Those indicators of motivation including: have the self-readiness to enroll the class, actively participate during the lesson, enthusiastic in enrolling the class activity, have the high quality attendance and able to correlate the material to their daily life. But in contrary, the school has potential facilities which can be optimized to improve students' motivation in learning, such as wireless fidelity and e-learning system.

Based on the explanation above about the condition of X Ak 3 class of SMK N 1 Bantul, the research is aimed to improve the students' motivation on learning of X Ak 3 class of SMK N 1 Bantul through the use of Blended Learning.

DISCUSSION

This research is a Classroom Action Research (CAR) which is done in January-February 2013. CAR is an observation of teaching and learning activities in a form of action (Suharsimi, 2008:3). This CAR uses the Margaret Riel's model with two cycles. Each cycle contains of four steps. They are learn and plan, action, collect and analysis data and reflection. The first and second cycle will be held in two meetings of accounting subjects. The subject of this research is 33 students of XAk3 at SMK N 1 Bantul, while the object of the research is students' Motivation in learning accounting.

The definition of Accounting Learning Motivation is all the activator power to make people learn and keep them learning about accounting information system that contains identifying, recording and communicating the economic events of an organization to the interested users.

According to the research done by Tom Kouletes in Highland Park School there are five behavior aspects show students' range of motivation (Metler, 2011:428):

- 1) Self Readiness
- 2) Participation
- 3) Enthusiasm
- 4) Attendance
- 5) Correlation (represent the ability of students to find the correlation between the materials to their daily life activities).

Students' motivation itself is an intrinsic factor that comes within the students' selves. Thus, the data collection of Students' Motivation needed to be done carefully. This research using two data collection techniques, they are:

1. Observation

The observation technique aims to collect the data related to Accounting Learning Motivation that occurs during the implementation of Blended Learning. The data collected from observation in the first and second cycle are going to be counted and presented to find the class average of Accounting Learning Motivation. The observation also implemented to observe and record the phenomenon inside the classroom activities in the form of field notes which is beneficial to provide additional information and review for the

next cycle. The observation uses to collect the data related to self-readiness, participation, enthusiasm, and attendance only, because the last indicator i.e. correlation is constructed by the phenomenon after the learning process. Hence the researcher will not be able to observe the phenomenon using observation technique.

2. Questionnaire

Questionnaire aims to collect data from students related to Accounting Learning Motivation which is going to be done after the implementation of Blended Learning in each cycle. The Questionnaire mainly aims to collect the data related to correlation indicator which is not easy to be observed physically.

Based on those two data collection techniques, it can be concluded that Blended Learning is able to improve students' motivation in Learning. The successful criteria of the Classroom Action Research define by the improvement of Accounting Learning Motivation of XAk3 at SMK N 1 Bantul Academic Year of 2012/2013. Mulyasa (2006:101) states that the teaching and learning activities is successful when more than 75% students are ready, participate, enthusiasm, attend the class and able to correlate the material to daily life and previous knowledge. The student was indicated as ready, actively participate, enthusiastic, has a good quality of attendance and able to correlate the material to their daily life and previous material if they were able to reach the score of 75% for each indicator.

The improvement from the first cycle to the second cycle is shown by table 1:

Table 1 The Improvement Analysis

Indicator	Average Score (%)		Improvement (%)
	First Cycle	Second Cycle	
Self-Readiness	81,06	86,74	5,68
Participation	81,06	85,61	4,55
Enthusiasm	77,27	87,88	10,61
Attendance	81,82	90,91	9,09
Correlation	71,02	76,14	5,12
Score of Accounting Learning Motivation	78,45	85,46	7,01

The table above shows that the score of Accounting Learning Motivation increases from 78,45% to 85,46% after the implementation of Blended Learning the second cycle. Besides, the improvements of students who are able to reach the successful criteria also increase from 17 students to 26 students on last cycle.

Self-Readiness

The Self Readiness indicator is collected by observation. It covers two aspects, i.e. readiness in preparing the material they are going to learn on the day and readiness to collect the homework given by the teacher on the previous meeting. The average score of self-readiness indicator increases up to 5,68 % (from 81,06% to 86,74%). The number of students who are ready to enroll the class also increase from 27 students to 31 students out of 33. The improvement also occurred from the first cycle to the second cycle. The average score of motivation in the first cycle increases 5.68% in the second cycle. The number of students who are able to cover the successful criteria also increases to 96.96% students of class.

The Blended Learning Strategy stimulates the student to have better preparation to join the class by providing the supporting kinds of material uploaded to the e-learning to support students' compulsory book. Sardiman (2009:40) states that to know what to learn is the good beginning to learn. By accessing the material first, students know what they are going to learn so that they are more ready to learn. Blended Learning facilitates the student to access the material they are going to discuss. Thus, while the teacher explains the material on class student has already read the material and become easier to get the knowledge the teacher wants to deliver. In addition, the self-readiness to join the class will affect how the students giving responses to teacher's feed, confirming during lecturing or asking the materials that teacher forgets to explain, and doing the exercise autonomously.

Participation

The researcher collected the data related to students' participation by the observation concerns in two aspects, i.e. students' participation in joining class discussion and students' participation in finishing the assignment.

From the first cycle the average score rises 4,55% (from 81,06% to 85,61%). The second cycle concerned to keep and optimize the score of the students who are already reach the successful criteria and also increase the score of students who have not reach the successful criteria. The strategy for the second cycle is increasing the teacher's attention to the students who are lazy to give responses or ask questions and providing worksheet form

on the e-learning to increase student's time optimization to do assignment. The strategy went well, the average score of participation rises to 85,61% with all the students successfully reaches the successful criteria on the second cycle.

Blended Learning strategy provides the material students going to learn, so that the students are able to read first before enrolling the class. When the teacher does the apperception, students are easily connected what the teacher explaining to the knowledge. When the teacher asks them questions during explaining the material, students are able to give responses because they have been read the material teacher talks about. Moreover, students are able to ask question about the material teacher's forget to explain, ask for deeper explanation and warn the teacher if there is any mistake in explaining the material because they had and attracted to read the interesting kinds of material. In doing the assignments, the material and exercise uploaded on the e-learning also helpful for student to optimize the time allocation for assignment. They are able to finish the assignment easier when they have been attempted to finish the similar exercise on the e-learning. If the students face any difficulties in doing assignment, they are able to re-read the material on the supporting module of review the demonstration of cases on the module. The phenomenon explained by the findings of Faculty at Mercy College that the Blended learning is able to increase students' collaboration because of the high variety of learning styles, increase learning interactivity, and meet the special needs of online students (Dziuban, Moskal, & Hartman, 2004:5).

Enthusiasm

The transition from the first cycle to second cycle shows that the average score of enthusiasm increase from 77,17% to 87,88%. Besides, the number of students who is enthusiastic increases fro, 23 students to 31 students out of 33 students.

The students' readiness in enrolling the class stimulate the students to prompt and allow the students to do the efforts to finish the assignment by reading the material on their own, looking for further explanation on book or module and comparing the assignment given by the teacher to the exercise or example on the supporting material on e-learning. The variation of material uploaded on e-learning attracted the students to look for the material, read the information, and do exercise themselves. The varieties of materials formulated and provided on e-learning become the stimulation for students to be enthusiastic to look for explanation and case demonstration in order to finish their assignment, as what Syaiful (2006:164) states that the varieties of the way teacherdelivering the learning materials, and interaction during learning process causes the desire for to learn.

Attendance

The quality of attendance is hard to be manipulated by Blended Learning, consequently, the result of the observation more depends on the environmental factors and culture; as Dimiyati and Moedjiono (2002:97) states that students are the part of environment so that the motivation is influenced by the environment around students, i.e. school environment, social environment and natural environment. The XAk3 at SMK N 1 Bantul has kind of culture to have lunch together on the first break. The time for lunch spent the time allocated for break so that students' quality of attendance decreases after the first break, the similar culture they do on the second break is prayer together which causes the same effect. Besides, some of students join school organization which occasionally coordinates each other on the accounting subject time. The kind of social environment at school caused the inconsistent quality of attendance. The first transition, from the pre research to the first research, the quality of attendance decrease from 96,97% to 81,82% and the number of students who own the attendance score at least 75% decrease 9,9% from 100% to 90,90%. The analysis of second transition shows that average score rises from 81,82% to 90,91% with all students have the good quality of attendance.

Correlation

Correlation can be improved by providing cases, exercises or examples which are close to students' daily life, but it is hard to provide the cases, exercises, and examples which are able to covers all kinds of students' life background. Example A may be suitable to students A but not for student B, example B is suitable to student B but not for student A. That is why the correlation indicator is hard to design for optimal score. The score of correlation indicator is increase from 71,02% on the first cycle to 76,14% after the implementation of the second cycle.

CONCLUSION

Based on the research result and discussion, the implementation of Blended Learning is able to improve students' motivation in learning of XAk 3 class at SMK N 1 Bantul. The judgment is proven by the increase of Accounting Learning Motivation score that is collected by observation for four indicators (i.e. self-readiness, participation, enthusiasm, and attendance) and questionnaire for one indicator (i.e. correlation) from 78,45% in the first cycle to 85,45% in the second cycle. In addition, the increase of the number of students who

are able to reach the successful criteria from 17 students in the first cycle and 26 out of 33 students in the last cycle ensured the result that under the Blended Learning strategy, the students' motivation in learning is increase classically.

References

- Dimiyati&Moedjiono.(2002). *BelajardanPembelajaran*.Jakarta :PT.RinekaCipta.
- Dzibuan, C.D.,Hartman, J.L.,&Moskal,P.D. (2004). "Higher Education, Blended Learning and the Generations: Knowledge is a Power – No More". Retrieved February 21, 2013, from: <http://www.sc.edu/cte/dziuban/doc/blendedlearning.pdf>
- Graham, Charles R. (2004). *Blended Learning Systems: Definition, Current Trends, and Future Directions*. Retrieved September, 20, 2012.http://www.publicationshare.com/graham_intro
- H.J Klein, R.A Noe, C.Wang. (2006). *Personnel Psychology*.Wiley Online Library.Retrieved September, 21, 2012.<http://onlinelibrary.wiley.com/doi/10.1111/j.174-6570.2006.00050.x/abstract>
- J.J Weygant, D.E Kieso, P.D Kimmel. (2002). *Accounting Principles.6"*.ed. John Wiley& Sons, Inc.
- Makmun, Abin. (2004). *PsikologiKependidikan*.Bandung : PT. RemajaRosdakarya
- Metler, Craig A. (2011). *Action Research MengembangkanSekolahdanMemberdayakan Guru*.Yogyakarta :PustakaPelajar
- Mulyasa. (2009). *Menjadi Guru Profesional: Menciptakan Pembelajaran Kreatif dan Menyenangkan*. Jakarta: PT. Grasindo.
- Mustaqim.(2008). *Psikologi Pendidikan*. Yogyakarta: PustakaPelajar.
- Parkay, Forest W. (2010).*Becoming a Teacher.8"*.ed. New Jersey : Pearson Education Inc.
- Purwanto, Ngalim. (2007). *Psikologi Pendidikan*.Bandung : PT. RemajaRosdakarya.
- Sanaky, Hujair A.H. (2011). *Media Pembelajaran Buku Pegangan Wajib Guru dan Dosen*. Yogyakarta: KaukabaDipantara.
- Sanjaya, Wina. 2011. *PenelitianTindakanKelas*. Jakarta :Kencana.
- Sardiman.(2009). *Interaksi dan Motivasi Belajar Mengajar*. Jakarta: PT.RajaGrafindoPersada.

- Schunk, D.H., Pintrich, P.H., & Meece, J.L. (2010). *Motivation in Learning.3*.ed. New Jersey : Pearson Education Inc.
- Singh, H. & Reed, C. (2001). "A White Paper: Achieving Success with Blended Learning". Retrieved June, 18, 2012, from: http://facilitateadultlearning.pbworks.com/f/blended_learning.pdf
- Siswoyo, Dwi, et al. (2008). *Ilmu Pendidikan*. Yogyakarta: UNY Press.
- Slavin, Robert E. (2009). *Psikologi Pendidikan Teori dan Praktek.8*".ed.Jakarta : Indeks.
- Soemarsono S.R. (2004). *Akuntansi Suatu Pengantar Revisi*. Jakarta: Salemba Empat.
- Sugihartono, et al. (2007). *Psikologi Pendidikan*. Yogyakarta: UNY Press.
- Sugiyono.(2009). *Metode Penelitian Pendidikan*. Bandung: CV Alfabeta.
- Syaiful B.J. & Aswan Z. (2006). *Strategi Belajar Mengajar*. Jakarta: RinekaCipta.
- Suharsimi Arikunto, et al. (2008). *Penelitian Tindakan Kelas*. Jakarta: Bumi Aksara.
- ZainalArifin. (2010). *Evaluasi Pembelajaran*. Bandung: PT.Remaja Rosda karya.

INTEGRATING CHARACTER DEVELOPMENT IN PROFESSIONALS CAPABILITIES STRENGTHENING (PKP) GUIDANCE OF STUDENTS OF S1 PGSD COURSE

Edi Prayitno

Open University, UPBJJ Semarang

edip@ut.ac.id

Abstract

Student behaviors such as cheating and bullying are the evidences of the need for efforts to develop character in the elementary school. Integration of character development efforts in Professionals Capabilities Strengthening (PKP) guidance is intended to broaden student insight to integrate character development into the learning process. This research used experimental techniques on students of S1 PGSD course in Kudus District. The results showed that some of the character development efforts successfully integrated in the experimental group. The characters which were successfully integrated were: 1. bravery to express idea, 2. attentive character. 3. independence character and 2. perseverance character and 4) neat character.

Keywords: Character Building, Professional Competency Strengthen, Elementary Teacher

Preliminary

Learning process in the elementary school does not touch the realm of character development. There are still many reports of fights among students, reports of less commendable behavior of the students in the school and in our environment, such as copying answers, lack of respect for teachers reprimand, copying homework, less responsive to domestic work and less concerned about the order or advice of the elderly. Although examples of attitudes and behaviors that reflect good character has been done by the teachers, but all of them disappeared without leaving any traces in the minds of students. Examples of attitudes and behavior that displayed by the teachers are regarded as a regular occurrence by learners. They have seen some similar attitudes and behaviors in the home, on the street or on television. The exemplary behavior was covered in the shadow of the behavior that justifies any means to achieve the goal. Learners have never understood the

meaning and benefits of noble behavior. In their minds, there are only examples of behavior that facilitate obtaining all desire.

The character education is getting unseen as the students watched their role models do not care about the breach of rules or norms that occur in the environment. Students need a systematic step in the development of character. According Wibowo (2011) systematic step in the development of the characters is done through three main steps, namely planting knowledge of noble character, environmental conditioning and conditioning emotion when learners absorb that knowledge.

Professionals Capabilities Strengthening (PKP) guidance is intended to enhance the ability of students in the learning process and in resolving issues emerge in learning.

Character education as one of the focus of the Indonesian Ministry of Education and Culture since 2010 must be taken in the field operations. In PKP guidance writer, tutors and students tried to integrate character development in learning process in elementary school.

Professionals Capabilities Strengthening (PKP)

Professionals Capabilities Strengthening (PKP) (PDGK4501) is a course that was designed to enhance the ability of teachers to become professional teachers. Teaching profession claims ownership of scholarly habits and the ability to plan, implement, discover strengths and weaknesses in learning and improve subsequent learning (Andayani, et al: 2009). This subject is taken by the students of the S-1 Primary Teacher Education Program (PGSD) in the tenth semester. PKP provides some instructions and trainings to enhance students' abilities and habits in applying the principles of class action research (PTK).

In the first step of PTK guidance, students are guided in reflecting on the learning process that has been done so far to find, analyze and formulate the problem of learning on their own class. Analytical results is used to determine an alternative learning improvement, which includes determining the method or model, its learning design, learning steps, learning aids and learning media.

Alternative improvement is expressed in the form of Learning Improvement Plan (RPP) which is completed with the evaluation of learning outcomes. RPP is executed in his own class with the assistance of supervisor 2.

During the learning process, supervisor 2 helps students in assessing the implementation of learning through Teacher Capability Assessment Tool (APKG 1 and APKG 2) and in making a record of teaching performance. APKG 1 is used to assess the ability of the learning improvement plan and APKG 2 is used to assess the ability of students to show learning. In

the subsequent guidance, supervisor 1 directs students to evaluate the process and the learning outcomes.

PKP is a subject which forces students to show all of students' abilities and competencies that have been acquired since their participation in S1 PGSD Program. Students' abilities are enhanced by the breadth and depth of insight that they had in the decision-making situational or transactional.

PKP facilitates students to develop their professional skills in evaluating and resolving learning problems that they encountered in their daily activities. In the final guidance, students have to hold the results and learning improvement efforts that have been done scientifically in the form of class action research report. (Andayani, et al., 2009:1-5).

The integration of character development into the PKP Guidance has a dual purpose, namely: 1) guiding students in completing PKP tasks and 2) guiding students to integrate character development in teaching process. The integration of character development into the PKP Guidance is intended to enhance the student skills to design, display, reflect and improve learning deficiencies which include efforts to improve the quality of character of students in elementary school.

Guidance Device

One of success factors of PKP guidance is the availability of the guidance devices. PKP guidance process which includes guiding the learning process of observation, reflection coaching, mentoring to organize learning improvement plan, and guiding to make activities report requires a set of guidance device in accordance with the type of guidance that is done. Guidance devices that were required are: 1) Instructional Analysis, 2) Tutorial Activity Plan, 3) Tutorial Activity Unit, 4) Assessment sheet which includes lesson plans sheets (APKG 1), teacher performance appraisal sheet (APKG 2), 5) Journal guidance, and 6) the observation sheet of character development.

Character Development.

Character is a set of behaviors that defines the quality of the learning outcomes of individuals. Characters associated with the attitudes and values of life. Although it is difficult, but the characters can be changed through conditioning, training and experience. If you see a behavior that is incompatible with your heart, open the possibility of a person's character will change for the better (Kurtus, 2011). The same opinion was expressed by Wibowo (2011) which stated that character development could be done through conditioning the environment, planting knowledge and learners' emotional conditioning. Environmental

conditioning step, planting knowledge and emotional conditioning were done in an integrated manner in accordance with the conditions and nature of the learning material.

Efforts to develop the characters are inserted in all the steps of learning, as well as in all school activities. Internalization of noble character are developed at every opportunity. Internalization of values includes values introduction and students' emotional and environment conditioning. The introduction of good values is carried out by exposing to literature and to example behaviors. Mental and environmental conditioning is carried out by emotion Cultivation of knowledge, and by awareness noble behavior.

PKP guidance is given by supervisor 1 and the supervisor 2. Supervisor 1 guides to organize learning improvement plan, to reflect learning outcomes and learning practices compiling reports. Supervisor 2 observes the learning process. PKP guidance is given by supervisors for learning improvement training activities with each supervisor guides up to 15 students (Rakernas UT, 2012).

PKP Guidance Steps

PKP guidance was given in eight times of tutorial that began in early September 2012 and ended on the third week of November 2012. The integration steps of character development into the learning process was inserted in the first three tutorial. Span of time between the first and second guidance was two weeks.

The first guidance was held on September 2, 2013. In the first guidance, students acquired materials: 1) the purpose of the PKP course; 2) activity plans for one semester; 3) character development priorities; 4) the meaning of the integration of character development in PKP guidance; 5) steps for character development through learning process; 6) process for restructuring the observation sheet and 7) the examples of application character development efforts in a real-life in everyday school environment. At the end of the first meeting, students were given a task to organize a lesson plan. The lesson plan has to be consulted within two days, has to be conducted in the next two days and has to be consulted in the second PKP guidance.

The lesson plan was prepared with accompanying efforts to develop the character of students of elementary school. Students are given examples of lesson plan and guidelines for developing the character of students during the learning process.

The guidelines Signs will include guidelines in preparing lesson plans, display signs in learning, preparing signs in the observation sheet and signs in reflecting learning outcomes.

In three days after the tutorial, via e-mail the students should already have to submit lesson plans and plan of prepared observation sheet. Until the end of the first week both tutors should have to read and give feedback on all the lesson plans and the plans of the student observation sheet which had been sent.

In the first two days of the second week the students should already have to communicate the lesson plans and sheets of observations with supervisor 2. Supervisor 2 needed to understand the learning process that would be observed as well as knowing how to carry out observations. In the third and fourth days the students should already have to show learning with guidance of supervisor 2. In the last two days before the second meeting, the students should already have to prepare a report on the results of learning in their school.

Characters that had been developed during the learning were internalized in the self-learners through exposure to the noble values of the characters in the environment of the learners, the appearance of behavioral role model in the life of the school environment, and pedagogical efforts when there is deviant behavior. Exposure to high values of character was carried out by displaying posters or slogans on the walls inside and outside the classroom.

Second guidance was carried out on September 16, 2012. Activity in the second guidance covers: 1) classical guidance in reflecting learning outcomes, 2) classical guidance in composing learning improvements master plan 1 and 3) individual counseling in reflecting character development steps in the learning process. Second span of time coaching with a third guidance is two weeks.

Guidance in reflecting the learning outcomes was carried out based on the observation sheet of learning achievement indicators. The students reflect on their own learning outcomes with the classical direction of a tutor. The average score of each indicator was compared to the minimum completeness criteria. The purpose of learning was said have been achieved when every indicator achievement scores at least equaled to the minimum completeness criteria.

Learning Improvement Plan 1 contains material for indicators that had not met the minimum criteria and mastery of new material as demanded by the curriculum. Material changes had consequences to indicator changes to be observed so that there was a need to re-fill indicator of achievement observation sheet. The process of composing Learning improvement plan preparation and observation sheet of learning achievement indicators by each student based on classical guidance by tutor.

Reflection guidance in preparing their character development steps was done on an individual basis. Although the guidance is done individually, but it was likely all the students

who attended listened to join coaching process. Individual guidance requires quite a long time for each student so often in a meeting not all students obtain their turn to consult. Students who do not obtain turn consulted were given the opportunity to consult via email or consult outside of tutorial. Reflection is done by looking at the correspondence between the description step, step placement, learning conditions and character that will be developed with the emergence of a visible effort

In three days after tutorial, the students should have had to consult their lesson plans and their observation sheet of character development steps via email. Both tutors should have to correct and give feedback at least one week before the next meeting. Students should have to learn to communicate their improvement lesson plan 2 and their two observation sheets (i.e observation sheet of achievement indicator and observation sheet of character development steps) with supervisor 2 on the second day of the second week. Two days before the third guidance, students had had to carry out second learning. The outcomes of reflecting on learning and the outcome of reflecting the character development steps had to be finished by the time of the third guidance.

The third guidance was held on September 23, 2013 with the aim of guiding the steps of reflection and learning improvement plan 2. The third guidance activities were similar to the second guidance activities which include: 1) classical guidance in reflecting the learning outcomes, 2) classical guidance in learning improvement plan 2 and 3) individual counseling in reflecting character development steps in the learning process. Sequence of steps and each step resolution range were similar to the second guidance.

Character Development Results

Professionals Capabilities Strengthening (PKP) guidance with character development has more workload when compared with PKP Guidance Ordinary. More workload in question is creating instructional design with character development efforts of primary school learners. The burden should be borne by all parties which involved in the counseling process, especially students. The load affects achievement assessment scores and score of the third observation variables, ie activity variables, process skills variable and variable of conducting learning proces with character development.

Percentage of students' activity in finding issues that would be taken into classroom action research (CAR) were moderate (by 66.90%), but their process skills in finding problems is low, amounting to 59.29%. Both of these variables have not reached the minimum mastery level of 75%. Failure to achieve a minimum level of mastery in activity aspect reflected students' unconcern to find the problems of their learners' learning difficulties. While not achieving a minimum level of mastery in the aspect of the process skill reflects problems that

they are less accustomed to identifying learning difficulties experienced by their learners. Both of these conditions shows that in the daily practice of teaching the students pay less attention to learning difficulties learners.

After obtaining guidance in composing and carrying out the learning plan (RP), the students were able to complete the process of preparing and carrying out lesson plan skills despite their activeness in preparing RP did not reach the minimum mastery score (score activity of 60.69% for cycle 1 and 69.66% for cycle 2). Completeness percentage of composing lesson plan reached 88.63% for the learning cycle 1 and 89% for cycle 2. Percent mastery learning show 89.66% of cycle 1 and cycle 2 is 90.24%. Thoroughness of these two skills showed that the students were familiar and have experience in setting up and displaying various forms of learning plans. They did not need examples and guidance in preparing and repeatedly displays the lesson plan.

However, the high skills of the process of constructing and displaying lesson plan was not matched with the skills of observation and skills of reflecting on the learning process. Process skills of constructing observation sheet (completeness of 58.57%) and process skills of reflecting learning outcomes (mastery of 59.29% of cycle 1 and cycle 2 is 65%) is low. Although they had been actively following the guidance process (activity on compiled lesson plan by 76.55% and by 86.21% for activity in reflecting) and had been given examples for guidance and direction many times, but their process skills remained low. Constructing observation sheet and reflecting learning outcomes were a new experience for students in the learning process.

Although the process skills of preparing and displaying lesson plans high enough, but students' skill in displaying learning process not so high in the character development aspect of learners. This is reflected in the average completeness display character learning by 70.50%, in real terms is still below the minimum percentage of 75% completeness.

Three of the four indicators of the learning process that had reached the minimum completeness percentage was an indicator of the portion of a long learning time, ie exploration, elaboration activities and formative testing activities. With a portion of a long time students had ample opportunity to insert the character development efforts.

At the beginning of learning, when learners begin conditioning the learning process, although the portion of time that is quite short but the students were able to insert the character development. Some of the characters are developed include: 1) the character of religion through an invitation to always remember the divine majesty and mercy expressed by praying; 2) the character of the virtue of discipline by the counsel on time, bring the necessary learning equipment, completing all homework, clean look and neat and be

respectful to elders; 3) persevering and unyielding character through a short story about the success of one of the characters; 4) loyal character through referrals to be ready to help a friend who lacked something, and 5) the character of respect for the elderly through advice that whatever is said / ordered by the father / mother must be obeyed because it is a form of charity to the parents of a child and must contain an element of goodness in it.

On exploration activities or activities of exposure to the material, some characters are successfully integrated in the learning process include:

1. creative character through referrals to: a. find a way to use props, b. invented the concept of the material in the textbook or in the surrounding environment; c. tell a process or manner of use / usage of tools / props and d. find a way to solve a problem / task;
2. bold characters through referrals to: a. dare to try to do something, b. friends in demonstrating bold represent something; c. dare to express opinions and d. dare to remind a friend or teacher if steps / concepts revealed by one.
3. loyal character through a referral to a peer tutor for a friend who has not been able to follow the subject matter;
4. unyielding character through encouragement to try to continue when confronted difficulties / failures invented the concept.

On the implementation of formative tests, some characters are successfully integrated into the learning process, among others:

1. honest character through advice that whatever we do must be known by God and must be consequences in the future;
2. character persevere through encouragement to keep trying when encountered students who have difficulty;
3. thorough and meticulous character through referrals to recheck accuracy of the answers that have been written, and
4. respect the character of the other friends through directives to not annoy your friends.

Although the other five indicators of learning that does not achieve mastery, but there is some character development efforts are successfully integrated into the five indicators of learning. In step delivery of basic competence, integrated character development, among others:

1. character of cooperation through mutual referrals for help in understanding or finding concepts and
2. unyielding character through referrals to not despair when having difficulty in understanding or finding concept.

In apperception and confirmation steps, some students managed to integrate the development of:

1. bold character expression through referrals to immediately point fingers and ask / answer questions or express opinions, and
2. character attention through referrals to always listen to every direction of the teacher.

On resume preparation steps, some characters are successfully integrated development are:

1. bold characters express opinions through the urge to immediately point fingers and express opinions, and
2. neat character through referrals and examples of how to prepare a resume and how to write neatly.

In step of independent assignment, the characters are integrated by several students, among others: 1. independent through referrals to try it yourself tasks; 2. characters persevering through referrals to try to finish all the tasks, and 3. creative character through referrals to try to find a way to complete the task despite the difficulties.

Conclusion

Time constraints in guidance, only three times, led to the non-maximum result of development of the character. Despite this character development effort had resulted in some promising to be further developed in subsequent efforts. The results showed that some of the character development efforts successfully integrated. At the beginning of learning activities, the character development efforts which were successfully integrated are: 1. brave to express idea character through habituation to immediately point fingers to express opinions, and 2. attention character through habituation to listen to the teacher. At the core activities, the character development efforts which were successfully integrated are: 1. independent character through habituation to try by yourself and 2. persevering character through habituation trying to complete all the tasks. At the end of the activity, the character development is successfully integrated neat character through referrals preparing a resume neatly.

REFERENCES

Andayani, 2009. "Pemantapan Kemampuan Profesiona". Jakarta: Penerbit Universitas Terbuka

Kurtus, Ron. 2011. "Character versus Personality", Diunduh dari <http://www.school-for-champions.com> pada Februari 2012.

Wibowo, Timothy. 2011. Kurikulum Pendidikan Karakter. Diunduh dari <http://www.pendidikankarakter.com/kurikulum-pendidikan-karakter/> pada Januari 2012.

FACTORS OF TEACHING-LEARNING PROCESS AS TRIGGERS TOWARD SCHOOL ANXIETY TENDENCY

Moh. Nur Ali¹, Gazali²

^{1,2}Tadulako University

¹ali.mnur@yahoo.com, ²gazali_lembah@yahoo.co.id

ABSTRACT

School anxiety is one of academic problems in optimizing the students' achievement. If the students feel anxious about things in terms of schooling, he will not be able to totally join classroom instructions. In connection with anxious feeling, the students participation during the teaching-learning process can be clasified physically and intellectually. Physically, the students' participation during the classroom instruction is deals with both cognitive and affective factors. The former deals with the students' comprehension while the latter with their realization on the importance of comprehending the teaching materials. Whether the students' participation is physical or intellectual during the classroom instruction can be measured or identified only by means of the evaluation result. Generally, the students' total participation can be measured by a good atmosphere created by the teacher through classroom management, classroom discipline , and material presentation during the teaching learning process. This paper aims at describing the teaching-learning factors that can trigger the school anxiety tendency of the students. In detail, this study aims at : (1) describing the factors of teaching-learning process that cause the students' school anxiety tendency, (2) comparing the factors of the teachers' teaching-learning process that cause the students' school anxiety tendency, and (3) knowing the factors of the teachers' teaching-learning process that dominantly cause the students' school anxiety tendency.

Key words : Teaching- Learning Process and SchoolAnxiety

1. Introduction

Attendance of students to follow teaching-learning process in the classroom can not be interpreted only physically, but also must be intellectually. The physical students' attendance which is concrete is shown by the students who come to learn marked by attendance list's data as an administrative evidence. Whereas, intelectual attendance is uncertain because it is cognitive, which can only be known through a series of evaluations conducted by teachers after learning process. In Thorndike Learning Theory known as

“Hukum Belajar” (Law of Readiness-Exercise-Effect) contains both of that components at once, physical and intellectual component (In Dembo, 1991) According to Sokolove that attitudes and values in students' perceptions are basically influenced by their assumptions on the behavior of teachers who teach them (In: Garret, Sadker & Sadker, 1994). If the students perceptions of teacher behaviour continue to evolve toward negative, then the symptoms will arise in response to fears that tend to cause students' anxiety .

Students' anxiety in learning can cause long term bad consequences, along with the future growth of children into adolescence and adulthood (Davison, Neale, & Kring, 2006). A previous study that conducted by Ria, Save, Saury Theureau & Durand (2003), found that in the classroom teachers often make decisions and act emotionally, that make bad perception and impression on students.

Anxiety means disorder feeling such as unclear fear and anxiety that very unpleasant (Kowalski, 2000; Santrock, 2003). Schooling anxiety can be interpreted as a reluctance to go to school because of fear of things and activities associated with the school (Ward, 2001). As already mentioned that teachers behaviour especially associated with interaction in teaching and learning process, often leading to negative perceptions, fear, anxiety, and even phobias on certain subjects or teachers. This circumstance can interfere the students' academic achievement.

As an example, students' anxiety also occurred in Malaysia, where the phobia (high level anxiety) of mathematic courses have been troubling so many students parents especially among indigenous students (Yajid,2006). Besides phobia of subjects, students also phobia of subject teachers concerned. Many parents are worried about the adaptability of their children in school, especially when children are still a new student at school. Parents of students in Malaysia believe that if the children are not able to adapt, the students will have school phobia (Yajid 2006). The students who have school phobia can continue to be a refusal to attend school (school refusal behaviour), which eventually became “*siswa ponteng*” (Sheikh Maznan, 2006). *Ponteng Student* (Siswa Ponteng) is a term in Malaysia schools that refers to students who are absent from school and generally ends with drop out from school.

In Japan, *Ponteng Student* also known as “*futoko*” (Nakayama, 2003). Based on Nakayama's research, In Japan, in 2001 there are 138.696 *futoko* or 1,23 % of the entire Japan students population. Although there is no detail about the number of *futoko* students caused by school anxiety, but mentioned that school phobia is one of the educational problems experienced by students in Japan that caused them to be *futoko* (Nakayama, 2003)

In addition, study result of Burke (2004) of students in United states found 4.1% of students have refused to attend school (school refusal). This result also did not confirm the absolute number of students that had anxiety disorders in school, but with a much larger than the percentage of *futoko* students in japan, it can be estimated that students who experienced school anxiety disorders also include in it.

This paper will describe and explain factors of learning process as the trigger of students school anxiety, that will be formulated as follows (1) whether the teachers-students interaction in the teaching-learning process can cause fear and anxiety tendency for students, (2) whether the teaching-learning process factors that are classroom management, classroom discipline, and the presentation of the subject matter by the teacher can inspire fear and a tendency anxiety for students, (3) which teaching-learning process factors are dominant in causing fear and anxiety tendency for students?

2. School Anxiety

Anxiety in humans occurs in many areas of life and the subjects varied segments such as in children, adolescents, adults and even the elderly. Specifically in children and adolescents that have school as their main activity, either directly into and during school hours or indirectly in the family even the wider environment.

This anxiety is a psychological response that reacts in an unusual specific behavior that called abnormal. Some experts argued that such behavior is rather hard to define, because in the case, abnormal behavior has a high level of diversity (Davison, Neale, & Kring, 2006). Nevertheless, according to Davison, Neale and Kring (2006) abnormal behavior can be conceptualized coherent and clearly, with reference to the statistical characteristics, violation of norms, personal distress , disability or dysfunction, and responses which are not expected normative.

Events that experienced by each person has its own dimension, depend on how a person responds and faces the event. Often a person responds to an event excessively that can make panic and anxiety. Kaplan & Sadock (1991) states that anxiety is a response to a particular situation that threaten, and normal things that accompany the development, change, and new experiences. The experience for each person leads to the discovery of self-identity and personal meaning of life.

Subject segment that often experience fear and anxiety especially school anxiety is different, but generally in range of 10 – 14 years old (Smith, 1993; Berg, et.al. in:King, Hamilton & Ollendick, 1998; e.psikologi.com, 2007). This population was slightly different from that proposed by Fricke (2001) which is the age range of children through adolescence or 5-17 years old.

Refers to Piaget's stages of intellectual development, cognitively both age ranges are located in the phase of concrete operational (7-11 years old) and formal operational (11

years old – adults). At the concrete operational phase, a person has been able to think logically about concrete events and classify objects in different groups. At formal operational phase which the individual has entered adolescence to adulthood, someone has been able to think more abstract, idealistic, and logically. Theoretically, the school anxiety term is included in the concept of school phobia, which is one form of anxiety disorders in school are classified as complex etiologically, clinically and therapeutic. School phobia was first studied by Broadwin 1932 in the UK is one of the studies relating to educational psychology so that the studies are directed to students in school (Inamura in Nakayama, 2003). In the context of this study school phobia refers only to the sense of fear to the teaching and learning processes that trigger anxiety tendency of school for students.

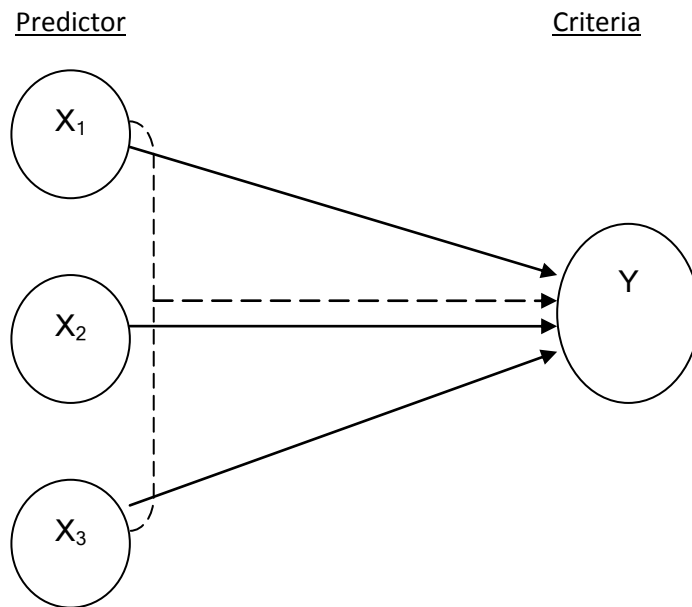
Schooling-anxiety refers to symptom of fear that is generally an early symptom of school phobia. Whereas fear conceived as a response to the traumatic nature of the experience (Cockerham, 2003; Hartwell-Walker, 2006). The concept of fear has substantially same issues with school phobia. Some research results presented by the King, Hamilton & Ollendick (1988) stated that children traumatic experience often show symptoms of incidence, persistence, and maladaptive. That statement was supported by the study result from Graziano & Giovanni (In: King, Hamilton, & Ollendick, 1988) which stated 37 (6.8%) of 547 phobia children referred for treatment back because of greater trauma (insidence) than previous phobia, repeatability and sustainability case (persistence) and have difficulty adapting (maladaptive). From that description, it can be concluded that anxiety and school phobia is a problem caused by fear. The difference is only in terms of the intensity of fear, where fear phobia school has become too serious, but anxiety is still at the lower level.

3. Method

This study is a survey research categories that focused on (1) the emphasis is more likely on the information about the variables of individual information (Sevilla, et al., 1993) , (2) the sample did not include all the population or census, but only a small percentage of the population (Sevilla, et al., 1993) the junior high school students in the Malang city and (3) the subject matter research that regard unreal measurement (*intangible*) , they are the psychological and sociological construct.

There are three variables that would predict the students anxiety tendency , they are (1) classroom management, (2) classroom discipline, and (3) learning material presentation where the whole data was sourced from individual students samples . Research variables data of this subject can be classified as a descriptive survey research (Gay, 1987). Thus, this study can be referred to as a descriptive study using survey design. Schematically, the research design is described as follows.

Research Design



information:

X₁ = Classroom Management

X₂ = Classroom Discipline

X₃ = Learning Material Presentation

Y =Kecenderungankecemasanpadasiswa

The population of students anxiety tendency research was all junior high school students in Malang , both public and private schools. There were 10,676 students. The amount consists of 6,249 students from 22 public junior high schools and 4,427 students from 71 private students (Education Department of Malang, 2009) .

The samples which will be used as the subject of the study population was conducted by sampling. Sampling is the process of taking a portion of the population and making observations on the overall polpuasi(Ary, et al., 2002). In this case, the term sampling is defined as a strategy that allows it to capture a subgroup of a larger population group, this small group then used as a basis for making decisions about the large group(Vockell&Asher, 1995).

4. DISCUSSION

In this section will be discussed, (1) factors of teaching-learning process and students anxiety tendency, (2) classroom management factors and students anxiety tendency, (3) the

discipline factors and students anxiety tendency, (4) the learning material presentation factors and students anxiety tendency and (5) empirical-theoretical comparison.

4.1. Factors Of Teaching-Learning Process And Tendency Of Students Anxiety

Multiple regression statistical analysis that will be described is the simultaneous analysis of three independent variables on the dependent variable is yaitu $X_1, X_2, X_3 \rightarrow Y$. Before entering the regression analysis will be presented first frequency and classification of data which described the tendency of anxiety students as subjects. Average distribution of students' fear from the learning process according to the three classification levels of students' fear ranging from 'very scared', 'scared' and 'less scared', stated through table 1

Table 1 The Average of Students Fear Level Of The Teaching-Learning Process Factors To The School Anxiety Tendency

Level Of Fear	F	%
High	9	6,21
Medium	31	21,38
Low	105	72,41
Total	145	100,00

The data contained in the table indicates the level of fear , 9 (6,21%) high, 31 (21,38%) medium, and 105 (72,41%) low toward factors of learning process that can lead to school anxiety tendency . That average frequency distribution is simply describing a categorical and the amount of each category. Before entering the multiple regression analysis, required to check in advance to ensure there is no autocorrelation, the tendency of the correlation between the automatically independent variables and affect the predictive quality of related variables.

The analysis of the three factors in learning process ie classroom management, classroom discipline, and the presentation of the subject matter demonstrate the power that triggers school anxiety for students. Statistically, determination coefficient that indicates it very strong classified, the $R^2 = 0,845$. That determination coefficient means that 84.5% of student anxiety tendency caused by learning process factors. As for the rest, 100% - 84.5% or only 15.5% tendencies school anxiety caused by other factors outside of the teaching-learning process factors.

4.2. Classroom Management Factors and Students Anxiety Tendency

In managing classroom learning time , teachers action often responded by students as a thing or a scary situation. The students fear symptoms occur in conjunction with time allocation, time provision, and academiclearningtime (David Berliner in Paterson & Walberg, 1997). Research data on the learning time management that was responded as a fear by the students , primarily oriented in (1) delay of the students when entering the classroom because absent that exceeds a tolerance of 5 minutes, (2) the guilt stored as ever been late or absent, (3) was strictly limited to interact with teachers in the classroom, and (4) the assumption of value will eventually be bad. Fears symptoms that most commonly perceived are restless, tense, nervous, and concentrating difficulty in class.

Data on students fear related to classroom management will be presented in Table 2. Average distribution of students' fear of classroom management factors according to three classification levels of fear, presented in Table 2.

Table 2 The Average of Students Fear Level Of Classroom Management Factors

Level Of Fear	F	%
High	8	5,52
Medium	29	20.00
Low	108	74.48
Total	145	100,00

Opposite from the data presented in Table 2 and the results of testing hypotheses about the relationship of classroom management with anxiety tendencies, to discuss more about the influence and predictive relationships X1 (classroom management) to Y (students anxiety tendency).

Synthesis of optimal classroom management can reduce the fear and anxiety of students, supported by the R-square values generated by $R^2 = 0.751$. The R-square value confirmed that as many as 75.1% tendency in student anxiety caused by classroom management factors. Thus, another factor that may explain the tendency of anxiety students outside of classroom management factor is $100\% - 75.1\% = 24.9\%$. Or in other words, classroom management factors are predictors that can be used to describe the tendency of school anxiety.

4.3. Discipline Factor and Students Anxiety Tendency

Data on students' fears related to classroom discipline factor will be presented in Table 3. Average distribution of students' fear of classroom discipline factor according to three classification levels of fear, presented in Table 3.

Table 3 The Average of Students Fear Level Of Classroom Discipline Factor

Level Of Fear	F	%
High	9	6,21
Medium	35	24.14
Low	101	69.65
Total	145	100,00

Student responses presented in Table 3 indicated that as many as 9 (6.21%) high, 35 (24.14%) medium, and 101 (69.65%) lower than the factors of discipline and sanctions imposed for violations of the accompany discipline. Referring to data in Table 3 that is an indicator variable data from classroom discipline, it will be discussed through a statistical analysis of the results obtained. In this case, correlation between classroom discipline with students anxiety tendency is explained by the regression coefficient obtained for $R = 0,810$. With reference to the highest value = 1, then 0,810 gave the sense that the correlation

between classroom discipline and students anxiety was classified as very closely. Positive correlation between the independent variables and the dependent variable are very close, it can be further interpreted that if the teacher is too prominent a role in setting norms classroom discipline and rigid discipline, it will be responded by a high level of fear and students anxiety tendency.

4.4. Learning Material Presentation And Students Anxiety Tendency.

Variables of learning material presentation that simplified into sub-variables (1) lesson plann , (2) the implementation of learning, and (3) evaluation of learning. The three sub-variables are described by six descriptors which are (1) afraid of deemed negligent and not ready to learn, (2) afraid of speaking in class, (3) afraid of asking about the lesson, (4) afraid of answering questions, (5) afraid of getting a bad grade and (6) afraid of being failure in exams. Generally, the symptoms are easy heart palpitations, high-strung, hand-shaking, difficulty concentrating, nervousness, and bad things will happen to him.

Students' level of fear associated with the learning material presentation will be presented in Table 4. Average distribution of students' fear of learning material presentation factor according to three classification levels of fear, presented in Table 4.

Table 4 . The Average of Students Fear Level Of Learning Material Presentation

Level Of Fear	F	%
High	9	6,21
Medium	30	20.69
Low	106	73.10
Total	145	100,00

Student responses on the learning material presentation presented in Table 4 show that as many as 9 (6.21%) high, 30 (20.69%) medium, and 106 (73.10%) lower than the factor of learning material presentation that was delivered by teachers in the classroom.

Through six of fear aspects that become descriptors in this study, the data analysis showed the value of the determination coefficient of $R^2 = 0.834$. The coefficient of determination indicated that the student anxiety tendency was caused by the presentation of the learning material presentation occurred in 83.4% level. The rest was $100\% - 83.4\% = 16.6\%$ came from other factors not included in the learning material presentation factors. From the analysis it can be concluded that the learning material presentation factor is a predictor that may explain tendency of school anxiety.

5. Epilogue

The result of this research shows that factors of classroom management, classroom discipline and presentation of subject matter in class can cause fear and anxiety in students. Because the subjects were students that experienced anxiety, this study only focused on the students, as previous researchs. While the teacher is also an element of the learning system can also be one of the factors triggering students anxiety. In connection with the assumption, suggested the following research should involve teachers in the study of school anxiety so that school anxiety perspective become more comprehensive.

Theoretically, school anxiety is caused by students' fear of school-related objects created by the students themselves. But empirically, this study found that the dominance of the teacher in classroom management, but empirically, this study found that the dominance of the teacher in classroom management, the role of the teacher is too excessive in classroom discipline, and the lack of dynamic presentation of the material, affected the tendency of fear and anxiety in school. Thus fear and anxiety are not only caused by the students irrational conditioning to the object of schooling, but also because the role of the teacher. In connection with it, also suggested that the role and teachers specific behaviors and role to interact with students dealing with school anxiety need to be investigated.

REFERENCES

- [1] Ary, D., Jacob, L., & Razaviech, A. (2002). *Introduction to Research in Education*. Australia: Printed in the United State of America.
- [2] Burke, N. (2004). "How Common is School Phobia?" dalam: <http://www.panic-anxiety.com/phobias>. Diakses 25/03/2007.
- [3] Cockerham, W.C. (2003). *Sociologi of Mental Disorder*. Six Edition. New Jersey: Prentice Hall.

- [4] Davison, G.C., Neale, J.M., & Kring, A.M. (2006). *Abnormal Psychology, Ninth Edition*. Diterjemahkan Oleh Noermalasari Fajar. Jakarta: PT. Raja Grafindo Persada.
- [5] Dembo, M.H. (1991). *Applying Educational Psychology in the Classroom*. New York: Longman.
- [6] Fricke, S.R. (2001). "Historical Perspective on Achool Absenteeism and Truancy" dalam *School Refusal Behavior*. http://www.school_refusal.htm. Daiakses 28/10/2008.
- [7] Garret, S.S., Sadker, M., & Sadker, D. (1994). "Interpersonal Communication Skills" dalam: Cooper, J.M., Ed. (1994). *Classroom Teaching Skills*. Fifth Edition. Lexington: Heath and Company.
- [8] Gay, R.L. (1987). *Educational Research, Comptentecies for Analysis and Application. Third Edition*. Colombus: Merril Publishing Company.
- [9] Hartwell-Walker, M. (2006). "School Phobia: I'm Not Stupid, I'm Scared" dalam: <http://Psychentral.com>. Diakes 14/05/2007.
- [10] King, J.K., Hamilton, D.I., & Ollendick, T.H. (1988). *Children's Phobias: A Behavioural Perspective*. New York: John Wiley & Sons.
- [11] Kowalski, R.M. (2000). "Anxiety". Dalam Kazgin, A. (Ed.), *Encyclopedia of Psychology*. Washington DC.: American Psychology Association and Oxfoerd University Press.
- [12] Nakayama, K. (2003). "Futoko and Camp Programs in Japan". *Educational Research for Policy and Practice*, Volume 2 No.2. 2003. p.107-122.
- [13] Peterson, P.L. & Walberg, H.J. (1997). *Research on Teaching: Concepts, Findings, and Implications*. Berkeley, California: McCutchan Publishing Corporation.
- [14] Santrock, J.W. (2003). *Educational Psychology*. Dallas: Texas University Press.
- [15] Sevilla, C.G., Ochave, J.A., Punsalam, T.G., Regala, B.P., & Uriate, G.G. (1993). *An Introduction to Research Methods*. Philippines: Rex Printing Company.
- [16] Sheikh Maznan, S. (2006). "Fobiasekolah, loya, sakitperut, demam". Dalam: *Child Learning Process & Communication*. <http://forum.cari.com.my>. Diakses 13/05/2007.
- [17] Smith, J.C. (1993). *Understanding Stress and Coping*. New Yor: MacMillan Publishing Company.
- [18] Vockell. E.L., & Asher, J.W. (1995) *Educational Research. Second Edition*. New Jersey: Englewood Cliffs.
- [19] Ward, I. (2001). *Phobia*. Cambridge: Totem Books USA.
- Yajid, M.S.Ab. (2006). "Menangani Fobia Matematik" dalam: *Ministry of Educational Malaysia* dalam: <http://apps2.emoe.gov.my>. Diakses 17/04/2007

The Development of The Assessment System of Learning Result in Physical Education and Sport Health for High School in Yogyakarta Special Region

Guntur

Graduate Program Yogyakarta State University, 2013

Abstrak

The aims of the research are as follow (1) to know the characteristics of the assessment instrument of learning result in physical education and sport health for high school especially for the volleyball game material, (2) to construct the assessment procedures, (3) to know the profile of the student's ability in practicing volleyball game.

The kind of the research is development research. The model of development research is educational research that was developed by Borg and Gall. The procedures of educational research are : (a) the initial research phase, (b) the developmental phase, (c) field testing phase, and (d) dissemination phase.

The samples as the test subjects are the students of sport laboratory school for volleyball in Sport Science Faculty, Yogyakarta State University. The raters for practicing volleyball are the teachers. The subjects of the research are the students of five high schools in Yogyakarta Special Region. They are SMAN 1 Yogyakarta, SMAN 2 Wates, SMAN 1 Seyegan, SMAN 1 Sewon, and SMAN 1 Tanjung Sari. The sampling technique uses purposive sampling. The competence that is based on the Minimum Mastery Criterion (MMC) and the agreement with the school is ≥ 70 .

The results of the research are (1) the form of learning result instruments for physical education and sport health materials on volleyball include, the task sheets for the competence test, the scoring sheets, the assessment guidance for rubrics (criteria) equipped with checklists and the assessment procedures for practicing volleyball (2) the assessment instruments use the content validity in the good category according to the experts judgments (3) The reliability of the assessment instruments use the Genova program with the coefficient 0.82, and Cohen's Kappa with the coefficient 0.79, both fulfill the qualified reliability (4) The assessment procedures in practicing volleyball include the skill for playing preparation, the skill of playing technique, the skill of ball placing, and the student's attitude during the game. (5) The profile of competence shows that 93% of the students are competent and 7% of the students are incompetent; (6) Based on the opinions of physical education and sport health teachers, the assessment instruments for volleyball can be used easily.

Keywords: the assessment system of learning result, volleyball

A. Introduction

Physical Education and Sport Health (PENJASORKES) aims to develop physical fitness aspects, motor skills, thinking skills, social skills, emotional stability, moral action, aspects of a healthy lifestyle, and the introduction of clean environment through physical activity, sport, and health that is systematically planned in order to achieve national education goals (BSNP, 2007: 14). Based on the objectives of Physical Education and Sport Health which largely focuses on psychomotor domains however it also concerns to the cognitive and affective learners. Physical Education and Sport Health learning process for High School have used curriculum for sport education (Jeweet, 1995:243). The assumption is that sport is an advanced form of play and an inseparable part of people's daily lives. Sport in schools consist of various activities, one of it is game. Game is sport that are expected to develop its learner's ability in accordance with the educational objectives and standard curriculum.

The game is a direct representation of student characteristics observed during the game because they, talk, act and behave spontaneously. Thus the game can be used as a tool to stimulate the student's potential activity in the form of motion, attitudes and behaviors. In accordance with the curriculum materials used in Physical education Sport and Health, game is practicing sport skill with its rules and values. With basic competence to practice sport skill is through volleyball game. Volleyball game that is taught in schools, is a net game where players in different field side are separated by a net (Hopper, 1998:16). The game characteristic is team so that each individual must have the skills to control and to pass the ball and the skill to defense with the collaboration of their teammates. Generally, in a volleyball game there are techniques that must be possessed by the students, they are : (1) service technique to start the game (2) passing technique to serve the ball from the teammates or over the net, basically putting it in play. (3) setting technique that requires precise timing, accuracy and a controlled amount of force to present or assist the ball to teammates to shots leading in points, (4) spike technique or attack is the strategy used to send the ball over the net to the opponent in such a manner that ball is not returnable, (5) Blocking technique is a method of defending a spike attack in which the defensive team jumps up at the net and stops the spike from crossing the net by contacting it with the hands and arms.

Based on the characteristics of volleyball game, mastering the technique is the requirement for students to play the game. The assessment of learning result for high school students in Physical Education and Sport Health especially in volleyball game is basically in line with the development of competence based curriculum, so that the assessment is one of the component that is directly related to the curriculum. Physical education teachers must understand the dimension in identifying what should be measured in learning, and must

able to measure the level of student's ability in volleyball game material. The research is based on the assumption that the understanding of teachers to the nature of Physical Education and Sport Health especially in the implementation of learning for game material is not as expected so they guide imprecisely by subjective assessment. Because of the teacher's disability to assess the learning result of the students, subjectivity in Physical Education and Sport Health assessment is an inevitable problem. Basically, subjectivity in assessment as the student's learning result due to the difficulty in determining the assessment criteria.

Teachers must have the ability to arrange the assessment process such as the item for skill practice, rubrics, assessment instrument and procedures. In conducting the assessment process, many teachers have not used the proper procedures of assessment. In fact, the assessment procedures that have been developed are unsystematic. Because of the teacher's disability to construct the valid and reliable assessment procedures and the absence of the raters, subjectivity will dominate the decision in assessment.

The assessment of student learning result in physical education and sport health, especially in volleyball game material must notice to some aspects. They are the process and the product. These aspects will describe the real student's capability in practicing volleyball. In the assessment of process, the teacher will observe the student's activities in the preparation stages in volleyball such as the technique to start the game and the technique of body movement to play with the ball. In the product assessment, the teacher will observe the result of ball placement after a series of playing the ball in volleyball.

In reality the process and the product assessment is based on the teacher's knowledge in volleyball. In gaining the product assessment, the teachers will measure the motor skill with the sport skills test. Sport skills test is a test which resembles its sport situation. The accuracy test such as throwing, hitting, or kicking an object to a target for accuracy are included in sport skill test. Free throw in basketball, low serve in badminton, and serve in volleyball are the kinds of accuracy test that are commonly used by the teachers for assessment. These method will eliminate the process of assessment.

The use of sports skills test is an invalid predictor to measure the student's ability in the real play because the student's skill is inconsistent, and the skills that are usually tested on the students are out of context (Veal, 1992:88-96). The problem is that such tests can not be used as reference to estimate the student's performance. The test results will not reflect the student's performance in the real/ authentic game so that the teachers will find difficulty in gaining the assessment of process and product. From the initial study, the problem of the assessment in learning result are (1) the factor of subjectivity in assessment (2) the finding of criteria in the assessment of process and product (3) the separated assessment for each indicator, (4) the absence of suitable assessment guidelines with the student's development.

It is important to solve the problem of assessment in physical education and sport health especially in volleyball.

The initial study on the teacher's disability to decide the criteria for assessment become the foundation of the research. Until now Penjasorkes learning outcomes assessment instruments that have been scientifically tested that can be used by teachers Penjasorkes, especially in Indonesia, are not yet available. During this time, teachers use assessment instruments Penjasorkes compiled independently by adopting an instrument that does not conform to the characteristics of the students. As a result, the perception differences arising on learning outcomes assessment instruments Penjasorkes between one and the other teachers. In an effort to measure student learning outcomes in physical education includes properties in the cognitive, affective and psychomotor performance can be done through work or tasks that make up the competency. To determine the competence of individual learners through examinations conducted a competency test. One assessment to measure student competency in the context of real life through the performance of tasks in accordance with the characteristics of penjas is authentic asesement (Mustain, 1995:19). Authentic assessment is designed to engage students in the critical tasks that best represents the real-life experiences (Bruder, 1993).

Based on the background above, it is necessary the development of structured learning outcomes assessment system by using one of the alternative assessment using authentic assessment as a system that produces guidelines for the development of students' performance assessment instruments, procedures for using these instruments and the manner of reporting results judgment. Development assessment system is useful for teachers he hoped to be able to carry out the assessment process to gather information on the achievement of student competence level, high school volleyball game material so that optimally useful to improve the quality of teaching physical education at the high school level.

B. Problem Formulation The issues in this study is formulated as follows:

1. How do the components of learning outcomes assessment instruments Penjasorkes subjects, particularly on the material in high school volleyball game DIY?
2. How do the characteristics of learning outcomes assessment instruments Penjasorkes subjects, especially in the volleyball game materials that include high reliability and validity in DIY?
3. What is the procedure of learning outcomes assessment implementation Penjasorkes subject to the material in high school volleyball game DIY?
4. How is the profile result Penjasorkes study subjects in high school volleyball game material DIY?

C. Product specifications are expected

Development of student learning outcomes assessment system Penjasorkes high school in this study to produce a product in the form of assessment instruments kids play high school volleyball is valid and reliable. Expected product specifications are as follows: (1) about the game of volleyball practice competency test, the items because according to the standards of competence penjasorekes high school subjects, (2) assessment sheets volleyball game, (3) assessment rubrics or guides volleyball games, (4) assessment procedures Penjasorkes play volleyball in high school subjects. The assessment instrument is needed to assist teachers in providing an objective assessment of the ability of students playing volleyball game. Objective assessment will help teachers identify students' ability to practice volleyball game on Penjasorkes subjects in high school Yogyakarta.

D. Theoretical grounding

1. Competency-Based High School Curriculum.

The curriculum is a very important tool in educational achievement, meaning that without a good and appropriate curriculum will be difficult to achieve educational goals and objectives aspired. According to the Law of the Republic of Indonesia Number 20 Year 2003 on National Education System and the Indonesian Government Regulation No. 19 Year 2005 on National Education Standards mandates that: "Education Unit Level Curriculum (SBC) elementary and secondary education prepared by the educational unit with reference to the Content Standards (SI) and the Competency Standards (SKL) and based on the guidelines developed by the National Education Standards Agency (BSNP)".

In order to fulfill the mandate of the law and in order to achieve the objectives of national education in general and schools in particular educational goals, SMA / MA as a mid-level educational institution deems it necessary to develop the Education Unit Level Curriculum (SBC). Taconis (2004:65) stresses that the competency-based curriculum should address the knowledge, skills and attitudes in an integrated manner, because each one separately is not enough to say competent professional behavior.

Gillis (2007:20) states that how competence should be assessed and other problems associated with the reporting of assessment. Directly observable behavior and behavioral indicators can be determined according to the number of competencies required to indicate the quality of performance on each task.

Competency-based curriculum has five characteristics, namely: (1) emphasis on the achievement of student competencies, both individually and classical, (2) results-oriented learning and diversity, (3) delivery of learning using a variety of approaches and methods, (4) learning resources not only teachers, but also other learning resources that meet the

elements of education, (5) assessment emphasizes the process and results in an effort to control or achievement of competence (Ministry of Education, 2002: 23).

Application of SBC still oriented on pencapian learning outcomes (output-oriented) are formulated in the form of competence means learning is considered successful when the student has achieved a minimum standard of competence specified. SBC-based learning can be defined as a process of applying ideas, concepts and SBC policies in a learning activity so that students master a particular set of competencies as a result of interaction with the environment (Mulyasa, 2006: 66). In the learning process based on competency standards, achievement kriteria minimal at every stage of learning is necessary, because it serves as a benchmark or minimum criteria that must be met by students after undergoing the learning process (H. Bahrul, 2004).

Competency is defined as the knowledge, skills, and values reflected in the basic habits of thinking and acting (Depdinas, 2003). Competency standards are the limits and direction capabilities that must be owned and learners can be done after following the process of learning a particular subject (Djemari M., 2004). Through CBC, standard and basic competencies to be mastered by the student at any level of schooling and the necessary assessment using appropriate assessment instruments.

2. Competency-Based Assessment.

Jennifer L Fisetta et.al, (2009: 34) states the importance of assessment as follows: In an era when accountability matters, assessment is imperative. Assessment needs to be an integral part of the instructional process (formative assessment) to provide teachers and students with ongoing information about what they are learning. Assessment also needs to be used to Determine what students have learned at the end of instruction (summative assessment). Teachers, students, parents, administrators, and policy makers need to understand what students know and are Able to do as a result of their education program That is, in an era when things accountability, assessment is very important.

Assessment should be an integral part of the learning process (formative assessment) to provide teachers and students with ongoing information about what they are learning. Assessment is an integral part of teaching and learning (John Mueller, 2006: 1). Assessment should also be used to determine what students have learned at the end of instruction (summative assessment). Teachers, students, parents, administrators, and policy makers need to understand what students know and can do as a result of the physical education program students.

Competency-based assessment is a means used by teachers to evaluate student performance, for the purpose of placement and professional development planning (Yorkovich, 2008:1). Emphasis is competency-based assessment activities assess a person's

ability or success criteria, instead of comparing the ability of someone to others in the class (Yoyoh Jubaedah, 2007:9). Competence is the ability of the form of knowledge, skills, attitudes and values are reflected in the habit of acting and thinking after students complete an aspect or sub-aspect of a particular subject (Ministry of Education, 2003: 5).

A competency-based assessment instrument that provides a way to define and measure job skills and performance abilities. Various other concepts associated with competency-based assessment such as motivation, nature, self-concept, attitudes, cognitive behavioral, skills, and work habits (Schippman et al, 200: 706). Alison Wolf (2001: 2) stated that competency-based assessment is as follows: Competence-based assessment is a form of assessment that is derived from a specification of a set of outcomes; Clearly states so that the outcomes-both general and specific-that assessors, students and interested third parties can all the make reasonably objective judgments with respect to student achievement or non-achievement of these outcomes; and that certifies student progress on the basis of Demonstrated achievement of these outcomes. According Yorkovich (2008:2), the assumption of competency-based assessment system are: (1) describe the characteristics of a person's behavior effectively, (2) does not depend on the judgment of others, but based on a person's behavior, (3) helped produce the most effective way of neighbor behavior; (4) rating system used is based on competency standards.

3. Learning Outcomes Assessment System

The approach used in the development and implementation of the curriculum is very influential on the scoring system implemented. Developed curriculum and delivery of learning in high school with a competency-based approach, the results of the assessment system used competency-based learning, known as the Competency Based Assessment (CBA). Competency-based assessment is the assessment of evidence to determine when a person's ability to set standards of competence (Hayton and Wagner, 1998: 7). Based on the national education system adheres to clarify learning goals Bloom's taxonomy of learning objectives. According to Bloom (Orlich, et al, 2007: 67 - 69), most fit into three broad objectives instructional areas: the cognitive, affective, and psychomotor domains. It means that the purpose of education is divided into three domains, namely: (a) cognitive domains (cognitive domain), which contains the behaviors that emphasize the intellectual aspects, such as knowledge, understanding, and thinking skills, (b) affective domain (affective domain) contains behaviors that emphasize aspects of feelings and emotions, such as interests, attitudes, appreciation, and the manner of adjustment; (c) psychomotoric domains (psychomotor domain) contains the behaviors that emphasize aspects of motor skills such as handwriting, typing, swimming, and operate machine. Cognitive, affective, and psychomotor treated as a unified underlying behavior of a competency. The important role of learning

outcomes assessment is to determine student learning capian (Jennifer L Fiset al, 2009: 33).

Els van der Werf (2006: 17) stated learning outcomes are as follows: Learning outcomes are statements of what a learner is expected to know, understand and / or be Able to Demonstrate at the end of a period of learning. They make explicit the results of learning and are usually defined in terms of a mixture of knowledge, skills, abilities, attitudes and understanding.

It means that the actual concept of learning outcomes and the ability to be thorough about dilihasilkan students pass the test subjects, as well as affective and psychomotor learning outcomes that are integrated throughout the domain associated with the development of the students themselves. Student learning outcomes assessment SMA is a systematic process for gathering information such as numbers, verbal descriptions, to make a decision on the achievement of learning outcomes or competence of learners. Teachers strive to continue to monitor the process, progress, and continuous improvement of the results in the form of daily tests, midterm replay, and replay the end of the semester.

The scoring system is as a reference the principles, methods of testing, and the rules implementing assessment / certification testing needed for the assessment / testing can be guaranteed based competency standards, implemented in a fair, valid, and consistent. Development of performance appraisal system plays volleyball game includes three domains, namely: cognitive, affective, and psychomotor domains. At the high school level, many subjects related to psychomotor domains are physical education and sports health. In other words, learning activities that are associated with the psychomotor domain is the practice field. Penjasorkes is the only subject in school that uses motion as a medium of learning to achieve educational goals. Wuest and Bucher (1995: 97) states, "Movement is the Keystone of Physical Education and Sport." It is clear to say that the motion is key to physical education and sport. According Rusli Lutan (2002: 15) the process of learning to move and learning through movement are two meanings that should be held in Penjasorkes. Expected taught physical education learning various fundamental movement skills, techniques and strategies of the game / olahraga, internalization (sportsmanship, teamwork) (Asmawi, 2006: 134). Through a movement led students to find out how. The movement, the movement and the usefulness know also able to demonstrate positive behaviors for learning (teamwork, discipline, sharing space and equipment, and other honest) that students are expected to also manifested in his daily life. However, in the development of competency assessment system test playing volleyball game, psychomotor domain is the most dominant.

Performance appraisal or often referred to as authentic assessment (assessment authentic) (Metzler, 2005: 178). Authentic assessment or authentic assessment in other books (except Wiggins) authentic assessment be made equal to the name of an alternative

assessment (alternative assessment) or the assessment of performance (performance assessment) (Herman, Aschbacher, and Winter, 1992). According to John Mueller (2006: 157) Authentic assessment is an assessment form which the students were asked to show the real situation with the task of demonstrating the application of skills and knowledge essential significance (direct assessment). Authentic assessments are designed to take place in a real-life setting rather than in an artificial or contrived setting, roomates typifies traditional forms of assessment. They can be made on either an individual or group basis, and may involve; a significant degree of student choice (NSPE in Baker, O'Neill, & Linn, 1993).

Authentic assessment is an attempt to challenge the depiction and performance standards that students will encounter in the real world (Wiggins, 1989a, b). To be assessed to ensure that it really is a real individual competencies (the learner), then the assessment should be done in an authentic (real, real as everyday life) and in accordance with their lessons, so that authentic assessment takes place in an integrated manner with the learning process. That is, students are engaged in meaningful tasks that significantly influence their performance compared to memorize facts that have no value in the future.

Authentic assessment is recognized as another way to assess student learning and improve teaching physical education (Hensley, 1997: 19-24). Authentic assessment also means emphasizing the responsibility of teachers and students to know and understanding of physical education (Lund, 2002:7). It means authentic assessment is one way to emphasize student responsibility in knowing how the parts and keys corresponding to the subject matter and demonstrate skill or competence. Students must be able to integrate the skills into game shape and the actual exercise to demonstrate mastery (Lund, 2002: 42).

Further Veal (1992:90) describes authentic assessment in physical education is on-going or continuous, therefore the assessment should be done in person at the time of the learning process takes place, which can be monitored processes and products not only assess student learning at the end of the unit so that authentic assessment can occur throughout the unit. From the description above it can be concluded opinion Authentic assessment is an assessment form which the students were asked to display the tasks in real situations that demonstrate the application of skills and knowledge essential that meaningful.

Test characteristics

One of the principles of competency-based assessment is a measuring instrument must be valid and reliable, especially for the assessment of the test form. If the test is used in large-scale and fundamental decisions and broad impact, valid and reliable requirements should be accompanied with statistical validity. Tests that produce data that is not relevant to the

purpose of measurement is said to be a test that has low validity (Azwar, 2007:43). Content validity refers to the contents of the test as a representative sample and measured the ability of a given subject matter. Validity relates to suitability, usability and meaningfulness. Form of validation of the validity of the content tailored to the specifications table that already exists, in the form of teaching content and skills measured. According to Azwar (2007:45-48) suggests that content validity was estimated by testing the validity of the content of the test with a rational analysis of professional judgment. In general, the test can be said to be good if it is a valid measure, meaning that it is capable of measuring instruments fulfill its function as a test or in other words, the test is able to measure what should be measured. Djemari Mardapi (2004:14) argues that the validity of the measuring instrument can be seen from the construct measuring instruments, which measure as planned. Through the lattice gauge will know the validity of a measuring instrument. Lattice contains material tested, forms of matter, the level of the multilevel thinking, weight about, and how pensekoran. According to Allen & Yen (1979: 95).

A test is said to be valid if it measures what it is supposed to be measured. Messick (1989: 13) states that the validity of an overall assessment of the empirical evidence and logic that supports the theory of decision-making and actions based on test scores or assessment models other. The validity of the test is divided into three types: content validity (content validity), criterion validity based (criterion-related validity), and construct validity (construct validity) (Anwar, 2007: 45). While Crocker and Algina (1986:105) argues that the tests were tested on the same individual at different times it will produce the same value.

In addition to the validity of the indispensable requirements on a test, it is necessary also information about reliability. Popham (1995:21) states that reliability relates to the consistency of measurement results. Factors affecting the reliability associated with the test are: (1) many grains, (2) the homogeneity of the test material, (3) the homogeneity of grain characteristics, and (4) variability scores. Reliability associated with learners is influenced by factors: (1) the heterogeneity of the group, (2) the experience of students take the test, and (3) motivation of learners (Ebel, 1991: 88-93). Thus, measuring tools said to be reliable (consistent / fixed) when the measurement results show the extent to deliver results relatively different when measured back to the same subject. According to Crocker and Algina (1986:105) that the tests were tested on the same individual at different times it will produce the same value. Based on the opinion of Johnson (2009:22):

The consistency of examinees' scores across occasions such as Facets, tasks, and raters. In other words, reliability addresses Whether an examinee's score would be the same if she were to take the exam on a different occasion, complete different tasks, or be scored by different raters. Reliability with respect to the consistency between assessors will get the same score. By reliability, we mean consistent in assessing the exam. Reliability is the value of a test will be the same when assessed on different occasions in completing the tasks are

assessed by different assessors. (Johnson, 2009:22-23). Subsequently Smith (2007:2) states that the test performance, so that meaningful and consistent assessment system that can be used inter-rater reliability. Judging from the way of making and interpretation of test scores, the test can be divided into a test and a reference based on norm reference benchmark. Both of these references using different assumptions about the ability of a person. Norm reference tests assume that people of different abilities and can be described by a normal distribution. Compared with the results of one test group. If the test scores are interpreted based on certain criteria, then use the reference criterion. The main characteristic that marks the use of assessment is the benchmark reference for the interpretation of scores from the measurement tool that can generate a description of the skills or knowledge being owned by learners. Interpretation of test results are always compared to the standard or criteria set in advance (Djemari Mardapi, 2004: 13). Selection of proper reference is determined by the characteristics of the subject areas to be measured and the objectives to be achieved. Reference measurement norm aims to measure individual competence in general, the results in the form of information about the level of achievement in some subpokok discussion on a field of study. In reference measurement norms, individual differences is preferred so that the preparation of items mmapu reveals high variability. In the reference measurement criteria, individual differences is not an important thing, but more important criteria, mastery or non-mastery.

4. Physical Education, Sport and Health

a. Understanding Penjasorkes

Physical education, which is called the curriculum in parallel with the other terms being of Physical Education, Sport and Health, is one of the subjects presented in schools, ranging from elementary to high school. Physical education is an integral part of education as a whole, aims to develop the aspect of physical fitness, motor skills, critical thinking skills, social skills, reasoning, emotional stability, moral action, a healthy lifestyle and clean environment through the introduction of physical activity that is planned systematically selected in order to achieve educational goals (Ali Maksum, 2008:7).

According to Nixon and Jewett (1983: 27) physical education is one aspect of the overall educational process with respect to the development and use of voluntary individual motion capabilities and useful as well as directly related to the response of mental, emotional and social. According to Pettifor (1999:134) provide physical education students to practice active and healthy life by providing coverage of learning experiences are neat and systematic. He asserts that the experience should be able to improve the mastery of motor skills development, fitness and health based on the knowledge, confidence in being active and can appreciate the advantage of physical activity. In other words, physical education

equip learners space to form a solid basis entirely (whole child) that is directed at development aspects of cognitive, affective and psychomotor.

This concurs with the overall concept Deur (1995:156) argues that physical education is part of a comprehensive educational program to contribute to the overall growth and development of students through movement experiences. This opinion is consistent with the fact that physical education is a learning process that aims to build specific knowledge, capability and understanding and promoting physical fitness. (Capel, 2000: 73). Nevertheless, the focus is on the learner and the development of physical prowess rather than on physical activity.

Penjasorkes is essentially a process of education that utilize physical activity to produce a holistic change in the quality of the individual, both in terms of physical, mental, and emotional. Physical education to treat the child as a unified whole, being a total, rather than just take it as a separate one's physical and mental quality (Mahendra, 2007).

In fact, Penjasorkes is a really broad field of study. The point of concern is the increase in human motion. More specifically, Penjasorkes deals with the relationship between human movement and other educational areas: the relationship of the development of the physical body with the mind and soul. The focus on the influence of physical development to growth areas and other aspects of human development is what makes it unique. There is no other single area such Penjasorkes concerned with the total development of the human being.

Penjasorkes led to improvements in 'mind and body' that affects all aspects of a person's daily life. Holistic mind-body approach includes also an emphasis on the three educational domains: psychomotor, cognitive, and affective. As expressions of Robert Gensemer, Penjasorkes termed as the process of creating "a place that is good for the body mind or soul." Means, in good body 'expected' there is also a healthy soul, in line with the ancient Roman proverb: "Men there in corporesano". Based on the foregoing, Penjasorkes as an integral part of education as a whole has a role as a foundation for the development of the child. Thus, physical education can develop the full potential of organic aspect of the child, perceptual, cognitive, social and emotional.

b. Understanding volleyball game

In the course of physical exercise and health education in secondary schools using a volleyball game as one of the learning material motion. American Sport Education Program (2007:22) states volleyball games are as follows:

Volleyball is unique in that it is a game of errors where the objective is to get the ball to hit the floor on the opponent's side of the net or force the opponent to make-ballhandling error. Thus, the majority of points scored in volleyball are result of an error.

Concepts and principles according Yuyun volleyball and Toto (2010:36) "game of volleyball at the beginning of the idea is bouncing a ball game (to-volley) by the hand or arm of the two teams that played her field bag that has certain sizes. For each team, the field was divided by two equally large net or rope laid on the field at the same two large by net or rope stretched across the field to the size of a certain height. One of those players should not be bouncing the ball twice in a row unless the hedge, and Satui team can play a maximum of three times the ball touches the ground itself.

The principle of playing volleyball is played with a ball memvoli (hitting with the hand) and tried to drop it into the opponent's ground game with ball menyebrangkan through the net or nets, and keep it so that the ball does not fall on the ground itself. While the principle of playing volleyball, according Yuyun and Toto (2010:36) "the principle of playing volleyball is to keep the ball not to fall in the field itself and trying to drop the ball on the ground servicing of service area" peraturan basis used is the ball should bounce off the hands, arms, or the front of the body and limbs. The ball must disebarangkan opponent to the ground through the net. Learning basic volleyball game can aim for pleasure (Joel, 2003: vii). Furthermore, according to Joel volleyball is a unique, exciting game that requires solid teamwork and consistent execution of individual (2003: vii). Volleyball uniqueness unlike any other sport because of the play in addition to the element of teamwork that without the cooperation of the team will not be able to attack with the right (Kinda S, 2006: v). Volleyball as a team sport has unique characteristics which make use of the field measuring 18 x 9 m, the barrier net and the team in the form of basic rules (Joel, 2003: vii).

Volleyball game according to the types of classifications permananannya including the types of net games (Hopper, 1998:15). This primary rule leads to progressive principles of play that are consistency, then placement of the object and positioning in relation to opponent's targeted area, and finally spin and power to make it difficult for an opponent to get the object back into play (Hopper, 1998 : 16). In this game deals with some of the things that did rally in consistency, placement of the ball on target an opponent or opponent's area, and the skills to hit the ball with the technique chosen for the deadly opponent.

According to Crum (2006:8) is rallying versus playing to the ground, to hit (or touch) somebody's field (or the field of the other teams) with an object (for example a ball) with respect to Prevent or to hit that (or touch) somebody's field (or the other of the team) that way the other person (or team) can not return the object (in my our field). Means to repeatedly hit or touch your opponent or object field to the other side of the field as well as preventing attacks opponents punch or touch objects to the field itself. Rally is take across the net ball game between two teams with opposing berahkir scoring or moving the ball (Barbara L. Viera, 2004:4). From the above it can be concluded that the opinion of the game volleyball is a game whose activities seek to return the ball to each other by entering the

opponent's area ball passes over the net with a goal for the opposing force is not able to return the ball so that the printed score / point.

E. Research Methods

This type of research is the development of research. Development research model chosen is the research and development of educational models developed by Borg and Gall, the procedure: through four phases: a preliminary study, the development stage, trial phase, and dissemination phases. Determination construct instruments volleyball game that consists of current assessment instruments persiapan will play ball, play ball appraisal process technique, ball placement outcomes assessment, and assessment of the value contained when play is done through physical education expert opinion, expert volleyball game, measurement experts, and Penjasorkes teacher.

The study subjects consisted of two elements, namely educators and high school students in the five districts in the province include SMAN 1 Yogyakarta, Wates SMAN 2, SMAN 1 Seyegan, SMAN 1 Sewon, SMAN 1 Tanjung Sari. Determination of the coefficient of reliability assessment instruments performed using the program package genova based on generalizability theory developed by Cric and L.Brennan consisting of theory G (Generalized study) and D (Decision study) component of variance is a person, rater, item, person interaction and rater, and error, and the interrater Cohen's Kappa coefficient.

F. Conclusion

The results of the research are (1) the form of learning result instruments for physical education and sport health materials on volleyball include, the task sheets for the competence test, the scoring sheets, the assessment guidance for rubrics (criteria) equipped with checklists and the assessment procedures for practicing volleyball (2) the assessment instruments use the content validity in the good category according to the experts judgments (3) The reliability of the assessment instruments use the Genova program with the coefficient 0.82, and Cohen's Kappa with the coefficient 0.79, both fulfill the qualified reliability (4) The assessment procedures in practicing volleyball include the skill for playing preparation, the skill of playing technique, the skill of ball placing, and the student's attitude during the game. (5) The profile of competence shows that 93% of the students are competent and 7% of the students are incompetent; (6) Based on the opinions of physical education and sport health teachers, the assessment instruments for volleyball can be used easily.

REFERENCES

- American Sport Education Program. (2007). *Coaching Youth Volleyball*. USA. Human Kinetics.
- Alison Wolf. (2001). *Competence-Based Assessment. Competence In The Learning Society*. New York: Peter Lang.
- Azwar, Zaiffudin. (2000). *Reliabilitas Dan Validitas*. Yogyakarta: Pustaka. Pelajar.
- Allen, M. J & Yen, W. M. (1979). *Introduction To Measurement Theory*. Monterey, CA: Brooks/Cole Publishing Company.
- Brennan, R.L. (2006). *Educational Measurement*. Westport: Praeger.
- Crocker, L & Algina, J. (1986). *Introduction To Classical And Modern Test Theory*. New York: CBS College
- Barbara L. Viera .(2004). *Step To Success: bolavoli tingkat pemula*. Terjemahan Raja Grafindo Persada. Jakarta.
- Capel, S. And Piotrowski, S. (eds). (2000). *Issue In Physical Education*. London: Routledge Falmer.
- Depdiknas. (2002). *Kurikulum berbasis kompetensi*. Jakarta : Depdiknas.
- Djemari Mardapi. (2004). Pengembangan sistem penilaian berbasis kompetensi. *Proceeding: Rekayasa sistem penilaian dalam rangka meningkatkan kualitas pendidikan*. Yogyakarta: HEPI
- Daeur, V. Pangrazi, P.P. (1995). *Dynamic Physical Education For Elementary School*. Boston: Allyn and Bacon.
- Ebel, R.L. & Frisbie, D.A. (1986). *Essential Of Educational Measurement*. New Jersey: Prentice-Hall, inc.
- Gill Fellingham. (2006). *Skills Needed to Be a Good Volleyball Player*. Diambil 28 Januari 2012. <http://www.livestrong.com/article/516723-skills-needed-to-be-a-goodvolleyball-player/#ixzz3Hhl36k7H>
- Herman, L.,P. Aschbacher, & L. Winters. (1992). *A practical guide to alternative assessment*. Alexandria, VA: Association for supervision and curriculum development.

- Hayton, G. & Wagner, Z. . (1998). *Performance Assessment In Vocational Education And Training. Australian and New Zealand Journal of Vocational Education Research*, vol 6, no. 1, pp. 69–85.
- Jennifer L Fiset; Judith H Placek; Marybell Avery; Ben Dyson; Connie Fox; M. *Strategies*; Jan/Feb 2009; 22, 3; ProQuest Education Journals pg.33
- Johnson, R.L., Penny, J.A., & Gordon, B. (2009). *Assessing performance: designing, scoring, and validating performance task*. London: The Guilford Pres.
- Joel Dearing. (2003). Sport Fundamentals Series Volley ball Fundamentals A better way to learn the basic. USA. Human Kinetics
- Kinda S. Lenberg. (2006). Volleyball Skills & Drills. American volleyball Coaches Association. USA. Human Kinetics
- Lichtenberg, J.W, et al. (2007). Challenges to the assessment of competence and competencies. *Article*. Professional Psychology: Research and Practice, Vol. 38, No. 5, pp 474–478.
- Lund, J.L & Mary Fortman Kirk. (2002). *Performance based assessment for middle and high school physical education. Human Kinetics*
- Linn, R. L., & Gronlund, N. E. (1995). *Measurement and Assessment in Teaching*. Seventh Edition. Englewood Cliff: Merrill, an imprint of Prentice Hall.
- Taconis, R., Van der Plas, P., & Van der Sanden, J. (2004). The development of professional competencies by educational assistants in school-based teacher education. *European Journal of Teacher Education*, 27, 215–240.
- Smith, Alison. (2009). *The sewing book*. New York: DK Publishing
- Mulayasa.(2006). Kurikulum Tingkat Satuan Pendidikan. Bandung: PT Remaja Rosdakarya.
- Metzler, Michael W. (2005). *Instructional models for physical education second edition*. USA. Holcomb Hathaway publisher.
- Orlich D. dkk. (2007). *Teaching strategies: A guide effective instruction*. USA

- Popham, W. James. (1995). *Classroom assessment*. Boston: Allyn & Bacon
- Veal, M. (1992). The role of assessment in secondary physical education A pedagogical view. *Journal of Physical Education, Recreation & Dance*, 63(7), 88-92.
- Wuest, D. & Bucher, C. (2009). *Foundations of physical education, Exercise science and sport (16th.Ed.)*. NY: McGraw-Hill.
- Wiggins, G. P. (1993). *Assessing student performance*. San Francisco: Jossey Bass Publishers.
- Yorkovich, S. A, Waddell, G.S, & Gerwig, R.K. (2008). Competency-based assessment systems: Encouragement toward a more holistic approach. Diambil pada tanggal 5 Januari 2010 dari:
http://spiritoforganization.com/documents/Waddell_Competency_Based_Assessment.pdf.
- Yoyoh Jubaedah. (2009). *Model Penilaian Keahlian Tata Busana Berbasis Kompetensi Nasional Di Sekolah Menengah Kejuruan. Disertasi*. Tidak dipublikasikan Bandung: Universitas Pendidikan Indonesia.
- Yuyun Yudiana dan Toto Subroto .(2010). *Permainan Bolavoli* . Bandung : Fakultas Pendidikan Olahraga dan Kesehatan Universitas Pendidikan Indonesia.

INNOVATION RESEARCH IN MATEMATICS EDUCATION THROUGH THINK PAIR AND SHARE IN ELEMENTARY SCHOOL

Lusi Rachmiazasi Masduki – UPBJJ Semarang

lusi@ut.ac.id

Djoko Sri Bimo – UPBJJ Semarang

djokosb@ut.ac.id

Abstract

Have you ever watched the learning in kindergarten? At the beginning of learning, children are given the opportunity to talk about their experiences and the others respond. The ability of kindergarten children can be developed by constructing knowledge gained from their experiences and environments. Children's characters grow because of the interaction between the children in learning process. Those are the courage to ask, and to opine.

On the other hand, have you ever watched the learning in elementary school ? At the beginning of learning, the children must sit, hands folded, listening to what the teacher explain the lesson material. In mathematics children are rarely involved to practice and rarely given the opportunity to ask questions and to express their opinions when they are learning. Is this such a young character assassination?

Parents must be proud of their son's success. Success as a model student usually starts from courage in expressing their opinions to others. To express opinions are manifold. In this case, it can be formed from the experience that had just occurred, and such courage in setting sentences spontaneously when they asked. So elementary teachers need to improve with innovative teaching using cooperative learning think pair and share model.

Primary teachers to realize that innovations by doing further research on children thinking ability, the ability to share with friends about what is understood and what is still not understood.

This research needs to be done because we hope the result will convince us that to courage in expression facilitate students to grasp new mateial more quickly.

Keywords: innovation, learning research, think pair and share

Preface

Comparative studies are often the alternative choice for headmasters and teachers to know the progress of a school, which is then used as a measure of success. Education is considered to have been successful when the school has been able to resemble the organization of learning in schools where the comparative study. They forget that there is something very important and it requires attention to maintain the mental development of the child in learning. School, the teacher may have a different character, so his students do, though the students share the same stage of mental development in line with the opinion of Jean Piaget that elementary students are still in the concrete operational stage of development. Concrete operational stage is the process of mental development of the child, where the child can only understand a new concept when the concept was connected with his experience. Among the new concepts associated with the experiences of the child, the child will make it easier to construct new knowledges by itself.

Have you ever witnessed the learning that takes place in a kindergarten or in an early childhood education? At the beginning of learning in the kindergarten, in the early childhood, almost every day children are given the opportunity by the teachers to talk about his experiences and the other children have the opportunity to respond to the story told by his friend. The ability of the child's understanding in kindergarten, in early childhood, is expected to grow by constructing knowledge gained from experiences and environments. Their characters grow because of the interaction between the children themselves in the learning process. The ability and the character that can be developed are bold to ask, think and socialize.

On the other hand, have you ever watched the learning undertaken in a elementary school ? At the beginning of learning, which it happens almost every day, the children must sit, hands folded, listening to to what the teacher explain the lesson material. Teachers often impatient when they saw his pupils did not follow their orders. In mathematics, children are rarely involved to practice and are rarely given the opportunity to ask questions and express their opinions when they are learning. Is this such a young character assassination?

To answer yes or no as an answer choice, research is needed on the success of learning, so that we as educators have confidence that it is actually in the process of mental development of children requires appropriate facilities to achieve maximum capacity. The facility is highly depend on the ability of the teachers to reflect on the learning process that has been conducted, as well as the ability of teachers to pick and choose appropriate strategies to the subject matter to be taught. The selection of instructional strategies and models that will be greatly influenced by the experience of teachers as well as the power of innovation in exploring and reflecting on its performance. Attention to the process of learning in a kindergarten and in an early childhood development and then for

the next step in an elementary school is very commendable, because it support the mental development of the child process. The process of mental development of children become optimal conditions where the learning did not have pressure that shackles their creativity development.

The process of learning in the educational unit stipulated in Government Regulation (PP tentang Standar Nasional Pendidikan, 2005). That the learning process should be conducted in an interactive, inspiring, fun, challenging, motivating the students to actively participate and provide enough space for innovation, creativity and independence according to their talents, interests and physical and psychological development of students.

One model of learning which is expected to facilitate the different abilities and learning activities of the students are cooperative learning Think Pair and Share which is sourced from the the philosophy of constructivism. Think Pair and Share cooperative learning is expected to improve student learning outcomes, either low, medium, or high rate capability. In addition, Think Pair and Share cooperative learning can also have an impact on improving social skills and attitude of mutual cooperation which is the main characteristic of Indonesian society. The research that has been done by using a Think Pair and Share cooperative learning is a learning model which inspired courage kindergarten and early childhood education for children to express their ideas in the class. The research that the authors did in elementary school got some success to build courage students to express ideas, to socialize, and to argue, though only three of 41 fourth grade students of elementary school in Petompon Semarang in 2009.

Discussion

The education carried out in early childhood education is an attempt to stimulate, guide, nurture and provide the learning activities that is expected to result in the ability and skills of the child to the fullest. The education in early childhood is an education that is actually done on children from they were born until they are eight years. The education should be based on the children's needs, which is adjusted to the espoused values in the neighborhood where they lived, according to the stage of physical and psychological development of children, carried out in an atmosphere of fun and play that is designed to optimize the potential of the children. Based on Government Regulation no. 19 of 2005 on National Education Standards, Article 19, paragraph 1 states that the process of learning to implement an interactive, inspiring, fun, challenging, motivating the students to actively participate and provide enough space for innovation, creativity and independence according to their talents, interest as well as psychological and physical development of students. The

learning process will be optimal if it is supported by the approach according to the needs and interests of the children.

Learning Model in Kindergarten

Learning model is a pattern used by teachers in implementing learning activities in order to help children to achieve specific learning outcomes (Debdiknas, 2005). The components of the learning model consists of: identity, competency to be achieved, learning steps, tools or learning resources and evaluation. It means that to whom the instructional materials to be delivered; students competencies are likely to be developed; stages of what will be chosen as a step towards success; using the tools and resources in order to learn what the material easy to understand by the students, as well as using a measuring tool to determine what success or failure of the learning process. According Sujiono (2009:140) there are two types of learning model in early childhood, namely teacher-centered learning and child-centered learning. Teachers will feel the success in implementing the learning, if teachers choose child-centered learning, which is attentive to the needs of child development. Parents must be proud of their chilgren's success. Success as an honor student usually starts from courage in expressing their opinions to others. To express opinions are manifold. In this case, it can be formed from the experience that had just occurred, and such courage in setting sentences spontaneously when they asked.. Furthermore, it is important for the elementary teachers to improve an innovative learning using a think pair share cooperative learning. Child-centered learning model consists of a group of learning model and a learning based on child's interest model. Group learning model or cooperative learning is a learning that seeks to help the students to learn the material and learn a variety of skills in order to achieve the goals and objectives of social and relationship with other people, at least they will be able to communicate with a bench friend.

Group learning model that refers to the theories of John Dewey stated that the classroom should reflect the wider society and a laboratory for real-life learning (Hayati, 2012). Teachers should create a democratic learning environment with a fun learning process. The primary responsibility of teachers is to involve the learners in the learning process on a variety of indicators related to mathematical problems of everyday's life. Learning in a group makes students work in a team to achieve learning objectives; members of the group consist of students who have low, medium and high ability to learn; whenever possible, members of the group consist of a mix of races, cultures and genders; reward system is oriented in the group. The next principle, in a study group, each group member can be swapped to another selected group and the place is empty, so students can choose the desired group. Minimum amount of group are two children. It means they can be paired with a bench friend.

The benefits of group learning are to motivate the learners that have low and high ability in learning in order to help each other, to cultivate a high tolerance to the people in different races, cultures, social classes, even the children have special needs. The next benefits of group learning is to teach the skills of cooperation and collaboration among the students.

How to set the topic (subject matter) and the students in the classroom, in order to encourage and assist students to participate optimally in the classroom. Motivation is given in order to develop a conceptual understanding of the topic which is being studied through the use of TPS (Think-Pair-Shares) cooperative techniques.

The selection of any strategy requires precision in designing of learning models, it can be supported by the ability to reflect on the success of the learning that has been done before. Think-Pair-Share is designed to provide the opportunity for students to think about a given topic, and allow them to formulate concepts with their ideas alone and they can share their ideas with their colleagues in the group.

For example, by providing a mathematic CD learning about flat model to the students, at least one day before the content of material on the CD will be discussed in class. The command given are:

1. Convey the material that has been mastered to your bench friend.
 2. Do the exercises, and then explain to your friend about the reason of the answers given.
- Learning strategies should give a priority to the active participation of the students in the classroom by providing motivation and responsiveness to the students. Moreover, this strategy provides an opportunity for all students to share their thoughts to at least one other student, so they will increase the sense of involvement in the learning environment. Think-Pair-Share can also be used as an assessment tool in obtaining information about the bravery to convey the ideas in front of the class, when the students' ability to discuss their ideas with a bench friend occurs, the teacher can listen to conversations that take place and respond to the the students's success and courage in arguing. In this strategy, the problems and the submitted command should be clear and the students have time to think about it individually, and then they work in pairs to solve the problems and they share their ideas. Think-Pair-Share is easy to use in a lesson planned particularly in mathematics, it is also an easy strategy to use to spur the situation of discussion. This strategy can be used for a variety of daily classroom activities such as planting concept of symmetry on flat model. The questions that can be discussed, such as "flat up anything that has a folding symmetry?"; "Flat up how that does not have folding symmetry?"; Another appropriate questions is connected with the development of the topic etc. The Think-Pair-Share helps students to develop a conceptual understanding of the topic, to develop the ability to filter the information and to draw the conclusions, and to develop the ability to consider the

viewpoints and opinions of other friends. Before introducing the strategy of the Think-Pair-Share to the students, make sure the indicator as your learning goals.

You can select the new material and make sure the students excited to open the material through a computer; laptop, or rent a computer in a cybercafe. Make sure that the Instructional CD which was distributed to each student is in good condition and it does not have a problem. The tremendous success happens when all students in a class do not forgot to open and to read the material.

You can develop a set of questions or ask the students to master the concepts on the substance of the material that has been studied. The teachers need to explain the strategy and objectives to be achieved after students have learned a mathematics learning CD on a material of symmetry flat model. The teachers provide a guidance for the discussions that will take place the next day in the class.

Explain to students that they will (1) think about a topic or the answer of the question on the CD individually, (2) pair with a partner to discuss the topic or the question, and communicate (share) ideas to the class, (3) argue to the whole friends in the class why they select the answer like that, (4) provide an opportunity for students from other groups or couples to ask questions. After the students have a solid understanding and correctly on material concept of folding symmetry on flat model, then the material can be developed by asking students to identify the objects around them which has or does not have a folding symmetry, through the steps below,

The teachers can also ask students to write or to make a diagram about their responses when they conduct a Think-Pair-Share model.

-Think: The teacher starts the lesson by asking high-level questions to the students about specific topics to be discussed. Students "thinking" about what they already know or they have learned about the topic of folding symmetry of flat model and give up a certain time limit (it is about 3-5 minutes).

-Pair: Each student must be paired with another student. The teacher can select whether student's paired in a couple bench or let students choose their own partner. Remember, to be sensitive to the learners' needs when the teacher make a pair. Students share their thoughts with their partner, discuss ideas, and ask questions of their partner about their thoughts on the topic (5-10 minutes).

-Share: After they had enough time to share their mind and discussion, teachers expand the "share" in a whole class discussion. Allow each group to choose a member who will be able to appear in front of the class to express their thoughts, ideas, and questions to the whole class. After the class "share" itself, you can choose a partner who has the courage, and it is able to convey the argument as a group which earn rewards and deserves to be imitated by other groups. More and more students who dared to come forward to present the material's

mastery; they brave to argue; they can cooperate with the bench friends. It means that the use of this strategy began to be said successful.

Think-Pair-Share is as a Cooperative Learning Strategy.

Related to that, the progress of science and technology requires a person who is able to master the information and knowledge. Thereby, we need the ability to acquire, select and process information.

These abilities require critical thinking, systematic, logical, and creative. Such as Wittgenstein said (in Suriasumantri, 2003: 199) that mathematics is the logical method. Correspondingly with the demands of future students, the use of Think-Pair-Share as a Cooperative Learning Strategies can be said to be very precise and it is not contrary to the students' nature. Especially, since they were in kindergarten and in their early childhood, they has ever had a development facility of the ability to answer questions, and ventured foward, brave to ask for a storytelling.

The variety of attempts have been made by educational experts to enhance the activity and student mathematics learning outcomes. But until today, it has not shown encouraging results, so the election efforts to Think-Pair-Share cooperative learning as a strategy is urgently needed (Upu, 2003: 77). Cooperative learning has been believed to become an alternative in improving the quality of mathematics learning activities.

The result of other research supports that the use of cooperative learning as a strategy is Lundgren (in Suradi, 2005: 23) that cooperative learning has a very positive impact on the success of low students learning outcomes. While, the results of Leiken and Zaslavsky's research (in Suradi, 2005: 1) suggests that learning process of mathematics in a cooperative which was used with the engage students actively interact with the other students to make students more capable and brave to do the activity during the learning process. Cooperative learning of Think-Pair-Share emphasis on the use of certain structures or patterns that are designed to influence the habits of interaction among the students. The Strategy of Think-Pair-Share grows from the cooperative learning research. Strategy Think-Pair-Share cooperative learning grows from the research. This is an effective way to change the pattern of students just sit, hands folded, and listening to the teacher in the classroom becomes to the students dare to appear, arguing and work together with the other friends. Think-Pair-Share has established procedures explicitly to give students have more time to think, respond, and help each other.

Writers choose TPS as a cooperative learning model for teaching materials of folding symmetry of flat model for illustration only. When it applied in everyday life, then the students can skillfully to feld towels, handkerchiefs, napkins, rugs neatly as a result from the understanding the concept of symmetry of flat model.

The result of the other research, provides the reasons for selecting the TPS that has also been done on the subject of trigonometry, for three reasons:

First, trigonometry material is one material that is considered difficult by students, the experience gained by researchers three years ago shows that student learning outcomes in trigonometry material is low, it looked from the the acquisition of daily test results on the KD's average is less than 50% from KKM. After applying the TPS, the average becomes 75%.

Second, a lot of material related to trigonometry human activities or very close to the daily life of people, especially students's life. After applying TPS, then the students became enthusiastic in understanding the material of trigonometry. **Third**, there are many issues around the environment of the communities in which students regarding the content of trigonometry to be solved, this allows the students to build their own or in groups of of mathematics concepts related to the trigonometry material.

Based on these three reasons, in learning process of mathematics required to implement it by learning group. In the study group, students can responsible for a given task either held individually or in groups, and indirectly the students will remind each other if they get difficulties in learning of mathematics. It also occurs when the research was conducted in Elementary School. Need to implement the specific learning model with an alternative approach that should always be considered and implemented in order to the learning atmosphere further is no longer drab. As for the learning who take shelter in the constructivist theory is cooperative learning, so that by implementing cooperative strategies, it can generate students' skills in the mastery of the concept of the material is being taught.

Stages or steps in the group learning can be described as follows:

1. The lesson begins with the teacher discuss the lesson goals and motivate the learning.
2. The next step is the presentation of information in the form of performing in front of the class.
3. The learners were organized into the study groups.
4. The learners were helped by other friends to work together to complete the task.
5. The learners are not required to complete the group task itself, but they can move to other groups in activities when there is an empty place in the group.
6. Presentation of the final outcome or anything that has learned by students is motivated to have the courage and dare to argue.
7. Give the recognition to the efforts of groups or individually who have been successful

Learning Model Based on Students' Interests

Model of learning based on their interests are learning model that gives an opportunity to the students to choose their own activities or perform in accordance with their interests. The learning based on interest is designed to fulfill the needs of the specific students. The learning based on interests can be designed to be integrated with the Think-

Pair-Share as a Cooperative Learning Strategy in order to fulfill the needs of the specific students.

In principle, the learning model based on interests prioritizes :

1. learning experience for each child individually.
2. helping child to make choices through his activities that enable and centered on activities to find something.
3. involves the participation of the family. Implementation of learning based on interests can use some areas, such as: the area of religion, beams, language, drama, arithmetic / mathematics, science, art / motoric skills, music, reading and writing. In one day, the variety of playing activities can be associated with the subject matter.

Stage or step of learning based on interests:

1. The teacher explains the activities in the area which is programmed with the number of children who may be playing in the area, for example, natural consists of sand playing activities, colored water playing , soapy water shuffle playing, farming palying. The teachers prepare entry tickets as the number of children in accordance the center of capacity, for example, this natural area is only accommodate 6 children, the teacher just set up 6 tickets as a token entry. Children who have completed the activities in natural areas can move to restore the ticket area at the entrance area to be used the next child.
2. The teacher divides the number of children in any activity playing. The division of aims to ensure that all children have planned games experiences that day.
3. The teachers provide the opportunities for the children to choose the activities freely according to their interests. the given options are not far from the area that has been prepared for more purposeful learning.
4. The children can switch the activities according to their interests if there is an empty place in the event.
5. The teacher records every activity undertaken by the learners' as a process of monitoring development of the children.
6. If there are learners who do not want to perform the activities in all the activities which is programmed, then the the teacher can motivate the children in order that they want to try to play together with their friends.
7. The teachers and the children evaluate the learning together.
8. Teachers provide the recognition and reinforcement to attempts that have been made by the children. The elementary teachers can realize that innovation, that is by doing more researches to the children's thinking ability, the ability to share with their friends about what is understood and what is still not understood. This research needs to be done

because we hope that the results will convince us that to cultivate the courage in expression can facilitate other students to capture new materials more quickly.

Conclusion

Successful learning begins from the ability of teachers to reflect on the performance of the learning that has been done. The sensitivity of reflection will find that students need a psychological development and it should be facilitated appropriately in order they develop themselves optimally. If only the teachers have never handcuff physical and psychological development, then the student is no longer awkward to perform in front of the class to present the results of his thinking, argument, and he will be able to share ideas of what he had learned. Learning will be able to succeed optimally if supported by student's interest.

References

- Depdikbud, "Peraturan Pemerintah tentang Standar Nasional Pendidikan," Jakarta, 2005.
- Hayati, Nur, "Strategi Pembelajaran Anak Usia Dini," 2012
- Kaniyem, "Penggunaan Model Cooperative Learning Tipe Think Pair Share (TPS) Untuk Meningkatkan Minat dan Prestasi Belajar Kimia Siswa Kelas X SMA N 1 Girimarto," Tesis, Surakarta: Universitas Sebelas Maret, 2010.
- Sujiono, Yuliani Nurani, "Konsep Dasar Pendidikan Anak Usia Dini," Jakarta, Indeks, 2009.
- Suriasumantri, J. "Filsafat Ilmu : Sebuah Pengantar Populer," Jakarta: Pustaka Sinar Harapan. 2003.
- Suradi. "Interaksi Siswa SMP dalam Belajar Matematika Secara Kooperatif," Disertasi Doktor tidak diterbitkan. Surabaya: PPs UNESA Surabaya. 2005.
- Upu, Hamzah. "Problem Posing dan Problem Solving dalam Pembelajaran matematika," Bandung : Pustaka Ramadhan. 2003

THE ANALYSIS OF SOCIAL MATHEMATICS TEACHER'S DIFFICULTIES IN SOLVING MATHEMATICS PROBLEM

Nidya Ferry Wulandari ¹⁾, Heri Retnawati ²⁾

¹⁾ Student of Mathematics Education Program, Faculty of Mathematics and Natural Science
State University of Yogyakarta

²⁾ Mathematics Education Program, Faculty of Mathematics and Natural Science
State University of Yogyakarta

Email: ¹⁾[nidyaferri@gmail.com](mailto:nidyaferry@gmail.com), ²⁾retnawati.heriuny1@gmail.com

Abstract

This study aims to describe the level of difficulties and the errors often faced by high school social mathematics teachers in Indonesia in solving mathematics problems, and the factors that influence them. This research was a descriptive study with mixed methods approach. The subject of this research was all of the social mathematics teachers in all regions in Indonesia who teach in senior high school with graduation rates below 80% and some teachers from school with graduation above 80% in National Exam 2011, whereas the object of this research was all of teachers' competences test documents from Balitbang Kemdikbud in 2011 that collected by documentation. The results showed that the difficulty level for making conclusion was in very high category (89,38%) and for carrying out the plan is belong to middle category (60,03%). The difficulty level for devising a plan was in average category (46,64%) and for understanding the problem was in low category (39,46%). The errors in mathematics problem solving were reading and comprehension errors, transformation errors, process skill errors, and encoding errors. Reading and comprehension errors were led by the failure of the teacher to write the requirement information. Transformation errors were led by the failure to formulate or strategy to solve math problems. Process skill errors were led by the transformation errors. Encoding errors were led the failure of the teacher to write the conclusion. In conclusion, the factors leading to teachers' difficulties in Sleman and Yogyakarta were psychology condition, teacher readiness, and teachers' misconception of mathematics.

Keywords: difficulties, teacher, mathematics, problem solving

Introduction

The main factor that determines the success of education is the ability of the teacher in the learning activities, one of which is the professional competence. Teacher's professional abilities gained from the previous teacher education and development as a teacher. The reason for the importance of teacher professional development materials disclosed by Franke in Ingvarson, et. al. (2004: 11) that is because the learning materials are always making progress and updates so that teachers also need up to date information in learning, especially in accordance with the linear subject of teaching. The development of learning materials should be known by the teacher to enhance understanding and knowledge of teachers. According to Djohar (2006: 57), the development of teacher competencies can improve the performance of teachers in class. Beginning teacher performance is largely determined by the ability of the results of initial teacher education, but continues to evolve according to the experience of the teacher in the learning activity. Teacher performance and teacher's role determine the achievement of students, particularly in relation to teaching and learning (Moh. Uzer Usman, 2006: 4). National Examination is a tool used to know students' achievement. Based on data from the National Education Standards Puspendik Balitbang, the result of National Exam in 2011, the average of math scores of social senior high school students is lower than science senior high school. The average math scores of social high school students is 7.58 and the average math scores of science high school students is 8.03. Then the failure rate of social high school students is greater than science high school students. Percentage of failure in National Exam 2011 of science high school students is 4.803%, while the percentage of failure of social high school is 11.166%. Teachers are key factors in helping students to learn. Polya (1981: 116) reveals fundamental subject for teachers is that a teacher must master the material in accordance with the field being taught to students. Therefore, in the learning activities of teachers as professional educators should have the ability in understanding the material.

Based on the result of Research in 100 cities by the Research and Development Department Kemdikbud is stated that the ability of math teachers of social high school was not as expected. Mastery learning materials mathematics teachers are still not optimal. Based on the result of Research in 100 cities is conducted by the Research and Development Department of Kemdikbud against high school teachers in Indonesia, which has a graduation rate below 80% and the number of schools with graduation rates above 80% for the city in the National Examination 2011. The average of social high school math teacher skills for the region 1 (Java) is 75.37 (Samson & Agus Hadi Widiyantoro, 2011: 33), while for region 2 (Sumatra) is 55.63 (Sunarto & Heri Retnowati, 2011: 38). The average of social high school math teacher's ability region 3 (Kalimantan, Sulawesi and NTB) is 48.66 (Djemari Mardapi & Nuchron, 2011: 39) and for 4 regions (Papua and NTT) is 54.96. From the results above, we

can say that mastery skills of social high school math teacher for three regions, namely region 2 (Sumatra), region 3 (Kalimantan, Sulawesi, and NTB), and region 4 (Papua and NTT) has not yet reached 75. This indicates the low ability of social high school math teacher in understanding the material of math.

According to Adams & Hamm (2010: 67) stated that the ability to solve the problems and the ability of the theory are needed in mathematics. It means that a math teacher professional not only has the ability of the material and theory, but also the ability to solve problems. Furthermore, Polya (1973: 1) stated that one of the important tasks in learning math teacher is helping learners to develop their ability in solving mathematics problems. So, as a teacher of mathematics in addition must have a mastery and understanding of the material and must also have the ability to solve mathematics problems. Killen (2009: 272) classify three activities of teachers in the mathematics learning activities with problem solving, namely: (1) teachers help students to analyze and clarify the problem, (2) the teacher helps students to develop problem-solving ideas, and (3) teachers help students in evaluating the problem-solving ideas. Teachers' ability in problem solving is inseparable from the mistakes made by the teacher. According to White (2005: 17) error in mathematics problem solving errors include reading errors, comprehension errors, transformation errors, process skill errors, and encoding errors. Those errors are related to Polya's problem solving steps are understanding the problem, planning a solution, a plan completion, and interpret the conclusion. Reading comprehension errors and errors are errors in understanding the problem. In this aspect, the teacher must be able to read the whole sentence and find critical information while reading and understanding the issues necessary to resolve the problem. In the aspect of teachers' mathematical model can perform transformation errors because the teacher was not able to turn the sentence into a sentence about math. Process skill errors are errors in the process of solving mathematical problems in accordance with the settlement plan has been made. Encoding errors are errors in making conclusions. Therefore, it is important to analyze the level of difficulty and the errors in solving math problems as well as the factors causing them that can later be used as a reference in improving problem-solving skills by a math teacher, so the teacher is able to carry out learning activities with a more professional to improve student achievement outcomes.

Methods

This research was a descriptive study with mixed methods approach. The research was conducted in four regions in Indonesia, namely region 1 (Java), region 2 (Sumatra), region 3 (Kalimantan, Sulawesi, and West Nusa Tenggara), and region 4 (Papua, Maluku, and NTT) with the data document of teachers' response to the test competence of Balitbang Kemdikbud in 2011. The research started from October 2012 to February 2013.

Documentation is held in October 2012 at the State University graduate building Yogyakarta (UNY). Interview is conducted to complement the documentation data. The interview is held to social high school math teacher in Sleman and Yogyakarta. Reference of retrieval research subjects is based on the results of the low scores of teachers in teacher competency tests conducted by the Research and Development and by the low Kemdikbud examination results of students for mathematics in 2012. Interviews were conducted in SMA Muh. 1 Sleman, SMA Negeri 1 Ngemplak, SMA Islam 1 Prambanan, SMA Muh. 1 Prambanan, SMA Taman Madya IP Yogyakarta, SMA Muh. 2 Yogyakarta and SMA Santa Maria Yogyakarta. The interviews were held on January 28, 2013 until February 11, 2013.

The subject of this research was social high school math teacher in schools throughout Indonesia with graduation rates below 80% and the number of schools with graduation rates above 80% for the city with the best value in passing the National Exam in 2011. The number of teachers who were respondents in this study was 354 teachers that are from four regions across Indonesia. The number of teachers from the region 1 is 73 teachers, in region 2 there are 96 teachers, from region 3 there are 113 teachers, and from region 4 there are 72 teachers. The object of this study is the result of social high school math teacher competency tests conducted by Research and Development Department Kemdikbud in 2011.

The research design which is used in this study is Explanatory Design with Participant Selection Model. The purpose of this Explanatory Design is a researcher uses quantitative data analysis for the determination the qualitative data, then they were analyzed separately and the results combined in making conclusions or interpretation of the data. First, researchers collected quantitative data through documentation of teacher response to teacher competency test results conducted by Research and Development Department Kemdikbud in 2011. From these documents it obtained some research subjects who will be participating in the interviews to find qualitative data, and then the results of interviews obtained reduced, presented, and verified to get a conclusion. The final step is the interpretation of quantitative and qualitative data to obtain the conclusion of this research.

Information or data in this study were obtained through documentation and interviews. Instruments which are used in this study are the five items test, scoring guidelines and interview guides. The five items refers to the Competency Standards (SKL) based on low absorption of National Examination (UN) in 2011, namely (1) determining the result of algebraic operations of the roots of quadratic equation, (2) calculate the probability of an event, (3) complete the inequalities form of roots, (4) designing or resolve problems relating to linear programs, and (5) to calculate measures of central tendency of the data groups in the form of tables or diagrams.

Data analysis in this research uses quantitative and qualitative data analysis. Quantitative data analysis is performed on the document with the teacher competency test results with scoring guidelines that have been made. If the teacher writes solving problems steps, they

will be given one point for each step, whereas if the teacher is not able to write solving problems steps that will be given zero points. In this research, quantitative data were analyzed descriptively. To determine the level of difficulty of mathematics teachers at every stage of mathematics problem solving, is calculated using the formula.

$$P = \frac{\sum S}{\sum T} \times 100\%$$

Keterangan:

P : Percentage level of teachers' difficulties

$\sum S$: The sum of score false answer

$\sum T$: The sum of maximum score

And then the percentage of teachers' difficulty level is categorized based on Suharsimi Arikunto determination (2003: 245).

Table 1. Difficulty Level

% Error	Difficulty Level
80 – 100	Sangat tinggi
66 – 79	Tinggi
40 – 65	Sedang
0 – 39	Rendah

In this study, the results of the qualitative interviews were analyzed descriptively. Qualitative analysis data are data reduction, data presentation, and data verification or conclusion.

Results and Discussion

Percentage comparison of the level of teachers' difficulties in solving mathematics problems of each item is presented in Figure 1 below:

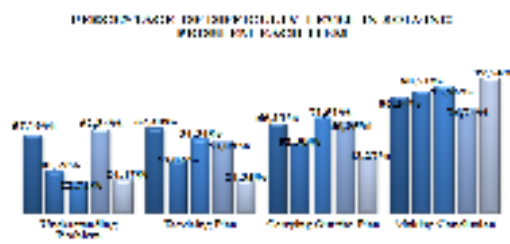


Figure 1. Percentage Comparison of Teachers' Difficulties in Solving Math Problems

Based on the analysis of completion of each item about the problem is got the result that the highest level of difficulty to understand the problem about the number 4. It means that teachers still have difficulty in understanding the problems associated with the linear program. Highest difficulty level for planning the strategy is in problem 1. The devising plan step for problem 1 includes imposes the condition that the length and width of the soil must be more than zero, and formulate a formula in accordance with the known data. Highest level of difficulty to carry out the plan step is in problem 3 and the highest level of difficulty to interpret the results is about number 5. Overall the teachers are still having trouble on Question 4. This is consistent with the results of interviews conducted for teachers in Sleman and Yogyakarta that question 4 is quite difficult.

Furthermore, according to the focus of this study was to determine the level of difficulty of the step to solve mathematics problems for social high school math teacher. Based on the analysis, the result of the difficulty level for social high school math teacher in solving mathematics problem is presented in Figure 2 below:

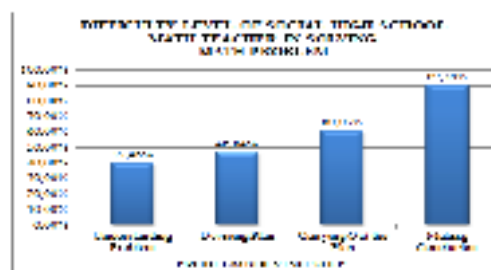


Figure 2. Difficulty Level of Social High School Math Teacher in Solving Math Problem

From the four steps of problem solving, step of making conclusion are still often ignored by teachers because the teachers as much as 89.38% of the 354 social high school math teachers did not interpret the results. The difficulty level for carrying out the plan step is 60.03%. The teachers made error in calculations and errors in completing the requirements that must be completed. The difficulty level for devising plan step is 46.64% and the error is in determining the conditions that must be completed in solving mathematics problems. Furthermore, the difficulty level in understanding the problem got the smallest percentage that is equal to 39.46%.

The difficulty level of math teachers can be seen from several criteria. For understanding the problem step, the criteria are able to understand the core of the problem, using the data needed, able to make math model from the problem and able to make a sketch to completion related issues as needed. Results of data analysis showed that the level of difficulty of the teacher to understand the the problem was 39.46% in the low category so that it can be said teachers have been able to understand the problem.

The second step is devising plan with criteria for being able to find a pattern for solving problems or know a formula related to problem solving, and write down the conditions which must be completed for problem resolution. Based on the analysis, the level of difficulty for devising plan step in the medium category is 46.64%, so it can be said that there are many teachers who made a mistake and had difficulty in devising plan to solve math problems. The third step of problem solving is carrying out the plan. The criteria to determine the level of difficulty are being able to complete the third phase of the conditions that must be completed and be able to do the calculations properly. The difficulty level of this stage in the medium category (60.03%) so that it can be said that there are many teachers who made a mistake in the execution plan of problem solving.

The last step of problem solving is making conclusion. The criteria to determine the level of difficulty in this stage are teachers interpret the results of the calculation as a conclusion and look back at what the core problem are answered in the conclusion in addition to checking measures calculations have been carried out. The results of data analysis indicate the level of difficulty for making conclusion was 89.38% which is means the category is very high, so most teachers still do not interpret the result and make conclusion.

The results of the analysis at each difficulty level items in mathematics problem solving are presented in the table and diagram below:

3.1. Difficulty Levels of Social High School Mathematics Teacher in Problem Solving for Number 1

Items number 1 according to competency standard determining the operating results of algebraic roots of quadratic equations. Based on absorption of mathematics in National

Exam 2011, the percentage of achievement for this competency standard is equal to 68.81%. On item number 1, the teacher asked for finding the area of Mr. Andy and Mr. Burhan's land if known the Andi's land is rectangular with size $(x + 3)$ meters and Mr. Burhan's land is rectangle with length $(5x - 3)$ meters and width x meters. The difficulty level in problem-solving steps for item number 1 is presented in Table 2 below:

Table 2. Percentage of Teachers Difficulty in Problem Solving Steps for Problem Number 1

No	Problem Solving Step	% Difficulty	Category
1	Understanding Problem	57,19%	Average
2	Devising Plan	62,40%	Average
3	Carrying Out the Plan	66,11%	High
4	Making Conclusion	86,14%	Very High

More clearly, the following is a diagram of the difficulty level in solving problem number 1.

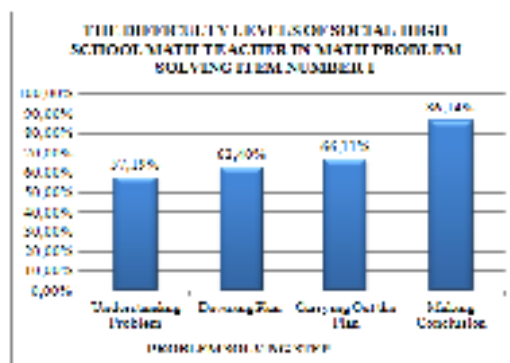


Figure 3. The Difficulty Levels of Social High School Mathematics Teacher in Mathematical Problem Solving Item Number 1

Based on Figure 3 is obtained that as many as 86.14% of the 354 social high school math teacher did not interpret the results nor make conclusion. A total of 66.11% of teachers made a mistake in the calculation for carrying out the plan step. The difficulty level for devising plan is 62.40% of teachers experienced errors on the requirements that must be completed is that the length of the soil it is definitely more than zero. The difficulty level for understanding the problem is as much as 57.19% of an error in understanding the problem.

3.2. Difficulty Levels of Social High School Mathematics Teacher in Problem Solving for Number 2

Items number 2 SKL according to competency standard calculating the odds of an event. Based on absorption of mathematics in National Exam 2011, the percentage of achievement for this competency is equal to 74.97%. On item number 2, teachers are asked to calculate the probability of an event of primes or even number if a six-sided dice thrown one time. The difficulty level category of teachers in math problem-solving steps for item number 2 is presented in Table 3 below:

Table 3. Percentage of Teachers Difficulty in Problem Solving Steps for Problem Number 2

No	Problem Solving Step	% Difficulty	Category
1	Understanding Problem	30,25 %	Low
2	Devising Plan	38,47 %	Low
3	Carrying Out the Plan	51,96 %	Average
4	Making Conclusion	90,51 %	Very High

More clearly, the following is a diagram of the level of difficulty level in solving problem number 2.

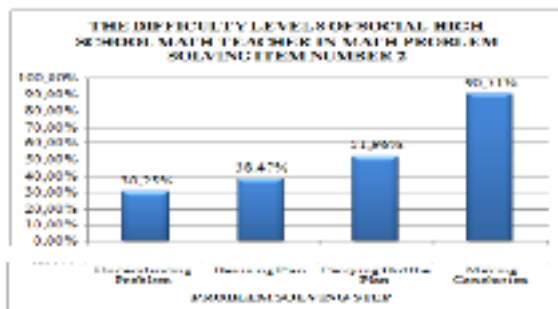


Figure 4. The Difficulty Levels of Social High School Mathematics Teacher in Mathematical Problem Solving Item Number 2

From the diagram above, the biggest difficulty level of problem solving is the stage to interpret the results of which 90.51% of teachers do not interpret the meaning nor make conclusion. The next difficulty level is step of carrying out the plan. A total of 51.96% of teachers made a mistake in the third step. Errors occur predominantly in the calculation error. Then, the difficulty level for devising plan as many as 38.47% of teachers, and the least difficulty level are at the stage of understanding the problem is as much as 30.25% of the 354 teachers of mathematics.

3.3. Difficulty Levels of Social High School Mathematics Teacher in Problem Solving for Number 3

Items number 3 according to competency standard resolving inequalities root form. On item number 3, teachers were asked to determine the completion of the set of inequalities $\sqrt{x} < 4$. The difficulty level of math teacher in problem-solving steps for item number 3 is presented in Table 4 below:

Table 4. Percentage of Teachers Difficulty in Problem Solving Steps for Problem Number 3

No	Problem Solving Step	% Difficulty	Category
1	Understanding Problem	22.71%	Low
2	Devising Plan	54.54%	Average
3	Carrying Out the Plan	71.51%	High
4	Making Conclusion	93.96%	Very High

More clearly, the following is a diagram of the level of difficulty level in solving problem number 3.

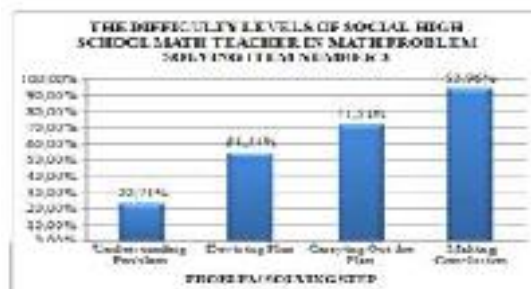


Figure 5. The Difficulty Levels of Social High School Mathematics Teacher in Mathematical Problem Solving Item Number 3

Based on the diagram above, the level of difficulties for making conclusion is 93.96%. Teachers do not purport to interpret the results nor make conclusion to answer the problem. Then, the level of difficulty for carrying out the plan as many as 71.51% of teachers who still make mistakes in calculations and complete requirements to solve problem. A total of 54.54% of teachers still have difficulty in devising a plan or strategy. The smallest difficulty level is at the stage of understanding the problem is as much as 22.71% of teachers who have difficulty in understanding the problem.

3.4. Difficulty Levels of Social High School Mathematics Teacher in Problem Solving for Number 4

Items number 4 according to competency standard designing or resolving problems relating to linear programs. Based on absorption of mathematics in National Exam 2011, the

percentage of achievement for this competency is equal to 54.33%. On item number 4, teachers were asked to calculate the maximum benefit is gained if a trader bought food cake donuts at a price of IDR 2,500.00 per piece and sold at a profit of IDR 500.00 per piece, while the trader bought sponge cake at IDR 4000.00 per piece and are sold with a profit of IDR 1000.00 per piece. The trader mempunyai capital of IDR 1,450,000.00 and donut shop and can accommodate as many as 400 pieces of sponge cake.

The difficulty level of teachers in math problem solving steps for item number 4 is presented in Table 5 below:

Table 5. Percentage of Teachers Difficulty in Problem Solving Steps for Problem Number 4

No	Problem Solving Step	% Difficulty	Category
1	Understanding Problem	62,34 %	Average
2	Devising Plan	53,09 %	Average
3	Carrying Out the Plan	66,95 %	High
4	Making Conclusion	76,74 %	High

More clearly, the following is a diagram of the difficulty level in solving problem number 4, so it can be seen on the stage where teachers had the highest difficulty.

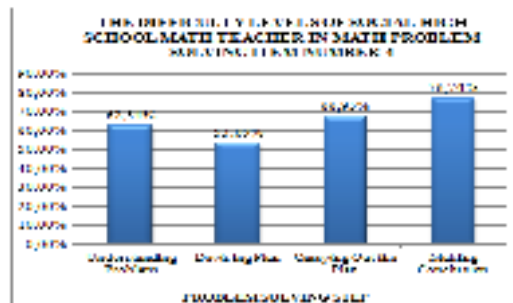


Figure 6. The Difficulty Levels of Social High School Mathematics Teacher in Mathematical Problem Solving Item Number 4

Based on the diagram, the largest difficulty level in solving the problem at step interpret the results or make conclusion is 76.74%. The difficulty level for the carrying out the plan as much as 66.95% of teachers is still having trouble on the third stage. A total of 62.34% of teachers had difficulty in understanding the problem. Then, as many as 53.09% of teachers had difficulty in devising plan to solve the problem.

3.5. Difficulty Levels of Social High School Mathematics Teacher in Problem Solving for Number 5

Items number 5 according to competency standard calculating measures of central tendency of the data groups in the form of tables or diagrams. Based on absorption of

mathematics in National Exam 2011, the percentage of achievement for this competency is equal to 64.28%. On item number 5, teachers were asked to determine the mean, mode, and median of grouped data in Table 6 below.

Table 6. Table Frequency of Problem Number 5

Value	f_i
31 – 40	4
41 – 50	3
51 – 60	11
61 – 70	21
71 – 80	33
81 – 90	15
91– 100	3

The difficulty level of teachers in math problem-solving steps for item number 5 is presented in Table 7 below.

Table 7. Percentage of Teachers Difficulty in Problem Solving Steps for Problem Number 5

No	Problem Solving Step	% Difficulty	Category
1	Understanding Problem	24.47%	Low
2	Downing Plan	24.35%	Low
3	Carrying Out the Plan	43.27%	Low
4	Making Conclusion	85.24%	Very High

More clearly, the following is a diagram of the difficulty level in solving problem number 4, so it can be seen on the stage where teachers had the highest difficulty.

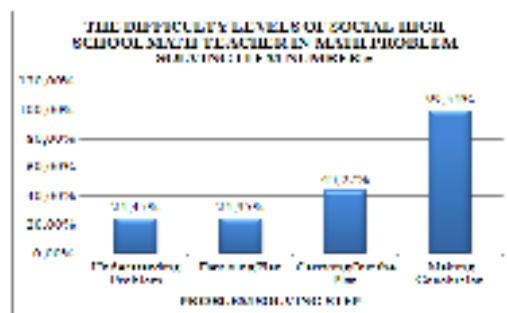


Figure 7. The Difficulty Levels of Social High School Mathematics Teacher in Mathematical Problem Solving Item Number 5

Based on Figure 7 that as many as 99.54% of teachers had difficulty to interpret the results or make conclusion. The next difficulty level is at the third stage as many as 43.27% of teachers had difficulty in carrying out the plan. Furthermore, many as 24.47% of teachers had difficulty in understanding the problem and 24.35% of teachers had difficulty in devising a plan or strategy to solve the problems.

Based on the analysis, not only known the level of difficulty but also known the error of mathematics teachers in solving problems for each number. The locations of errors made by teachers in math problem solving are:

1. Errors in understanding the problem

Common mistakes made by teachers at this stage is that the teacher didn't write any data necessary nor required in writing of data due to any problem in understanding the sentence. In addition, common mistake made is the teacher didn't write the core issues to be searched.

2. Errors in devising plan

Common mistakes made in devising plan are the teachers did not write the requirements that must be completed to resolve the problem. The error in devising plan for competency standar calculate the operating results of algebraic roots of quadratic equation is the requirement that the length and width of the land is always positive. The errors in devising plan for competency standard calculates the chance of occurrence are at fault to write the formula used for chance events or opportunities combined two events. The error in devising plan for competency standard resolve an inequality in terms of the root is the root sign must be greater than or equal to zero. In addition, the error in devising plan for competency standard finish inequality is the root form error resolution strategy selection inequalities that form the root of both sides must be squared. The error in devising plan for competency standard resolve issues related to the linear program is teachers did not write constraint token \leq in the linear programming problems and errors in modeling sentence into math models. The error in devising plan for competency standard calculate measures of central tendency of the data groups in the form of tables or diagrams dominated median error in the formula, determine the mean errors, discern and calculate d (deviation) or median value with a deviation between the average count while with $u = 0, \pm 1, \pm 2, \dots$. Another mistake in this stage is the teacher did not use existing data in a matter of sentences that should be used for problem solving.

3. Errors in carrying out the plan

Mistakes made by teachers in carrying out the plan due to an error in the previous steps. The error in devising plan for competency standard resolve issues related to the linear program is the teacher did not to test the corner points to determine the greatest profit. The teacher just looking for the second intersection graphs and only the cut off is

(100.300) is used to find the maximum profit. Generally, the errors in this step are the calculation errors.

4. Errors in making conclusion

Errors this step because teachers did not make conclusions to answer the core of the problem nor teachers made mistake in interpreting the results obtained due to errors in the earlier stages of completion.

Factors that cause errors in solving math problem are (1) the teacher was unusual to encounter a specific problem because they did not familiar with the material, (2) the teacher forgot to certain materials, (3) teachers was useless in solving the problem, (4) psychological conditions burdened, and (5) the ability and physic condition.

Conclusion

From the results of this study concluded that the biggest difficulty level teachers in mathematics is problem solving is at the stage to interpret the results obtained as many as 89.38%. This stage includes the level of difficulty is very high category. The difficulty level of carrying out the plan belongs to medium category (60.03%). The level of difficulty of devising plan includes medium category (46.64%) and the level of difficulty in understanding the problem is low category (39.46%). The errors in mathematics problem solving were reading and comprehension errors, transformation errors, process skill errors, and encoding errors. Reading and comprehension errors were led by the failure of the teacher to write the requirement information. Transformation errors were led by the failure to formulate or strategy to solve math problems. Process skill errors were led by the transformation errors. Encoding errors were led the failure of the teacher to write the conclusion. In conclusion, the factors leading to teachers' difficulties in Sleman and Yogyakarta were psychology condition, teacher readiness, and teachers' misconception of mathematics.

REFERENCES

- Adams, D. & Hamm, M., *Demystify Math, Science, and Technology: Creativity, Innovation, and Problem-Solving*, Plymouth, UK: Library Materials, ANSI / NISO, 2010.
- Djemari Mardapi & Nuchron, *Analisis Kelemahan Kompetensi Siswa pada Tingkat Kabupaten/Kota Berdasarkan Hasil UN Rendah Wilayah 3 Kalimantan, Sulawesi, dan NTB*. Yogyakarta: Kerjasama PEP Pascasarjana Universitas Negeri Yogyakarta dengan Puspendik Balitbang Kemendikbud, 2011.
- Djohar, Guru, *Pendidikan & Pembinaannya*, Yogyakarta: Grafika Indah, 2006.

- Ingvarson, L., et. al., Investigation of Effective Mathematics Teaching and Learning in Australian Secondary Schools, Canberra, Australia: ACER (Australian Council for Educational Research), 2004.
- Killen, R., Effective Teaching Strategies (Lessons from Research and Practice), South Melbourne, Victoria: Cengage Learning, 2009.
- Moh. Uzer Usman, Menjadi Guru Profesional, Bandung: Remaja Rosdakarya, 2006.
- Polya, G., How to Solve It: A New Aspect of Mathematical Method, 2nd ed., Princeton, New Jersey: Princeton University Press, 1973.
- Polya, G., Mathematical Discovery: on Understanding, Learning, and Teaching Problem Solving, Combined Edition, Toronto, Canada: John Wiley & Sons, 1981.
- Samsul Hadi & Agus Hadi Widiyantoro, Analisis Kelemahan Kompetensi Siswa pada Tingkat Kabupaten/Kota Berdasarkan Hasil UN Rendah Wilayah 1 Jawa. Yogyakarta: Kerjasama PEP Pascasarjana Universitas Negeri Yogyakarta dengan Puspendik Balitbang Kemendikbud, 2011.
- Suharsimi Arikunto, Prosedur Penelitian (Suatu Pendekatan Praktik). Jakarta: Rineka Cipta, 2003.
- Sunarto & Heri Retnowati, Analisis Kelemahan Kompetensi Siswa pada Tingkat Kabupaten/Kota Berdasarkan Hasil UN Rendah Wilayah 2 Sumatra. Yogyakarta: Kerjasama PEP Pascasarjana Universitas Negeri Yogyakarta dengan Puspendik Balitbang Kemendikbud, 2011.
- White, A. L., "Active in mathematics classrooms finding out why children make mistakes and then doing something to help them," in The Journal of Primary Association for Mathematics, University of Western Sydney, Square One, Vol 15, No. 4, December 2005. p. 15-19, 2005.

The Development and its Impact of Java 2 Micro Edition Based Media for Mobile Chemistry Encyclopedia To Senior High School Student Learning

¹Amallia Nugrahaeni and ²Jaslin Ikhsan
^{1,2}The Department of Chemistry Education

The Faculty of Mathematics and Science
Yogyakarta State University
Karang Malang, Yogyakarta, 55281 INDONESIA
¹amallianugrahaeni@yahoo.com and ²jaslinikhsan@gmail.com

Abstract

The development Information and Communication Technology (ICT) has changed the way of working and learning as well as their implementation in many fields. Education is dramatically influenced by the development digital technology such as *e-learning* and mobile learning. In Indonesia, the development is also supported by large numbers of mobile apparatus that are easily accessed by mobile students. This research developed *Java 2 Micro Edition* based mobile chemistry encyclopedia called "*Chemistclopedia*" on the topic of Hydrocarbon and Petroleum for Senior High School students and it is trial.

The product of "*Chemistclopedia*" was tested to 50 students of Senior High School at Sedayu, Bantul, Yogyakarta. The data were collected to gain information on the effect of the use of the "*Chemistclopedia*" on the students learning interested, motivation, independence, flexibility, attitude, and style. The data was collected using a set of questionnaire and analyzed using statistics of descriptive.

From the analysis, it can be concluded that students learning were affected significantly by the implementation of *J2ME* based chemistry media of "*Chemistclopedia*"

The development of this study produced a mobile application called "*Chemistclopedia*" that can be played by mobile phone. The learning topic in the application was Petroleum and Hydrocarbons, topic for senior high school students. Assessment from students showed that the media is very good in quality with the percentage of ideality of 85.25%. The results indicated that "*Chemistclopedia*" was eligible to be used as learning media for enrichment purposes on the topic of Petroleum and Hydrocarbons for senior high school students. Students' responses to the application was very positive, in which 84.78% of 50 students stated that the use of the application "*Chemistclopedia*" can affect and change students' learning interest, motivation, independence, flexibility, attitudes, and styles.

Keywords: *mobile learning, J2ME, "Chemistclopedia"*

1. Introduction

a) Background

The rapid development of the information in the era of globalization provides an opportunity to improve the quality of education based Information and Communication Technology (ICT), which has advantages in terms of flexibility, efficient, and effective. Electronic learning and mobile learning media are used as learning resources that are now widely used by chemistry teachers to help learning process in the classroom of chemistry. Unfortunately, chemistry learning media especially the mobile ones have yet been developed. Given the large number of students who already have a mobile phone, then the media is essential for the development of media-based learning materials.

M-Learning (mobile learning) is an learning approach that involves mobile devices such as mobile phones, PDA, laptop and tablet PC, where learners can access materials, referrals and applications related to the subject without being limited by space and time, wherever and whenever they located. Mobile learning is a learning model that utilizes information and communication technology. On the concept of learning, mobile learning brings the benefits of the availability of teaching materials which can be accessed at any time, and the visualization of interesting material. This will increase the focus on learning materials, making learning becomes pervasive, and can encourage learners' motivation to lifelong learning. In addition, compared to conventional learning, m-learning allows for more opportunities for direct collaboration and informal interaction among learners. Mobile learning models are not only used during the development process, but it is used continuously to maintain the continuity of the adoption of e-learning programs.

Mobile learning is supported by mobile technologies and “involves mobility of human subjects who can be physically far from each other and far from formal educational physical spaces, such as classrooms, training/ graduation/ qualification rooms or workplaces. Mobile learning can be used as handheld devices to provide access to learning content and information resources. Therefore, mobile learning builds on the advantages that users can carry with them for learning on-the-move.

Mobile learning for learning on the move is not just about the delivery method, but is also about learning across contexts. The aspect of learning contexts in a more thought provoking definition of mobile learning for the needs of instructional designers include not just the mobility of the technology and learner, but also the mobility of the learning, which allows for the context of the learning to be highly individualized.

Traditional instructional methods can no longer be exclusively utilized and new thinking must be incorporated in order for learning goals to be achieved. Mobile devices offer potential for multimedia learning experiences. However models for using and developing

learning with mobile applications are somewhat lacking. As such, educators and instructional designers face a challenge of determining how to use these powerful new tools in learning applications. In order to effectively support “Chemisclopedia”, instructional principles must be identified that are both pedagogically sound and address the mobile learning context in terms of usability.

Java 2 Micro Edition is a Java platform that developed on mobile devices. Java 2 Micro Edition has been defined in two configurations, Configuration is a java library and a minimum in accordance with the capabilities of a mobile device to be able to run the application optimally namely CLDC (Connected Limited Device Configuration) for small devices with memory and processing power are small. While the CDC (Connected Device Configuration) to a larger device.

Traditional instructional methods can no longer be exclusively utilized and new thinking must be incorporated in order for learning goals to be achieved. Mobile devices offer potential for multimedia learning experiences. However models for using and developing learning with mobile applications are somewhat lacking. As such, educators and instructional designers face a challenge of determining how to use these powerful new tools in learning applications. In order to effectively support “Chemisclopedia”, instructional principles must be identified that are both pedagogically sound and address the mobile learning context in terms of usability

While instructional strategies focus on the transmission of knowledge and describes the general components of a set of procedures used to enable student mastery of learning outcomes, cognitive learning strategies are methods used to help learners link new information to prior knowledge. To that end, cognitive strategies focus on how the learner processes knowledge and provides a structure for learning through mental strategies, and these are used to facilitate the activation and retention of prior knowledge by integrating active and exploratory learning techniques into the design process[1].

This study develops the media that can be played using mobile apparatus. The media is called “Chemisclopedia”. “Chemisclopedia” is Chemistry encyclopedia that support Chemistry mobile learning. It is known that encyclopedia is one of the types of books that raise a description of the phenomena of the various branches of knowledge or a particular field of science in separate articles. Generally materials in the encyclopedia are arranged alphabetically or by category brief and concise.

b) Formulation of Problem

Can J2ME used as an application to develop good mobile Chemistry Learning Media, and how are the responses of senior high school students at Sedayu, Bantul to the media?

c) Method

The mobile application “*Chemistclopedia*” was developed using J2ME. The development was in line with Borg and Gall Research and Development. The mobile application was reviewed by experts of Chemistry content and multimedia as well as peer reviewer before it was implemented to students. The mobile application was then field-tested to 50 Senior High School students at Sedayu, Bantul Yogyakarta. Data of students’ responses were collected using a set of Lykert Questionnaire by which students’s responses to the effects of the use of media to students’ learning interest, motivation, independence, flexibility, attitude, and style were questioned. Collected data were then analyzed per indicator.

The data of students’ responses collected by a number of questions in the questionnaire was analyzed using descriptive analysis. Students’s responses toward “*Chemistclopedia*” were represented by the 5 choices in the form of Lykert scale from Strongly Agree (SA), Agree (A), Doubt (D), Disagree (D), to Strongly disagree (SD) for 20 statements of learning interest, motivation, independence, flexibility, attitude, and styles of students in learning Petroleum and Hydrocarbon. For data analysis purpose, Scoring for the choices of positive statements were 5, 4, 3, 2, and 1 for SA, A, D, DA, and SD respectively. However the score was in inversion for negative statements.

2. Discussion

Student responses to mobile applications of “*Chemistclopedia*” on Petroleum and Hydrocarbons for Senior high School were investigated. The responses of students were about the effect of “*Chemistclopedia*” toward learning interest, motivation, independence, flexibility, attitudes, and styles. The responses of students were summarized in Table 1 and described in quantitative percentage.

Component of Responses	Responses					
	Very Agree	%	Agree	%	Indah	%
Interest	13	40	14	48	3	6
Motivation	22	44	21	70	4	11
Independence	30	58	21	72	0	0
Flexibility	23	60	27	74	0	0
Attitude	22	44	28	46	0	0
Style	21	75	21	78	2	5
Total	153	61	157	77	9	3

the materials. The simpler form materials which present the information both textually and visually can be interesting for learners[3].

❖ **The Responses of Students's were about the Effect of "Chemisclopedia" Toward Learning Motivation**

Students strongly agreed that "*Chemisclopedia*" can influence their learning motivation. This is because the use of instructional media in the form of mobile learning can motivate students to learn. Motivation to learn is the psychological factor that is non-intellectual. It is a typical role that fosters passion, feeling happy and eager to learn. Students who have a strong motivation will have plenty of energy to perform learning activities.

Student learning outcomes are essentially behavioral changes after having obtained the students' learning activities. Incidence of motivation in students with a learning model for mobile learning because the learning model emphasizes the process of delivering the material to the non-verbal students with the intention that students can master optimally subject matter without having to be in class. Motivation to learn arises because the mobile application "*Chemisclopedia*" provides opportunity for students to develop in accordance with their ability where the students are also given the freedom of flexibility and accessibility in accordance with the conditions of the students.

Mobile application "*Chemisclopedia*" is one of the learning strategies associated with how to convey the subject matter so that students can learn. It is selected systematically in order to achieve optimal learning outcomes. In effect, learning strategy is one of the skills that must be mastered in teaching by teachers. The application of mobile learning strategy with mobile application "*Chemisclopedia*" is expected to be a huge influence in improving student learning outcomes.

❖ **The Responses of Students's were about the Effect of "Chemisclopedia" Toward Learning Independence**

Students Data analysis shows that students strongly agreed with the effect of mobile applications "*Chemisclopedia*" on Petroleum and Hydrocarbons to independence of learning. This can be caused flexibility of the media as a source of learning that can be accessed at any time anywhere and can be learnt repeatedly. The use of mobile media "*Chemisclopedia*" which provides huge opportunity of learning independence in learning process can give students opportunity to digest the teaching material in depth with a little help of the teacher[4]. Function of mobile applications "*Chemisclopedia*" was a supplement that was options, complement, or replacement.

The use of mobile applications "*Chemistclopedia*" can improve student learning independence for mobile applications "*Chemistclopedia*" designed more effectively, efficiently, and compared with the optimal application designed for e-learning. The media was developed with Java 2 Micro Edition (J2ME), which is a platform for developing Java applications on mobile devices. The devices that compatible for playing the media are widely available and cheap so the availability of the mobile phone player amongst the students were not problems. The learning independence can arise because the mobile application "*Chemistclopedia*" provides the opportunity for students to develop in accordance with his ability where the students are also given the freedom of flexibility and accessibility in accordance with the conditions of the students.

❖ **The Responses of Students's were about the Effect of "*Chemisclopedia*" Toward Learning Flexibility**

The use of instructional media in the form of mobile learning can improve student learning flexibility. This research also shows that students strongly agreed with the statement that the use of mobile applications "*Chemistclopedia*" on Petroleum and Hydrocarbons can influence students' flexibility of learning.

Mobile application "*Chemistclopedia*" can run on mobile devices based on Java operating system. This application can be used without having to use internet access, so that the application can still run when the condition where mobile phone service provider is not getting a signal or internet connection. This application can be fairly cheap solution in an effort to foster "Learning Culture" in students.

Based on students' responses to assessment mobile applications "*Chemistclopedia*" indicates that mobile applications "*Chemistclopedia*" meets the level of reusability, reliable, and compatibility. This is because the mobile application "*Chemistclopedia*" has the ease of use, the application can be used easily without any difficulty, the application can run well, and not easy to hang. The use of the application is not experiencing congestion and can be run on a variety of mobile phones with Java operating system. Since the variety of the phone that are compatible with this application, the students will be easily to play media in flexible gadget. Therefore the media will facilitate huigh student participation[5].

❖ **The Responses of Students's were about the Effect of "*Chemisclopedia*" Toward Learning Attitude**

Students agreed with the statement that *Chemistclopedia* can enhance learning attitudes. Learning attitudes include many things such as intelligence, interests, talents, motivation, health and so on. Learning attitude will be formed with good learning activities and fun[6]. Mobile application "*Chemistclopedia*" is one of the learning media to be

expected to form good learning attitude to students. Mobile application "*Chemistclopedia*" is a medium for students to learn more deeply about Petroleum and Hydrocarbon materials without being limited by space and time.

Mobile application "*Chemistclopedia*" an instructional media created to use leisure time and to be more efficient and optimal learning. Learning attitudes will change positively towards the use of mobile applications "*Chemistclopedia*" very efficient and effective to adapt to conditions so that the adjustment of student learning behaviors with media-based learning. Communication and design is necessary to give students a deeper knowledge and particularly to allow them to test their skills acquisition.

❖ **The Responses of Students's were about the Effect of "*Chemisclopedia*"Toward LearningStyles**

Students strongly agreed with the use of mobile applications "*Chemistclopedia*" on Petroleum and Hydrocarbons that can affect learning styles Based on students' responses to assessment mobile application "*Chemistclopedia*" shows that students strongly agreed with the use of mobile applications "*Chemistclopedia*" on learning the material chemistry and petroleum hydrocarbons from the aspect of increasing learning styles. This is because the use of instructional media in the form of mobile learning can influence student learning styles.

Mobile application "*Chemistclopedia*" requires students to be able to visually learn this media. With visual media, students will better understand the material in greater depth. With a visual learning media, students can learn in a crowded place even without being disturbed, so that the use of instructional media in the form of mobile learning can affect or change the student's learning style.

Learners learn in different ways and have different strategies, which differ in terms of efficiency and effectiveness. Matching and mismatching learning style to instructional materials can have significant effects on learning outcomes [7].Recognize when a particular experience may not meet their learning style be able to take steps to change their learning style to suit the situation, i.e. to consciously move out of their comfort zone and develop competence in a variety of learning styles, thus being able to update their learning skills as they progress through the curriculum.

3. Conclusion

Based on the results of the study, data analysis and discussion in this study, it can be concluded that J2ME application can be used to develop the mobile Chemistry encyclopedia called "*Chemisclopedia*". The media was good in quality based on students' responses. So

the mobile media can be used as an independent source of learning. Students also strongly agreed that the use of mobile applications "*Chemistclopedia*" on learning material of Petroleum and Hydrocarbons can affect students learning interest, motivation, independence, flexibility, attitudes, and styles.

4. References

- [1] Driscoll, Marcy P. (2005). *Psychology of Learning for Instruction*. Pearson.
- [2] S.Nasution.2010. *Teknologi Pendidikan*. Jakarta:Bumi aksara.
- [3] Rose, C. (1998). *Accelerated Learning*, New York: Bantam Dell Publishing Group.
- [4] Ana Lidia Franzoni. 2009. *Student Learning Styles Adaptation Method Based on Teaching Strategies and Electronic Media*. Instituto Tecnológico Autónomo de México, Computer Science Department.
- [5] Lindquist, D., Denning, T., Kelly, M., Malani, R., Griswold, W. G. & Simon, B. (2007), 'Exploring the Potential of Mobile Phones for Active Learning in the Classroom', *Proceedings of the 38th SIGCSE Technical Symposium on Computer Science Education*, Vol. 39, No. 1, 384-388.
- [6] Litchfield, Dyson, Lawrence and Zmijewska. 2007. *Faculty of Information Technology University of Technology Sydney. Proceedings ascilite Singapore*.
- [7] Chris D. Smith and Helen E. Whiteley. *Learners, Learning Styles and Learning Media Department of Psychology, University of Central Lancashire, Preston, PR1 2HE, UK The New Educational Benefits of ICT in Higher Education*

The Development of Character-Based Mobile Game “*Robochem*” on the Reaction Rate Topic and the Response of Grade 11th Students to the Game

¹SeptiRiyanningsih and ²JaslinIkhsan

^{1,2}The Department of Chemistry Education, The Faculty of Mathematics and Sciences
Yogyakarta State University, Karangmalang, Yogyakarta 55281 INDONESIA

¹septiryan@gmail.com and ²jaslinikhsan@gmail.com

Abstract

This research developed chemistry learning media of mobile game called *Robochem*. The media is on Reaction Rate, learning materials for 11th grade of Senior High School students. Character education was integrated into the media by integrating it into learning materials, through playing manual, and via inserted wise quotes. The character based mobile game “*Robochem*” is a Java game, which can be played using Android mobile phone. The objectives of this research were to determine the quality of the game based students’ assessment and to study the responses of students toward the game. The development of the game was in line with Borg and Gall Educational Research and Development model, including four main steps, which are preliminary research, planning, development, and field test. The mobile game product was played and responded by 24 students at grade 11th of SMA N 1 Yogyakarta to collect two different sets of data; data on quality of the game and on students’ response to the integration of character education value. Data analysis showed that the quality of the game “*Robochem*” was good (B) whose average score was 74.1, whereas students’ responses to the integration of character education value was 73.7% which mean the character education was well integrated into “*Robochem*”. According to the results, this game is a well qualified media which is eligible for enrichment materials which may enhance learning independence and flexibility.

Keywords: mobile game; learning media; character education, reaction rate

Introduction

The development of technology improves rapidly. Communication and information technology affects significantly lifestyle of Indonesian. About 20% of Indonesian uses mobile phone [1]. Therefore, game-based mobile learning becomes increasingly popular. Most mobile devices provide supports for multimedia content, location awareness, augmented reality and connectivity [2]. The features of most mobile phones support its use as a medium of learning. Learning media that is compatible with most mobile devices such as Smartphone, feature phones, pocket PCs, personal digital assistants (PDA), tablet PCs and portable media players are mobile games. The mobile game can be used as potential enrichment materials for students.

Based on Ref. [3] the use of mobile games can help additionally to integrate outside informal learning with more formal classroom activities. Moreover, the use of mobile game can provide the nature of students' learning practices using games. So many games were developed to support learning process which is often called educational game.

Character is the most important aspect to be developed through education. Gray [4] said that teaching character should be as important as teaching academics. Society will continue to be in a state of chaos until character is taught in schools. In this way, education can be used as a way to significantly decrease moral decay from overtaking society. Even Education Law of 2003 instructs to establish education not only to produce smart people, but also to educate the next generation to be a good personality or character person. Therefore, integrating character education into a mobile game can be acceptable and useful for flexible and independent learning media.

The topic discussed in this game was reaction rate combining concepts and calculation. Illustration or animation is often needed to understand the concepts of reaction rate. The calculation on reaction rate often becomes materials on final assessment, and therefore students should have more practices. The practices can be easier and more enjoyable by use of attractive media.

This research aims to develop a chemistry learning media and also to know the responses of students towards the integration of character education value in the mobile game. So the media do not only contain chemistry learning materials but also character education value. The mobile game is an educational game played on Android mobile phone and called *Robochem*. *Robochem* was taken from the word robot and chemistry.

Research Methodology

The development method was in line with Borg and Gall Educational Research and Development model, including four main steps, which are preliminary research, planning, development, and field test. Preliminary research consists of determination of topics, looking for references like book, journal, article that encourages this research, documentation, and application. Planning was conducted by designing research methods, designing the game using Corel Draw, Photoshop and other programs that support to design background, button and other pictures, preparation and validation materials to be loaded in the game, and collecting some needed apparatus. Development step was to produce dummy of media which was reviewed by experts of multimedia and Chemistry contents, as well as peers. The product dummy was then reviewed and evaluated by Chemistry teachers. The product is made by using *Eclipse Indigo* program. After all revisions due to the reviews and evaluation of the dummy, the product was finally field-tested to students and analyzed using a set Lykert scale questionnaire for the quality of the product [5]. From the calculation, the score obtained then converted into score conversion table. Table of score conversion can be seen in Table 1.

Table 1. Score Conversion

No.	Range of score	Quality category
1.	$\bar{X}_i + 1,8 DS_i < X$	Very Good (A)
2.	$\bar{X}_i + 0,6 DS_i < X \leq \bar{X}_i + 1,8 DS_i$	Good (B)
3.	$\bar{X}_i - 0,6 DS_i < X \leq \bar{X}_i + 0,6 DS_i$	Average (C)
4.	$\bar{X}_i - 1,8 DS_i < X \leq \bar{X}_i - 0,6 DS_i$	Poor (D)
5.	$X \leq \bar{X}_i - 1,8 DS_i$	Very Poor (E)

\bar{X}_i = ideal mean score

DS_i = ideal deviation standard

X = actual score

Whereas data of students' responses were collected using a questionnaire about the integration of character education value. The integration of character education value was

through three ways that are learning material, game playing rule and wise quotes. The character education value were religious, honesty, discipline, independent, hard work, creative, curiosity, achievement, caring, and patriotism. The sample was 24 students at grade 11th of SMA N 1 Yogyakarta. Collected data were analyzed using descriptive statistic.

Result and Discussion

The result of this research is a mobile game product and data of students' response to the integration of character education value. Mobile game "*Robochem*" product has six main navigations that are rules, competences, materials, enrichments, start, and profile. Mobile game "*Robochem*" has two types of game. The first game is to test "how good is your chemistry?" and the second is to test "how good is your character?" The first game is on Enrichments Menu and the second game is on Start Menu. The display of Navigation, Start Menu, and Enrichments Menu can be seen in Figure 1, Figure 2, and the Figure 3 respectively.

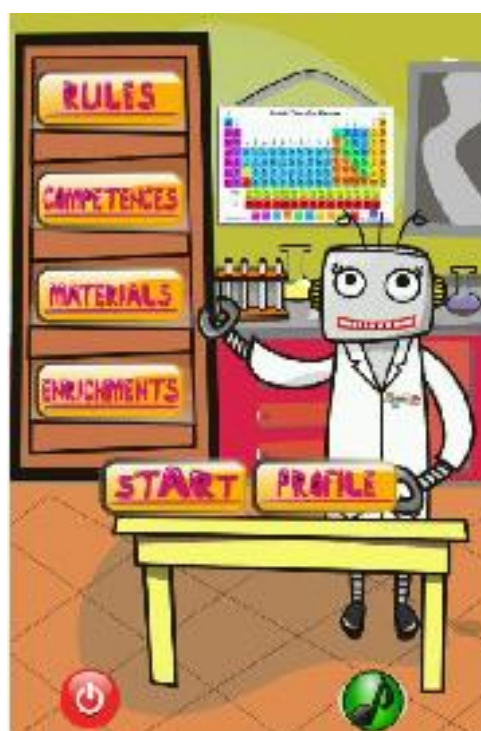


Figure 1. First Navigation

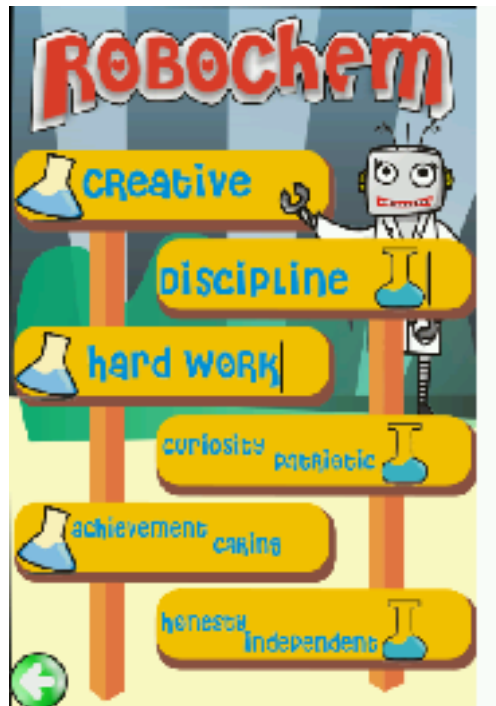


Figure 2. Start Menu



Figure 3. Enrichment Menu

a. Assessment of product quality mobile games "*Robochem*" by students

Mobile game "*Robochem*" was reviewed by 24 students at grade 11th of SMA N 1 Yogyakarta. Students were given a set of questionnaire about the indicators and criteria of quality that has to be chosen. The indicators in the questionnaire were 19 from 4 aspects of assessments; Linguistics, Usage, Display, Audio-Visual, and Software Engineering. Data analysis shows the quality of "*Robochem*" had an average score of 74.1 or ideal percentage of 78%. From the calculation, the average score converted into score conversion to five grade scale. The result of conversion can be seen in the table 2.

	Range of score	Quality category
1	$79.8 < X$	Very Good (A)
2	$64.6 < X \leq 79.8$	Good (B)
3	$49.4 < X \leq 64.6$	Average (C)
4	$34.2 < X \leq 49.4$	Poor (D)
5	$X \leq 34.2$	Very Poor (E)

The average score X is in the range of score ($64.6 < X \leq 79.8$), meaning that the quality of *Robochem* was categorized into good quality (B).

Besides assessing the quality of the product, the students were also given questions about their interest in the mobile game. The questions used to determine the opinion of students towards new learning media. Percentage interest in the students towards the mobile game is equal to 91.7%. From these results it can be said that students interested in new learning media and suggested such media be developed.

Based on the data of quality assessment, the mobile game "*Robochem*" is good on quality and valuable to be used as chemistry learning media. The interest of students towards this media was high. It told us that *Robochem* is qualified media which are eligible for enrichment materials which may enhance learning independence and flexibility. In some extent, similar mobile game on Language and other important disciplines should be developed [6].

b. Students' response to the integration of character education values

The mobile game "*Robochem*" contains character education values, which are integrated via three ways; those are in learning material, in game playing rule, and by wise quotes.

Students' responses include 38 indicators of ten values of character education. The character values are religious, honesty, discipline, independence, hard work, creative, curiosity, achievement, care, and patriotism. Character education has been demonstrated to

be associated with academic motivation and aspirations, academic achievement, prosocial behavior, bonding to school, prosocial and democratic values, conflict-resolution skills, moral reasoning maturity, responsibility, respect, self-efficacy, self-control, self-esteem, social skills, and trust in and respect for teachers [7]. Instrument used only provide two answers that is 'Yes' or 'No'. When in the game includes the integration of character education value so students can select an answer 'Yes' but if there is no integration of character education value then the student can choose the answers 'No'. Each student answer of 'Yes' on positive statement worth 1 and 'No' worth 0. While on negative statement, the option Yes was 0 and the choice of No was 1. If the results of the research show the percentage above 50%, so the integration of character education value can be categorized good.

Data analysis shows that the integration of character education value was 73.7%. This means that character education values were well integrated into the mobile game "Robochem". In more detail, the percentage of students' responses toward each value of character education is shown by Figure 4.

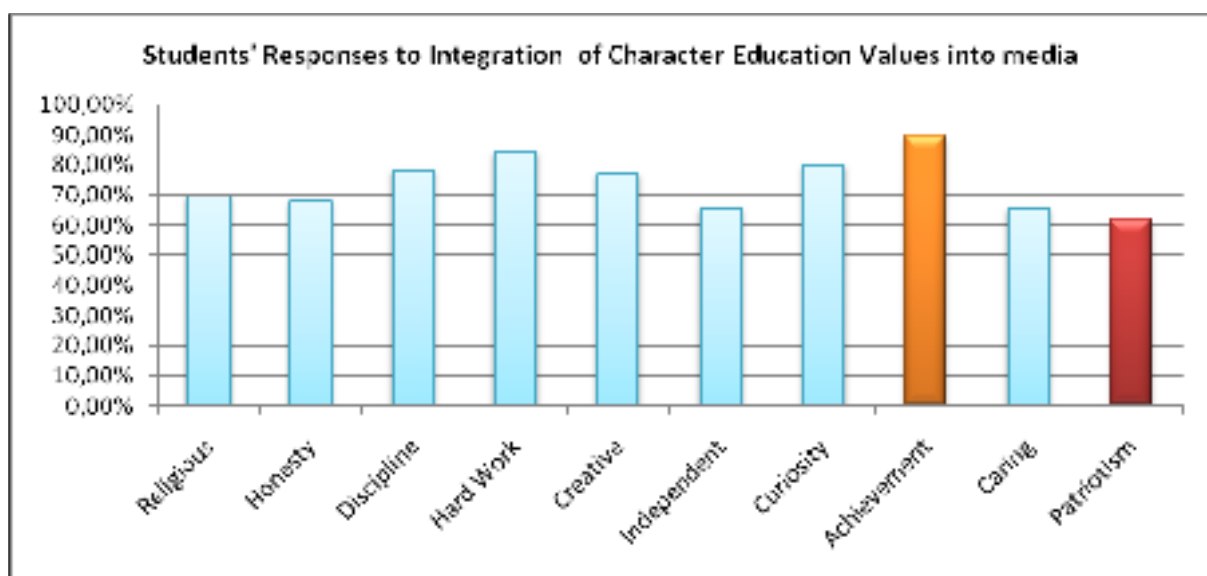


Figure 4. Integration Character Education Value Graph

From the graph it can be seen that the highest percentage for the integration of education character value is Achievement with a value of 89.5%. That's because the mobile game "Robochem" give high appreciation to the achievements of students. Students who are able to complete the mission well will get not only achievement score, but also wise quotes that can motivate students to continue to the next level game. Then when the students working on the mission, but not good, mobile game also provides appreciation by giving motivational quotes that encourage student not to despair to solve the mission of game. The

lowest percentage of responses was on Patriotism with a value of 61.5%. One of the reasons positioning Patriotism on lowest percentage was about language used in this game which was bilingual. According to some students, the overall game should be in Indonesian since it is the product of Indonesia. Students also stated that the mobile game did not improve students' sense of patriotism because of the lack of wise quotes included in the game. Besides that, the example of pride chemical industry in Indonesia which was included in the media was very limited. Based on the comment from some students, the patriotism was not be able to created only by such kind of media because the patriotism was built in very long comprehensive process. According to Aynur [8] Good character is not formed automatically; it is developed over time through a sustained process of teaching, example, learning and practice. It is developed through character education. The intentional teaching of good character is particularly important in today's society since our youth face many opportunities and dangers unknown to earlier generations.

Conclusion

This research was a development research measuring the quality of the product and students' responses to the integration of character education values into the mobile game "Robochem". The mobile game was good in quality based on students review, and was eligible to be used as a source of independent and flexible learning on the topic of Reaction Rate. The responses of students were very positive, meaning that the character education values were well-integrated in the mobile game "Robochem".

References

- [1] PPPPTK, *Mathematics Mobile Learning*, <http://Mml.P4tkmatematika.com/>, 2007.
- [2] D.Parsons, K. Petrova and H.Ryu, "Designing mobile games for engagement and learning", in *The 7th International Conference on Information Technology and Applications*, 2011.
- [3] Daniel Spikoland Marcelo Milrad, "Physical activities and playful learning using mobile games", *World Scientific Publishing Company &Asia-Pacific Society for Computers in Education*, vol. 3, No. 3, 2008, pp 275–295.
- [4] Gray, Tiffany, "Character Education in Schools", *ESSAI*: Vol. 7, 2009, Article 21.
- [5] Eko Putro Widoyoko, *Evaluasi Program Pembelajaran*, Yogyakarta: Pusat Pelajar. 2011.

- [6] Christopher L. Holden and Julie M. Sykes, "Leveraging mobile games for place based language learning" United States: University of New Mexico.
- [7] Berkowitz, Marvin and Bier, Melinda, C., "Research based character education", *The Annals of the American Academy of Political and Social Science*, 591, 72-85, 2004.
- [8] Aynur Pala, "The need for character education", *International Journal Of Social Sciences And Humanity Studies*, vol 3, No 2, 2011

The Quality of Content and Performance of Modules Evolution

Ucu Rahayu¹, Mestika Sekarwinahyu²

Faculty of Teacher Training and Education, Universitas Terbuka

¹urahayu@ut.ac.id, ²tika@ut.ac.id,

Abstract

Printed material is a main material for the students of Universitas Terbuka. Therefore, printed material should be designed as self-instruction and self-content material. Modules Evolution is a part of Evolution and Systematic Living Organisms printed material. This printed material was published in 2007 for Biology Education students.

This paper will discuss about the evaluation of the content and performance of the modules of Evolution. This study aims to determine the quality of the substance, including the validity and recent concepts, readability material, as well as the relevance of the material evolution on the modules with its curriculum in high schools.

Respondents of the study are the experts of evolution material, lecturer from other university, biology teacher of high school, and the students who took the course Evolution and Systematic Living Organisms.

As the results, according to the expert, the concept that existed at the printed material of Evolution was quite sophisticated. However, its presentation was too many so it was hard to digest; there are misconceptions and lack of sample; the depth of discussion among the topics is uneven. This is consistent with the opinion expressed the lecturers that the concepts is fairly advance. However, there are some concepts that have not been valid and erroneous. Meanwhile, according to the biology teacher, there was material which is relevant and not relevant to the high school biology curriculum.

According to the students, if given the score range 1 to 4, the average score of recentness of the concept for each module was 3,137; the relevancy of the example of its concept to the development of science is 2,744; Completeness and language is 2,844.

Keywords: evaluation, printed material, evolution, expert.

Introduction

In the context of distance education especially Universitas Terbuka, printed material or often called module has a strategic role as a main learning material. Modules can be studied independently or be self-instructional. Module not only contains the materials, but also clearly explains instructional objectives, examples, exercises, summaries, formative tests, and feedback. Module contains the complete material (self-contained). Student can study independently through following learning activities suggested by the developers of learning materials. Therefore, UT module is designed as a comprehensive, complete, and valid substance and able to motivate student to do independently study.

Assessment or evaluation is one of the necessary steps in the process of developing distance learning materials, especially when it has used about 3-4 years. Assessment can be done by reviewing the contents of the learning materials and its learning design.

Module Evolution and Systematic Living Organisms, is one of book used by students of Biology Education. This book consists of 9 modules, which 4 modules explain evolution, and 5 modules explain systematic Living Organisms. This book was developed in 2005/2006 and written by 6 writers. The first edition was launched on January 2007.

Since published in 2007, it has not evaluated yet the readability, the recentness and the use of the book of Evolution and Systematic. Is the book easy to read and to understand by the students? Does the content of the book follow the newest knowledge of evolution? Do its contents have met the teacher need for teaching evolution at school?

The aims of the research are to determine recentness concepts contained in the material, readability and relevance to biological materials in schools, as well as the enrichment of the evolution material necessary for the biology teachers.

At distance education, learning materials is a strategic and vital media for learning. By learning materials, students can independently study, interact, reflect and do self-evaluation. Students can also communicate virtually with the writer of the module as their lecturer.

UT's printed materials, therefore, not only contain materials but also learning strategy, evaluation, and other item instructional (Yunus and Pannen 2004).

UT's printed material contains materials which students must study based on the goal of learning that stated in the Outline Learning Program. The printed material is *self-learning or self-contained learning* that means the students need to study to achieve learning goal. Therefore, the printed material is designed for students to do self-study.

The learning materials are developed by a team of developer, which are the writer, reviewer, instructional designer, media expert and course material. The writer is responsible

for the content. He writes based on the outline of learning program. The reviewer is responsible for the validity content also. He supposed to review the scripts that already written by the writers. The instructional designer is responsible for the learning design. He has to ensure that the learning material developed consist of several modules (depends on the number of sks). He has to ensure that each module consist of some components such as general and specific competency goal, introduction, content (topic and sub topic), exercise, resume, formative test, feedback, reference, and glossary. Instructional designer is also responsible to ensure module has its characteristics (*self-instruction*) to facilitate students study independently with a minimum facilitator.

UT's Printed material has a function as lecturer, so that it has to evaluate after three or four years use and revise each 5 to 7 years.

There are two kinds of evaluation of product at distance education, which are evaluation of learning materials and evaluation of alumni. Summative evaluation of learning materials is done to obtain the effect of learning materials to students' achievement. The result of this evaluation is used for making decision, to continue or to change the learning materials (Suparman, 1992). The quality of learning needs to be evaluated to accommodate interactive process between student and the newest information, through both aligning substances and package (Subagjo, 1999).

Since the book Evolution and Systematic Living Organisms has published in 2007, Study Program of Biology had never evaluated this book. To anticipate the development of information and knowledge, and the needs of students as well, it is needed to evaluate this learning material. As Suparman (2004) said that formative evaluation is a must in the development of instructional product. Formative evaluation is a process to provide and use information in making a decision in order to improve the quality of learning materials. Formative evaluation can be done by reviewing the content or the package by content experts, students, or alumni.

Abedon in Suparman (2004) said that the quality of learning materials after evaluation is higher than before. Related to this problem, the profession of the students must be considered. Therefore, evaluation of learning material is a crucial step in the development and enhances the quality of learning materials.

The topic and subtopics that are explained in the book of Evolution and Systematics Living Organisms are the history of evolution theory for living organisms, mechanism of evolution, evolution of Prokaryote, Protista, a plant, fungi, and animal. On the other hand, the topic related evolution that are taught at third class senior high school theory of Evolution, comparison Darwin Theory and other evolution theory, Variation as determination for evolution, the Effect of distribution geography to evolution, Fossils as evidence for Evolution, Comparative anatomy, embryology, biochemistry, domestication,

and the remaining organs as evidence for evolution., Natural selection, Mutagen, Hardy-Weinberg Law, Speciation, Human Evolution, a new trend on the theory of evolution.

Evaluative Research is research method that is used in this study. Its procedure are preparation phase including the development of the questionnaire, readability test for questionnaires, questionnaire revisions, and production of the questionnaire, second phase is data collection by sending questionnaires to the respondents, and finally, the data analyzing phase.

The subject of this research is the book of Evolution and Systematics Living Organisms (PEBI4204), and the respondents of this research are content experts, lecturers, students of Biology Education, and teachers of Biology at Senior High School.

Variable of this reserach are 1) quality of the content, 2) the recentness of the concepts, 3) readability of the concepts of evolution, 4) Relation concepts between of the modules and topics at school.

Questionnaire is used to collect the data. Instruments developed are based on the book of Evolution and Systematics and Living Organisms, Syllabi for Biology Senior High School, and Evaluative Format.

To get the quality of learning materials, data was analyzed by descriptive analyses.

Result and Discussion

The result of research was divided by 4 categories, which are 1) evaluation of the content quality from content experts, 2) evaluation of the content quality from the lecturers, 3) teacher comments on the relation of materials and curriculum of senior high school, and 4) readability of the content from the students.

1. Comment of the content experts on the quality of modules

Module 1 (History of Theory Evolution)

1. Lack of theory Synthesis and modern Evolution
2. Content too wide but not depth
3. More memorizing of the concepts
4. The recentness on the content is enough, but hard to understand
5. Explanation of the concept and theory is not perfect.
6. Quite systematics.
7. Illustration too small and unclear.

8. Picture, example and non-example are relevant to the context.
9. Reading tool helps students to understand the contents but not eye-catching.
10. Less original reference.

Module 2 (Mechanism of Evolution)

1. There are misconception
2. No competency statements.
3. Quite recentness, but poor example of species from East Asia.
4. Material is not standard as other institution
5. Concepts and theory is not perfect.
6. The materials is hard to understand and can cause misconception
7. Illustration, example and non-example available does not help student to understand the material
8. Illustration and examples relevant to materials.
9. Illustration, examples and non-examples is unclear and not attractive.
10. Reading tool helps students to understand
11. Less original reference.
12. Answer key TF 1.10 and TF2.3-4 wrong
13. Need more explanation about the kingdom of organisms.
14. Process and mechanism of speciation lack of explanation.

Module 3 (Evolution of Prokaryote, Protista and Plant)

1. Misconception in interpreting adaptation, adaptive, adaptable and fitness.
2. The recentness of the content is enough but genetic evolution needs more explanation.
3. Contents are too wide but not depth.
4. Illustration and example are relevant to the materials.
5. Reading tool helps students to understand the contents but not eye-catching.
6. Less original reference.

Module 4 (Evolution of Fungi and Animal)

1. It is found misconception in classification of animal and fungi.
2. Too many memorizing materials.
3. Material is less up to date.
4. The content is not standard compare to other institution.
5. Content is too wide but not depth.

6. Need more elaboration.
7. Illustration and example are relevant to the materials but not help students to understand materials.
8. Materials is not attractive
9. Reading tool helps students to understand the contents but not eye-catching.
10. Less original reference.

Comments of the lecturer on the quality of the content

Module 1 (History of Theory Evolution)

1. It is found misconception.
2. The wideness of the contents appropriate for students.
3. The contents appropriate to the students competencies.
4. The content is up to date.
5. The content is standard for the course.
6. The depth of the content appropriates for students.
7. A part of concept and theory was explained holistically except for religion view need addition.
8. This module is a coherent presentation of the material, systematic and logical so easy to understand, not confusing, and does not easily lead to misinterpretation
9. Illustration, examples and non-examples can help students to understand the contents.
10. Reading tool helps students to understand, but it is not attractive
11. Answer key is clear.
12. Reference is complete and clear.

General Comments:

1. Pictur need to be added to make more attractive.
2. Guidance of study for students need to be revised
3. Glossary need to be added.

Module 2 (Mechanism of Evolution)

1. There is no misconception
2. The wideness of the contents appropriate for students.
3. The contents appropriate to the students competencies.
4. The content is up to date.
5. The content is standard for the course
6. The depth of the content appropriates for students.
7. Concept and theory was explained holistically

8. The content has a coherent, systematic and logical presentation so it is easy to understand.
9. Illustration, examples and non-examples can help students to understand the contents.
10. Reading tool helps students to understand, but it is not attractive
11. Answer key is clear.
12. Reference is complete and clear.

General comments:

- a. Page 2.6 words is met should be changed with can be used.
- b. population size must very big should be changed with ...is big.
- c. Need more additional examples for theory Hardy weinberg, consanguinity and autogamy, mutation, and sexual recombination
- d. Population rather constant should be changed with relatively constant.
- e. Guidance of study for students need to be revised

Module 3 (Evolution of Prokaryote, Protista and Plant)

1. There is no misconception
2. The wideness of the contents appropriate for students.
3. The contents appropriate to the students competencies.
4. The content is up to date.
5. The content is standard for the course
6. The depth of the content appropriates for students.
7. concept and theory was explained holistically
8. The content has a coherent, systematic and logical presentation so it is easy to understand.
9. Illustration, examples and non-examples can help students to understand the contents.
10. Reading tool helps students to understand, but it is not attractive
11. Answer key is clear.
12. Reference is complete and clear.
13. General comments :
 - a. This module should be put as the second module.
 - b. Glossary is needed.
 - c. The content is enough, but it is not need explanation about 5 kingdoms.
 - d. Guidance of study for students needs to be revised

Module 4 (Evolution of Fungi and Animal)

1. There is no misconception
2. The wideness of the contents appropriate for students.
3. The contents appropriate to the students competencies.
4. The content is up to date.
5. The content is standard for the course
6. The depth of the content appropriates for students.
7. concept and theory was explained holistically

8. The content has a coherent, systematic and logical presentation so it is easy to understand.
9. Illustration, examples and non-examples can help students to understand the contents, but not attractive.
10. Reading tool helps students to understand, but it is not attractive

Comments :

- a. Mapping is needed to add.

Teacher comments on the relevancy of the content of the book with the content at school

Module 1 (History of Theory Evolution)

1. The content is relevant to the content at curricula of school except about religion
2. Competency is relevance.
3. The examples are enough help teachers to teach their students.
4. Picture/diagram/table can be used by teachers to teach these topics.
5. Content is up to date for teachers.
6. Design of module is hard to understand, it need mind mapping.
7. Enrichment needed to be add:
 - a. Idea on delivery methods for evolution
 - b. Attractive learning to deliver evolution
 - c. MUI comments of evolution
 - d. Fossils evolution of human or other creature need to be added.
 - e. How to make replication of fossils.

Module 2 (Mechanism of Evolution)

1. The content is relevant to the content at curricula of school except about religion
2. Competency is relevance.
3. The examples are enough help teachers to teach their students.
4. Picture/diagram/table can be used by teachers to teach these topics.
5. Content is up to date for teachers.
6. Design of module is hard to understand need to add mind mapping.
7. The content is complete.

Comments of students

Module 1(History of Evolution

NO.	explanatory	score
	Completeness of module and language	
1	Description of the content	3
2	General competency	3.5
3	Specific competency	3.5
4	The use of module.	3
5	Characteristic language is used	2.5
6	Variation of paragraph	2.5
7	Term is used	2.5
8	Explanation acronym, and symbol	2
9	Attractive and relevant illustration to enhance understanding	2
10	Lay-out and setting	3
11	Exercise and feedback.	3
12	Resume	2
13	Key answer	3
14	Glossary	3.5

NO.	explanatory	score
15	Reference	3.5
16	Typo	2.5
	average	2.8
	Recentness of the concepts	
17	Explanation of evolution	3
18	Explanation of evolution based on experts and religion	3.5
19	Lamarck theory	3
20	Darwin theory	3.5
21	Evidence of evolution	3.5
22	Evolution view based on religion and Science.	3
	average	3.25
	Appropriateness examples and science	
23	Examples are appropriate	2
24	Fitness examples and content.	2.5
25	The content is up to date	2.5
26	Relevancy examples and non-examples	3
27	Fitness examples and science	2.5
	average	2.5

Comments

Content is really helpful teachers to understand evolution.

Module 2 (Mechanism of Evolution)

NO.	Explanatory	score
	Completeness of module and language	
1	Description of the content	3
2	General competency	3.5
3	Specific competency	3.5
4	The use of module.	2.5
5	Characteristic language is used	2.5
6	Variation of paragraph	2.5
7	Term is used	2,5
8	Explanation acronym, and symbol	2
9	Attractive and relevant illustration to enhance understanding	2
10	Lay-out and setting	2
11	Exercise and feedback.	3
12	Resume	2.5
13	Key answer	3
14	Glossary	3
15	Reference	3.5
16	Typo	3
	Average	2.75
	Recentness of the concepts	
17	Explanation of genetics population	3
18	Explanation of Microevolution	3
19	Explanation of genetic Variation	3
20	Explanation of natural selection and adaptation	3
21	Speciation	3
22	New structure of evolution	3

NO.	Explanatory	score
	average	3
	Appropriateness examples and science	2
24	Examples are appropriate	2.5
25	Fitness examples and content.	2.5
26	The content is up to date	2.5
27	Relevancy examples and non-examples	2.5
28	Fitness examples and science	2.4

Comments

Picture should be made more attractive.

Module 3 (Evolution of Prokaryote, Protista and Plant)

a.

No.	explanatory	score
	Completeness of module and language	
1	Description of the content	2.5
2	General competency	2.5
3	Specific competency	3
4	The use of module.	3
5	Characteristic language is used	3
6	Variation of paragraph	3
7	Term is used	2.5
8	Explanation acronym, and symbol	2
9	Attractive and relevant illustration to enhance understanding	2
10	Lay-out and setting	2.5
11	Exercise and feedback.	3
12	Resume	3

No.	explanatory	score
13	Key answer	3
14	Glossary	3
15	Reference	3.5
16	Typo	3
	average	3
	Recentness of the concepts	
17	Evolution of Prokaryote	3.5
18	Phylogeny of Prokaryote	3
19	Protista (Eukaryote)	3.5
20	Plant evolution	3.5
21	The original evolution of Vascular plant	3.5
22	Evolution of vascular plant	3
	average	3.33
	Appropriateness examples and science	
21	Examples are appropriate	3
22	Fitness examples and content.	3
23	The content is up to date	2.5
24	Relevancy examples and non-examples	2.5
25	Fitness examples and science	2.5
	average	2.7

Comments:

1. Add resume for each explanation.
Illustration or picture for Evolution of Prokaryote is needed to add.

Module 4 (Evolution of Fungi and Animal)

NO.	explanatory	score
	Description of the content	
1	General competency	2,5
2	Specific competency	3
3	The use of module.	3
4	Characteristic language is used	3
5	Variation of paragraph	3
6	Term is used	3
7	Explanation acronym, and symbol	3
8	Attractive and relevant illustration to enhance understanding	2,5
9	Lay-out and setting	3
10	Exercise and feedback.	2,5
11	Resume	2,5
12	Key answer	2,5
13	Glossary	3
14	Reference	3,5
15	Typo	3,5
16	Description of the content	3
	average	2,9
	Recentness of the concepts	
17	The origin of Fungi	2,5
18	Phylogenetic relation between Fungi and animal	3,5
19	The origin of animals.	3
20	Evolution of Invertebrate	3

NO.	explanatory	score
	average	3
	Appropriateness examples and science	
21	Examples are appropriate	3
22	Fitness examples and content.	3
23	The content is up to date	3
24	Relevancy examples and non-examples	2
25	Fitness examples and science	3
	average	2,8

Comments:

Illustration for evolution of fungi needs to be added.

Discussion

1. *Content*

1. The content is too wide, but it is not depth, so it is hard to understand (based on experts, lecturer, and teachers)
2. There are misconception in module 2, 3 and 4.
3. Contents in module 3 and 4 are not relevant to the curricula of school.

2. *Recentness*

The content in module 1, 2, 3, and 4 are up to date (based on comments of lecturer and teacher), but only module 1, 2, and 3 are up to date based on experts.

3. *Austrasia, examples, non-examples*

Based on experts, illustration, examples and non-examples is relevant but it cannot help reader to understand. However, based on lecturer it helps reader but it is not attractive. Based on students, it is relevant, help them to understand and can be used for teaching.

Based on experts and lecturer, reader tools help to understand the modules but it is not attractive.

Based on expert comments, the content is less appropriate to the competency; however, based on lecturer and teachers, the content is appropriate to the competency.

Instructional design of the module

Based on teacher and expert comments, not all presentation of module is systematic. It does not help them to understand module. So, teachers suggest adding mind mapping concept. However, the lecturers said it is systematic, logic.

4. Reference

There is a different view from experts and lecturer on the reference used in the modules. Experts comment that reference is not appropriate; on the other hand lecturer comment is one.

The average score of students to evaluate the recentness of the content is 3.14, the appropriateness examples to the sciences is 2.74, and completeness of module and language is 2.84.

Conclusion

This research concludes that:

1. The module has to be revised related to
 - a. Synthesis and modern evolution
 - b. The process of organism evolution, genetic variation, classification of kingdom
 - c. Misconception in module 1, 2, 3, and 4.
2. It needs to add real example for module 2 Dan 3
3. It needs adding how to deliver evolution at class, to be more attractive
4. It needs to consider teacher competency
5. It needs to improve an attractive reader tools

REFERENCES

- G. Henny Riandari. (2007). Model Silabus dan Rencana Pelaksanaan Pembelajaran (RPP) Sains Biologi 3B untuk Kelas XII SMA dan MA Semester 2 Program Ilmu Pengetahuan Alam, Solo: PT Tiga Serangkai Pustaka Mandiri.
- Limbong, A, dkk. (2002). *Langkah Praktis Evaluasi Bahan Ajar Jarak Jauh*, PPAI, Universitas Terbuka
- Subagjo. (1999). *Pelembagaan Upaya Pengendalian Mutu Akademik di Perguruan Tinggi*. Dalam Pannen, P. Editor. (1999). *Cakrawala Pendidikan*. Jakarta: Universitas Terbuka.

Suparman, A., Aminudin, Z. (2004). *Pendidikan Jarak Jauh Teori dan Praktek*. Jakarta: Pusat Penerbitan Universitas Terbuka

Universitas Terbuka. (2011). *Katalog UT 2011*. Jakarta: Universitas Terbuka

Yunus, M. Pannen, P. (2004). *Pengembangan Bahan Ajar Pendidikan Tinggi Jarak Jauh*. Pendidikan Tinggi Jarak jauh. Jakarta: Universitas Terbuka

THE EFFECT OF IMPLEMENTATION OF J2ME-BASED MOBILE ENCYCLOPEDIA “*CHEMISTCLOPEDIA*” AS INDEPENDENT CHEMISTRY LEARNING MEDIA FOR SENIOR HIGH SCHOOL STUDENTS

Melita Rachma¹ and Jaslin Ikhsan²

^{1,2}The Department of Chemistry Education, the Faculty of Mathematics and Sciences
Yogyakarta State University
Karangmalang, Yogyakarta 55281 Indonesia

¹melita.rachma@ymail.com and ²jaslinikhsan@gmail.com

ABSTRACT

The improvement of Information Communication Technology (ICT) affects the development of learning media, including chemistry learning media. Mobile chemistry media have not been much developed yet unlike the increase of the use of mobile phone in Indonesia. This research aims to measure the effect of the use of Chemistry encyclopedia called Chemistclopedia application to high school students chemistry learning. The Chemistclopedia application is on the topic of chemical elements, and was field-tested to 30 high school students at SMAN 1 Sedayu, Bantul, Yogyakarta. The data about student's learning interest, attitude, motivation, independence, flexibility and style were collected using a set of questionnaire and analyzed using descriptive statistic. This study shows that 87.60% of the students strongly agreed (SA) with the use of *Chemistclopedia* application because it can affect students' learning interest, learning motivation, learning independence, learning flexibility, learning attitude and learning styles of Chemistry.

Keywords: java 2 micro edition (J2ME), chemistry, learning media, Chemistclopedia, mobile application.

INTRODUCTION

Backgrounds

The advancement of technology nowadays results in rapid development of learning media, including chemistry media. Learning media on chemistry lesson based on java application and played mobile phone is not much available. In fact, almost all students in secondary high-school have mobile phone that can be used as an potential apparatus for chemistry learning called mobile learning. Mobile learning has been described as having the potential to “reach people who live in remote locations where there are no schools, teachers, or libraries” [1]. In chemistry learning itself many terms in chemistry are not easily memorized and learned by students. Many printed out chemistry encyclopedia have been developed but they are usually thick and not easy to carry.

Therefore chemical encyclopedia called *Chemistclopedia* from which senior high-school students can learn anytime and anywhere should be developed.

This research will study students' responses on the implementation of *Chemist-clopedia* on chemistry learning, measured from their opinion about the changes of learning interest, motivation, independence, flexibility, attitude and styles in Chemistry.

Formulations of Problem

What is the effect of the use of *Chemistclopedia* application to high school students' Chemistry learning based on students' opinion?

DISCUSSION

In this study, 30 students were requested to response toward the use of *Chemistclopedia* in their chemistry learning activities.

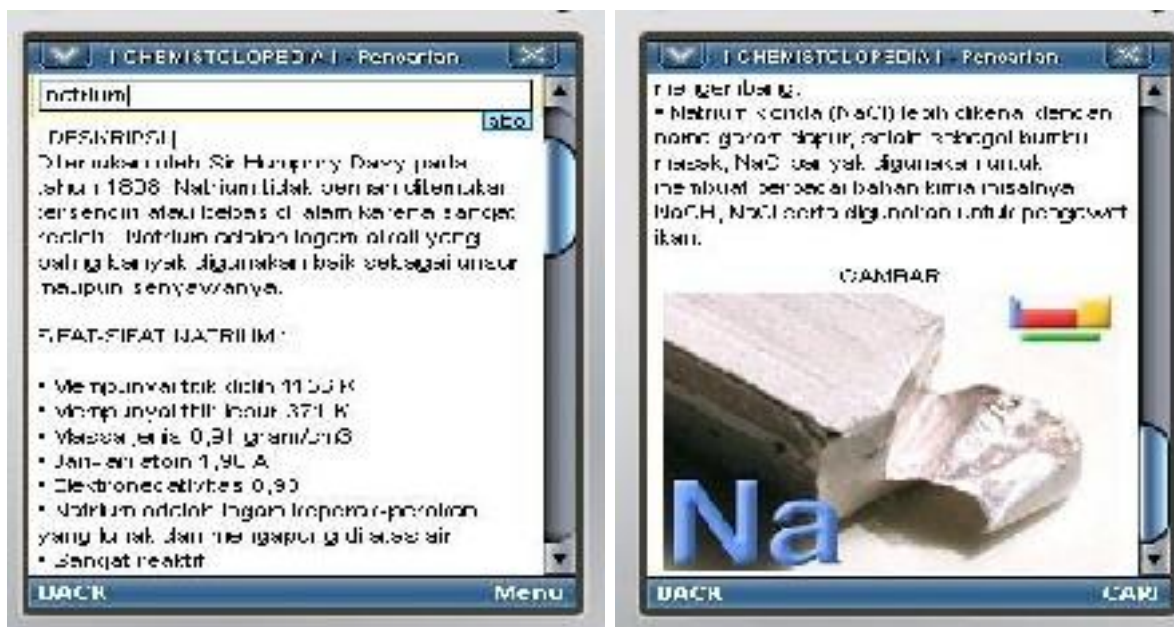


Figure 1. Chemistclopedia Application

The instrument for data collection about students' responses is Lykert scale consisting of 6 indicators: learning interest, motivation, independence, flexibility, attitudes and styles. Each of these indicators consists of some criteria represented by statements for which students have to response based on their own honest feeling. Provided choices of the answer are categorized into strongly agree (SA), agree (A), doubtful (D), disagree (DA) and strongly disagree (SDA). In data analysis, each category are marked by the score of 5 for SA, 4 for A, 3 for D, 2 for DA, and 1 for SDA [2]. Collected quantitative data of students' responses were reconverted into qualitative category of responses by using the equation listed in Table 1.

Table1.Data Analysis of Students’ responses

No	Scorerange	Category
1	$\bar{x} > \bar{x}_i + 1.8 SB_i$	Strongly Agree(SA)
2	$\bar{x}_i + 0.6 SB_i < \bar{x} \leq \bar{x}_i + 1.8 SB_i$	Agree(A)
3	$\bar{x}_i - 0.6 SB_i < \bar{x} \leq \bar{x}_i + 0.6 SB_i$	Doubtful(D)
4	$\bar{x}_i - 1.8 SB_i < \bar{x} \leq \bar{x}_i - 0.6 SB_i$	Disagree (DA)
5	$\bar{x} \leq \bar{x}_i - 1.8 SB_i$	Strongly Disagree(SDA)

Where \bar{x} is mean score and SB is standard deviation. \bar{x}_i is ideal mean score calculated by using equation (1) and SB_i is ideal standard deviation calculated by equation (2).

$$\bar{x}_i = \frac{1}{2} (\text{highest score} + \text{lowest score}) \dots\dots\dots (1)$$

$$M_i = \left(\frac{1}{2}\right) \left(\frac{1}{4}\right) (\text{highest score} - \text{lowest score}) \dots\dots\dots (2)$$

The value of highest score is the number of criteria in respective indicator multiplied by 5 (highest score), whereas the value of lowest score is those multiplied by 1 (lowest score).

The standard value of the category was different for each indicator depending on the number of statements, which was 12.6 for 3 statements and 16.8 for 4 statements as listed in Table 2.

Table 2. The category of students' responses

Indicator	Number of Statements	Mean Score (\bar{X})	Highest Score	Ideals Percentage	Category
Learning interest	3	12.93	15	86.20%	SA ($\bar{X} > 12.6$)
Learning motivation	3	12.90	15	86.00%	SA ($\bar{X} > 12.6$)
Learning independence	4	17.97	20	89.85%	SA ($\bar{X} > 16.8$)
Learning flexibility	3	13.37	15	89.13%	SA ($\bar{X} > 12.6$)
Learning attitudes	4	16.81	20	84.15%	SA ($\bar{X} > 16.0$)
Learning styles	3	13.60	15	90.67%	SA ($\bar{X} > 12.6$)

Overall mean score of students' responses was 87.60, meaning that 87.60% of 30 students strongly agreed that the use of *Chemisclopedia* can affect students' learning interest, motivation, independence, flexibility, attitudes and styles toward chemistry.

From the analysis listed in Table 1, the percentage of students' responses ideality dealing with response category can be shown by Figure 2.

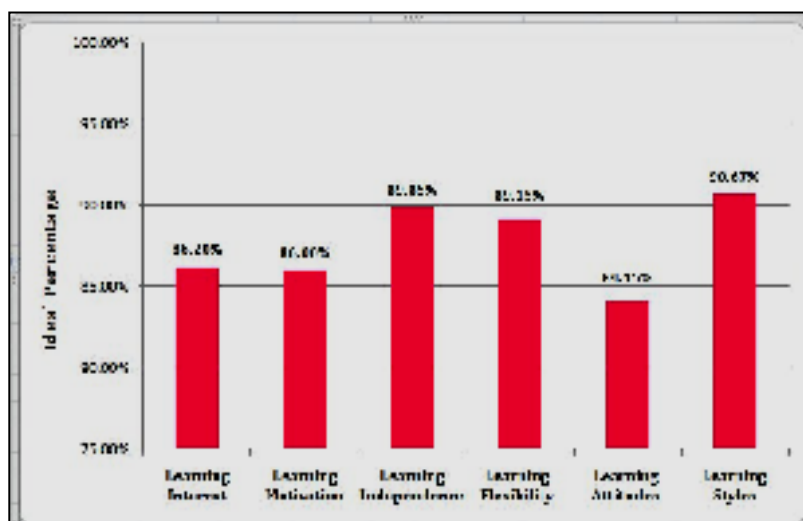


Figure 2. The percentage of Students' Response to each indicator

Effect of Chemisclopedia to students' Learning Interest

The existence of an attractive learning media among senior high-school students is affecting students' interest to the learning process [3], as shown on table 2 above that 86.20% of 30 students were states strongly agreed (SA) *Chemistclopedia* applications can affect their taste of love, a sense of interest and curiosity about chemistry subjects, so that it can increase their interest in chemistry learning.

Effect of Chemisclopedia to students' Learning Motivation

The use of learning media in the learning process can improve students' motivation to increase students' passion to participate in the learning activities and encourage students to achieve the higher learning outcomes . Based on the research [4], the learning media can influence students' learning motivation because learning media can encourage students to be more enthusiastic to learn. That is proved by students' response assessment data shows that 86.00% of 30 students were states strongly agreed (SA).

Effect of Chemisclopedia to students' Learning Independence

Learning media can be used as self-learning source, because by using media learning media student can still learn even without the help from the others and also can define their own learning time such as at their leisure time [5]. Those statements are match with students' response assessment data that shows that 86.00% of 30 students were states strongly agreed (SA) *Chemistclopedia* applications can affect their learning independence.

Effect of Chemisclopedia to students' Learning Flexibility

Based on students' response assessment data shows that 89.13% of 30 students were states strongly agreed (SA) *Chemistclopedia* applications can affect their flexibility in learning chemistry because *Chemistclopedia* applications can be an alternative learning source, so students still can study chemistry even they are not at class.

Effect of Chemisclopedia to students' Learning Attitudes

Learning media can affect students' learning attitude because the existence of learning media, especially *Chemistclopedia* that accessed via mobile phone, students become more creative using his mobile phone, not only used for social media and so on but also can be used for learning. That fact shown on table 2 above that 84.15% of 30 students were states strongly agreed (SA) *Chemistclopedia* applications can influence the change of their learning attitudes.

Effect of Chemisclopedia to students' Learning Styles

Mobile-based learning media can affect students' learning styles because the students can always learn more effectively and efficiently using the learning media, their free time are not wasted for things that are less important, but can be used for learning because of that 90.67% of 30 students strongly agreed (SA) that *Chemisclopedia* applications can influence the change of their learning styles.

CONCLUSION

Based on the discussion, it can be concluded that the use of *Chemisclopedia* application can affect students' learning interest, learning motivation, learning independence, learning flexibility, learning attitudes and learning styles, which were shown by the results of the study that 87.60% of 30 students answered strongly agreed (SA) that mobile application *Chemisclopedia* influences their Chemistry learning.

REFERENCES

- [1] M. Ally, "Mobile learning transforming the delivery of education and training", 2009, pp. 2-29).
- [2] Nana Syaodih Sukmadinat, "Metode penelitian pendidikan", Bandung: PT Remaja Rosdakarya, 2006.
- [3] Supardi, "Pengaruh media pembelajaran dan minat belajar terhadap hasil belajar fisika", Jakarta : FMIPA Universitas Indraprasta PGRI, 2010.
- [4] Rifka Fauzia, "Pengaruh intensitas, motivasi dan minat penggunaan komputer sebagai media pembelajaran terhadap hasil belajar siswa pada mata pelajaran teknologi informasi dan komunikasi (TIK) di SMP negeri 14 purworejo, Yogyakarta : FT UNY, 2013"
- [5] G. Martin, "Mobile learning as a chance to enhance education in developing countries – on the example of ghana", ceur-ws.org/Vol-955/doctoral/grimus.pdf, 2012.

THE ANALYSIS OF MATHEMATICS TEACHERS' DIFFICULTIES IN SOLVING MATHEMATICAL PROBLEMS

Fauzia Rahmawati¹, Dr. Heri Retnawati²

^{1,2} Mathematics Education Program, FMIPA, UNY
¹farahmawati92@gmail.com, ²retnawati.heriuny1@gmail.com

Abstract

This study aims to determine the difficulties often faced by high school mathematics teachers in science classes in Indonesia in solving mathematical problems, the factors that influence, and the solution expected by the teachers in Purworejo, Central Java and Yogyakarta, DIY. This research was a descriptive study with the mixed methods approach, namely quantitative and qualitative. The subjects were 277 mathematics teachers in Grade XII where the schools' graduation rates were below 80% in the National Examination in 2011 and several schools with graduation rates below 100% in National Exam in 2011. The researcher used documentation of the mathematics teachers' responses on the competency test held by Balitbang, Kemdikbud on 2011 and interviews. The instruments were five essay problems by Balitbang, Kemdikbud that was changed into scoring guidelines based on Polya's stage of solving problems by the researcher. The validity was the content validity based on expert judgment. The results showed that the order of difficulty of high school mathematics teachers in science classes in Indonesia in solving mathematical problems based on Polya's problem solving steps from the highest to the lowest are looking back, carrying out the plan, devising a plan, and understanding the problem. Factors that cause difficulties of teachers in Purworejo and Yogyakarta are motivation, teacher readiness, and teachers' concepts of mathematics. The solution that is expected by the teacher is training provision in the form of regular workshops covering teaching methods in the classroom, understanding concepts, and the use of technology in the learning process.

Keywords: difficulties, teacher, mathematics, problem solving

Introduction

Mathematics is a subject that has been given to students from kindergarten level up to high school. But the facts prove that mathematics achievement in Indonesia is still relatively low. Based on survey of TIMSS in 2007 in Ref. [5], Indonesia is still ranked 36th out of 49 countries. It indicates that the average of Indonesian students learning outcomes, especially in mathematics is still below the international average. Besides, in Ref [3] mathematics is one of the subjects become the main cause of the failure of SMA / MA / SMK students at the National Examination in 2011. According to BSNP's survey in Ref. [2] on the result of mathematics national examination in 2007-2011, it's known that the five lowest mathematics subject rank are three dimensional space with 62.27% achievement, the volume of solid of revolution with 65, 95% achievement, the derivative function with 67.08% achievement, quadratic equations and functions with 81.67% achievement, and composite function with of 84.28% achievement. It shows that the mathematics learning objectives planned by the teacher have not run properly so that students' understanding of mathematics is still low.

To create a good education, teachers must be able to master the competencies of teachers that have been set by the government, one of which is professional competence. In fact, based on the results of 100 cities research conducted by the Balitbang, Kemdikbud towards teachers in Indonesia where the schools' graduation rates were below 80% in the National Examination in 2011 and several schools with graduation rates below 100% in Ref. [6] aware that mathematics teachers' ability on mastering the learning material is still low. According to Goe in Ref. [1] teachers' knowledge of mathematics matter for student learning in mathematics at all school level, especially at secondary level. Polya in Ref. [4] said that one of the important tasks of mathematics teachers in learning activities is to help students to develop the students' ability in solving mathematical problems. So, a mathematics teacher must not only mastering and understanding of the material, but also have the ability to solve mathematical problems.

This study aims to determine the difficulties often faced by 277 high school science mathematics teachers in Indonesia where the schools' graduation rates were below 80% in the National Examination in 2011 and several schools with graduation rates below 100% in solving mathematical problems, as well as factors affecting, and the solution expected by the five teachers with graduation rates below 80% in the National Examination in 2011 and several schools with graduation rates below 100% in Purworejo, Central Java and Yogyakarta, DIY. By conducting this research, it is hope that researcher know where the difficulty of high school science mathematics teacher in Indonesia in solving mathematical problems based on four stages of problem solving that stated by Polya, i.e. understanding the problem, devise a plan, carry out the plan, and looking back lies. In addition, the study is

expected to know the factors that cause difficulties to the teacher and the solution expected by the teacher in Purworejo, Central Java and Yogyakarta, DIY.

Method of Research

This research was a descriptive study with the mixed method approach, namely quantitative and qualitative approaches. The selection of the quantitative approach in this research because the data will be processed in the form of numbers, namely high school science mathematics teacher responses when implementing competency test conducted by the Balitbang, Kemdikbud in 2011. To confirm the results obtained from the quantitative analysis, conducted interviews with high school science mathematics teachers in Purworejo, Central Java and Yogyakarta, DIY. The interview is used to describe the difficulty factors high school science mathematics teachers in solving mathematical problems. Therefore, a qualitative approach was also used in this study.

The research was conducted in Yogyakarta in October 2012 until February 2013. The documentation process of the data was performed in October 2012 at Post Graduate building, YSU. The interview process conducted on January 26, 2013 until February 11, 2013. The subjects were 277 mathematics teachers in XII grade where the schools' graduation rates were below 80% in the National Examination in 2011 and several schools with graduation rates below 100% in National Exam in 2011. The respondents of interview process are high school science mathematics teachers in SMA N 9 Purworejo, SMA Widya Kutoarjo, MAN Purworejo, SMA Muhammadiyah 2 Yogyakarta, and SMA Santa Maria Yogyakarta. Determination of research subjects for interviews based on the scores of teacher competence test that conducted by Balitbang Kemdikbud, the average value of the UN in 2011 for mathematics courses, school district, and school status.

The researcher used documentation of the mathematics teachers' responses on the competency test held by Balitbang, Kemdikbud on 2011. The problems in the test are consist of three dimensional space, the volume of solid of revolution, the derivative function of trigonometry, graph of function and composite function. From the responses, researcher made scoring guidelines based on Polya's stage of solving problems as bellow:

Table 1. Polya's Stage of Solving Problem

Problem Solving Steps	The Criteria of Implementing Stages
1. Understanding the problem	<ul style="list-style-type: none"> a. Write down the main problem b. Write down the necessary data c. Make a model of the problem in mathematical sentence in a sentence problem. d. Sketch the necessary problem
2. Devising a plan	<ul style="list-style-type: none"> a. Find the pattern to solve the problem b. Write down the formula based on the problem c. Write down the necessary condition to solve the problem
3. Carry out the plan	Do calculation based on the plan correctly
4. Looking Back	<ul style="list-style-type: none"> a. Checking steps and calculations that have been done. b. Interpret the results of the calculation as a conclusion c. Looking back at what the core issues are answered in the conclusion

Before the instrument used by researcher, the instrument was validated by two lectures of mathematics education program in YSU. To confirm the result of quantitative analysis, researcher did interview to three teachers in Purworejo, Central Java and Yogyakarta, DIY. The interview guide was consulted to the thesis supervisor.

Research Result and Discussion

Analysis of Quantitative Data

Based on the analysis of the results of the work of teachers in teacher competency tests conducted by the Research and Development Kemdikbud, obtained the following results:

1. Problem Number 1

Problem number 1 is a problem of differentiation of trigonometry function. The result showed that 26% teachers got difficulties in understanding the problem, 52% teachers got difficulties in devising a plan, 43% teachers got difficulties in carrying out the plan, and 95% teachers got difficulties in looking back. It meant the difficulty of teachers in the process of looking back was very high, difficulty in devising a plan and carry out the plan

are moderate and the difficulty in understanding the problem is low. The difficulty of devising a plan is higher than carry out the plan because due to difficulties in completing the assessment instrument, teachers were required to write down the formula used in the settlement of this issue, i.e. $f' = \frac{dy}{dx} = \frac{dy}{du} \cdot \frac{du}{dx} \cdot \frac{dx}{dx}$. But many teachers who do not write the formula so that it is concluded that the teachers had difficulty in design problem solving.

2. Problem Number 2

The second problem is a problem of the graph of the function. The result showed that 69% teachers got difficulties in understanding the problem, 72% teachers got difficulties in devising a plan, 84% teachers got difficulties in carrying out the plan, and 76% teachers got difficulties in looking back. The difficulties in carry out the plan is higher than looking back because teachers are required to be carried on the back just looking at the accuracy of determining the point of the graph and also fineness.

3. Problem Number 3

The third problem is the problem of composite function. The result showed that the difficulty of understanding the problem number 3 is 42%, 43% teachers got difficulty in devising a plan, 63% teachers got difficulty in carry out the plan, and 94% of teachers have difficulty in looking back.

4. Problem No. 4

The fourth problem is problem of volume of solid of revolution. The result showed that the difficulty of understanding the problem number 4 is 66%, 51% teachers got difficulty in devising a plan, 67% teachers got difficulty in carry out the plan, and 93% of teachers have difficulty in looking back. The difficulty in understanding the problem of teachers is higher than devising a plan due to the completion of the research instrument to question number 4; teachers are required to describe the graph function to determine in advance which areas will be screened and search volume. However, many teachers are able to locate the volume without sketching first.

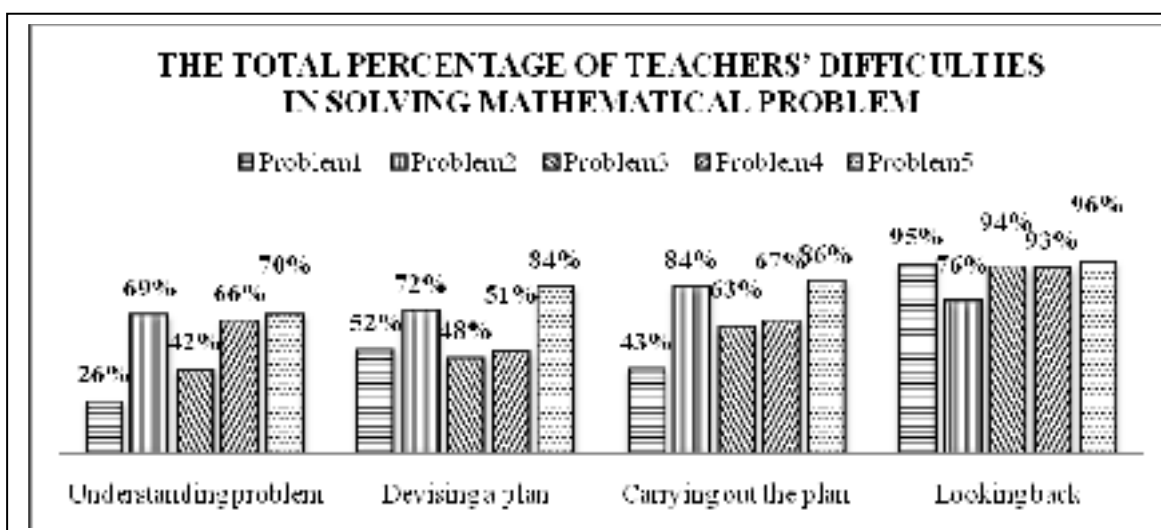


Figure 1. The Total Percentage of Teachers' Difficulties in Solving Mathematical Problem

5. Problem No. 5

Problem number 5 is problem of three dimensional spaces, especially finding the distance of a point to a plane. From the analysis results obtained, the difficulties experienced by teachers in solving problems classified as very high number five, which is the difficulty in understanding the problem reaching 70%, 84% teachers got difficulty in devising a plan, 86% teachers got difficulty in carrying out the plan, and the difficulties in the process of looking back to 96%.

In addition to analysis the whole numbers, researcher also analyze on the teachers' difficulties based on Polya's stage on problem solving. The result showed that the difficulty in understanding the problem reaching 55%, 61% teachers got difficulty in devising a plan, 69% teachers got difficulty in carrying out the plan, and the difficulties in the process of looking back to 91%. The comparison of the difficulty of each stage of the five numbers can be seen in Fig.1.

From the analysis above, can be concluded that the order of difficulty of high school science teachers in Indonesia in solving mathematical problems based on Polya' problem solving steps from the highest to the lowest are looking back, carry out the plan, device a plan, and understand the problem. The order of topics of difficulty of high school science mathematics teachers in Indonesia in solving mathematical problems are three dimensional space, graph of a function, volume of solid of revolution, composite function, and differentiation of trigonometric function.

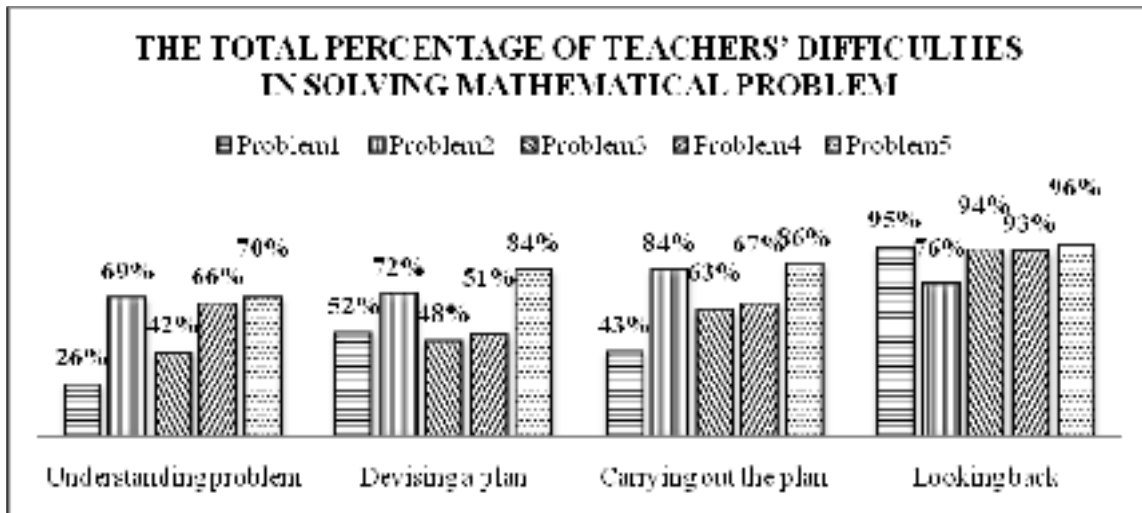


Figure 1. The Total Percentage of Teachers' Difficulties in Solving Mathematical Problem

Analysis of Qualitative Data

To confirm the results that have been obtained in the analysis of quantitative data, conducted interviews with high school mathematics teachers from three high school science in the Purworejo, Central Java and two high schools in the city of Yogyakarta.

The result showed that the difficulties of high school mathematics teachers' of natural science program in Purworejo, Central Java and Yogyakarta, DIY in solving mathematical problems are teachers lack the motivation to do the problems given by Balitbang Kemendikbud; teachers feel less prepared to test given by the Research and Development because it was felt a sudden; teachers forget about the basic concepts in the calculation as a derivative of and the value of a square root; teachers are less rigorous in working on; limited time work; test atmosphere less conducive; there is no preparation for working on stationery.

The solution is expected by high school science mathematics teacher in the Purworejo, Central Java and Yogyakarta, DIY to increase the professional competence is the workshop for high school mathematics teacher on a regular basis covering science teaching methods in the classroom, understanding concepts, and the use of IT.

Conclusion

The results showed that the order of difficulty of high school mathematics teachers in science classes in Indonesia in solving mathematical problems based on Polya' problem solving steps from the highest to the lowest are looking back, carrying out the plan, devising a plan, and understanding the problem. Factors that cause difficulties of teachers in Purworejo and Yogyakarta are motivation, teacher readiness, and teachers' concepts of

mathematics. The solution that is expected by the teacher is training provision in the form of regular workshops covering teaching methods in the classroom, understanding concepts, and the use of technology in the learning process.

References

- [1] ^[1]Goe, L. (2007). *The Link between Teacher Quality and Student Outcomes: A Research Synthesis*. Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved March 19, 2013 from <http://www.ncctq.org/publications/LinkBetweenTQandStudentOutcomes.pdf>
- [2] ^[2]Hasil UN Tahun 2011. Balitbang Kemendiknas Pusat Penilaian Pendidikan
- [3] ^[3]Kompas.(2011). *Pengganjal Lulus UN*. Retrieved April 1, 2012 from <http://edukasi.kompas.com/read/2011/05/21/03514256/Pengganjal.Lulus.UN>
- [4] ^[4]Polya, George.(1973). *How to Solve It Second Edition*. New Jersey: Princeton University Press.
- [5] ^[5]Puspendik.(2011). *Survei Internasional TIMSS*. Retrieved April 5, 2012 from <http://litbang.kemdikbud.go.id/detail.php?id=214>
- [6] ^[6]Samsul Hadi & Agus Widiyantoro.(2011). *Analisis Kelemahan Kompetensi Siswa pada Tingkat Kabupaten/Kota Berdasarkan HasilUN Rendah Wilayah 1: Jawa*. PEP Pasca Sarjana Bekerjasama dengan Puspendik Balitbang Kemendiknas

THE INTRODUCTION OF INDONESIAN CULTURE IN BAHASA INDONESIA CLASS FOR SPEAKERS OF OTHER LANGUAGES BY USING THE CULTURAL COMPONENTS AT ISI YOGYAKARTA

Prima Dona Hapsari

Institut Seni Indonesia Yogyakarta
hapsari_dn@yahoo.com

Abstract

Learning Bahasa Indonesia becomes a new trend for speakers of other languages. They need to learn it for having good communication skill and because of some purposes. The speakers of other languages who come to Indonesia for different purposes, then, also would like to learn and understand the Indonesian culture and its unique characteristics. Therefore, one of the important steps to introduce bahasa Indonesia and Indonesian culture is started from bahasa Indonesia class for speakers of other languages. This program is intended to help them have more understanding in both bahasa Indonesia and Indonesian culture. Moreover, this program is supposed to give answers for some questions and the learners' needs in the process of learning bahasa Indonesia and Indonesia culture.

The paper discussion focuses on the cultural components and the cross-cultural understanding in bahasa Indonesia class for speakers of other languages. Moreover, this paper also analyzes the common problems happened in the class and how they are solved in order to succeed the process of learning the language and culture. How to introduce and convey the cultural components in bahasa Indonesia class, and how to give the important values for the learners to have better understanding in knowing the Indonesian characteristics through the process of learning bahasa Indonesia and Indonesian culture are other questions which are discussed in this paper.

Keywords: cross-cultural understanding, cultural components, bahasa Indonesia, Indonesian culture

I. INTRODUCTION

Learning Bahasa Indonesia and Indonesian culture for speakers of other languages has been tremendously increasing nowadays. People from other countries come to Indonesia for different purposes. They need to learn it for having good communication skill and because of some purposes, such as to do a scientific research, learn Indonesia and its people, have a project in Indonesia, develop the relationship between their country and Indonesia, and many more. In spite of the fact that Bahasa Indonesia is being well accepted by them, it is the government and educators who can provide friendly facilities and environment for them. Therefore, by learning Bahasa Indonesia and Indonesian culture, they would become parts of our warm hospitality to speakers of other languages in Indonesia.

The speakers of other languages are supposed to have good adaptation to any different points of view, background, social life, language and culture, and so forth. In other words, they should learn the language and culture, know the society well, and adapt with anything related to the country they live in. Therefore, there is a great way to introduce Bahasa Indonesia and Indonesian culture through Bahasa Indonesia class. Bahasa Indonesia for speakers of other languages is intensively developed to answer all problems that may occur during the introducing process of learning Bahasa and culture.

The government has launched the program to help and facilitate learners from other countries in learning bahasa Indonesia as well as Indonesian culture. The program, named *Bahasa Indonesia Bagi Penutur Asing*, is supposed to actively support the successfully guidance to speakers of other languages who need better understanding and knowledge on Indonesia thoroughly.

The paper aims to discuss how to introduce and convey the cultural context in bahasa Indonesia class and how to give the important values for the learners to have better understanding in knowing the Indonesian characteristics through the process of learning bahasa Indonesia and Indonesian culture.

II. LITERATURE REVIEW

A. Culture and Language

Learning bahasa Indonesia in Bahasa Indonesia Class for Speakers of Other Languages (BIPA), has been introduced to meet their needs to any basic information through the language and culture. Below is the basic understanding on the language and culture.

There are some definitions of culture that have been proposed by experts and writers. According to Spradley and McCurdy [8], culture is defined as a system of symbols that allows

us to represent and communicate our experience. Meanwhile, Bates and Fratkin [1] say that culture is transmitted via our symbolic communication system that we call language. Symbols that we can perceive with our senses stand for something else and simplify the task of communication [8]. By symbols, people can communicate the variety of experiences to others. The language is a system of cultural knowledge used to generate and interpret speech. Moreover, language enables people to communicate what they would do, to organize their experiences into abstract categories, and to express thoughts never spoken before [1]. From the definitions above, cultural knowledge can also be discussed that it is not only transmitted through the language, but it is also produced by the language. People can communicate to others by the language to develop culture. In other words, knowing the language helps people to understand the culture better.

By knowing the definitions of culture and language, we can completely understand that both culture and language can be mutually connected and related. A language is a part of culture and a culture is a part of a language. However, culture becomes highly important in learning the language because it is tightly connected to each other.

Foreign people who are interested to learn new language and culture of others come to a new place or country, they will experience a cultural shock. This tendency might happen where the language, culture, customs, and beliefs are different to their own. It is a feeling of disorientation of someone who may experience when thrust into an unfamiliar cultural setting [1]. It happens when they are suddenly cut off from their customary practices and familiar ways of doing things which may cause stress and anxious. In addition, Peter [6] defines culture shock as a form of anxiety that results from the loss of commonly perceived and understood signs and symbols of social intercourse. When the learners experience culture shock, then there occur a number of defense mechanisms, such as repression, regression, isolation, and rejection. Having been failed of defense, they become disoriented, afraid of, and alienated from the things that they know and understand. Moreover, Brown [2] says that culture shock is one of the four successive stages of acculturation. The first stage is the period of excitement and euphoria over the newness of the surroundings. The second stage, culture shock emerges as individuals feel the intrusion of more and more cultural differences into their own images of self and security. The third is recovery in which culture stress comes up. It is some problems of acculturation which are solved while other problems continue for some time. And the fourth is acceptance of the new culture and self-confidence that has developed in the culture. Knowing that the stages of acculturation might be helpful for the teachers to completely understand about culture shock, then, they can motivate learners with some approaches to do how they should perform in the classroom and how they develop their culture awareness.

One other thing that is well accepted for those who experience culture shock is by having culture adaptation. It is needed to solve particular problem and as the source of unanticipated changes or new problems which may occur [1]. The learners can take advantages of whatever resources are available to them at a particular time for the following consequences. By adapting to new things which are different to their own, the learners are supposed to have commitments that have altered their negative judgment or mind setting into acceptance.

B. Teaching Culture and Language in Bahasa Indonesia Class

The teaching and learning process in *BIPA* class should be supported by teachers' accommodation, techniques, and methods in which they can actively support the learning process in the classroom. Teachers and students should get involved in this process that the successful learning and teaching can be achieved, especially when the teachers transfer knowledge to students who have different background and culture. This process is well accepted and a challenge since teaching is a part of education and there is a link between education and culture. The culture of a society determines the form and content of its educational processes. Through education the productivity of a nation's citizenry is improved, and by stimulating and developing intellect and creativity education can promote the development of culture [5]. Since culture is lived and experienced in a process of social progress and cultural continuity, the changes may occur. The changes are found in what people actually do and in what people think about their culture. Therefore, through education the teachers can take part in this process by introducing Indonesian culture without leaving a concept that foreign people who learn bahasa Indonesia have their own culture to be appreciated. The teacher should also have critical thinking and point of view that they are not different but they have their own perspectives, symbols, interpretations, values, and feelings of belonging to their country that might be shared to others to be understood.

Speakers of other languages who learn Bahasa Indonesia sometimes get difficulties in understanding Indonesian culture since they experience "culture shock". They do not know what Indonesian culture is and even the teachers are trying hard to define it. Bundhowi [3] says that culture cannot be taught, but what teachers are supposed to do is trying to build the Indonesian culture awareness. Everything related to Indonesia can be discussed thoroughly in and outside the class. However, the teachers can develop the syllabus and lesson plan in which the culture discussion is one of the important things for the learners. By designing the acceptable and applicable ones, the process of transferring information, that is bahasa Indonesia and Indonesian culture.

Learning the Indonesian culture is also learning the language. By learning Indonesian culture, the learners are invited to know and understand many expressions and language functions commonly found in daily conversation of Indonesian people have. It is not surprisingly noted that sometimes the learners are getting frustrated and have wrong interpretations when they know there are many different expressions and language functions to their own. Therefore, it is the teachers and the syllabus designers' job to design a very clear discussion about the culture and the language so that there will be good mutual relationships among the teachers, learners, and Indonesian people in cross cultural understanding.

BIPA program is supposed to assist the speakers of other languages in learning Indonesian culture through bahasa Indonesia because it has been used as a lingua franca, which becomes a means to describe, discuss, and think about the whole pictures of Indonesian culture. Therefore, bahasa Indonesia class for speakers of other languages will implicitly contribute to the learning of Indonesian culture and cross-cultural understanding since there are some cultural components that are connected directly to the learning of bahasa Indonesia.

Furthermore, Bundhowi [3] also states the teaching methods on cultural components introduced to speakers of other languages who learn Bahasa Indonesia. They are as follows:

1. Knowledge about Indonesia

The topics of Indonesia geographic, governmental system, Indonesian history, religion, and customs can be given either in the classroom or in the local seminar. The teachers and the curriculum designers can select and make priorities which topics should be discussed. By giving such topics, the learners are assumed to be more interested to know Indonesia much better. The teachers can develop many activities covering those topics so that the learning process is more fun and dynamic.

2. Cultural Notes

In the teaching syllabus, cultural notes are a part of the learning materials to be discussed. Once the teachers explain the language components, the cultural notes are given. Cultural notes can be taught in such a way from easy to more complicated ones. The teachers make cultural notes and are ready to explain them. The problems may occur when the learners find many differences which might be compared to their own culture. For example: the topic of Introduction. The cultural note is about the concepts of respecting older people and social partnership found in Javanese culture that those who are older or in term of respecting should be called by "Mas" and "Mbak"; "Pak" and "Bu".

3. Culture Discussion

This topic is relevant to learners whose Bahasa Indonesia has already been in advance level. The teaching-learning process does not focus to grammar understanding but focus to contextual learning. The teachers can select teaching materials which are suitable for their level of competence. Any sources from magazines, newspapers, news on TV, and any related topics such as visiting to interesting places in Indonesia, Indonesian food, and many more can be used for discussion. Therefore, they know that Bahasa Indonesia can be used in communicating process, such in talk-show, seminar, lecture, literature study, and many more. Furthermore, the discussion will point to comparing the learners' own culture and Indonesian culture.

4. Cultural Research

To comprehend the learners' language competence, the research on many aspects they want to discuss is suggested. Anything related to culture discussion is opened to facilitate the learners on comprehending the content of the language. The learners are invited to do a research in which their language skills and competence are directly used. The learning objectives of this research are comprehending verbal and non-verbal speech, conveying ideas in formal educational field, doing either library or experimental research, and presenting the paper in a scientific forum. By doing the research, the learners are expected to get what are not found and known before they do it. Furthermore, the learners' negative point of view, perceptions, and opinions about Indonesia before are positively changed.

Those cultural components are very important for the learning process of bahasa Indonesia and Indonesian culture in *BIPA* class. The teacher, then, uses them as the guidelines in designing materials to teach bahasa Indonesia and Indonesian culture in the class. Some considerations are taken to select which components are actively used and can support the introduction of Indonesian culture to speakers of other languages.

Burden and Byrd [4] state three basic teaching functions that can be applied in Bahasa Indonesia for speakers of other languages class. They are as follows:

1. Planning

Planning involves teachers' decisions about student needs, the most appropriate goals and objectives, the content to be taught, instructional strategies, lesson delivery techniques, instructional media, classroom climate, and student assessment. It will be decided before the teaching-learning process takes place. Therefore, the teachers should be able to select which materials and methods can be used so that the learning objectives can be achieved. The teachers should also be ready with topics to be discussed which can influence the learners' comprehension on Bahasa Indonesia and Indonesian culture.

2. Implementing

Implementing involves the actual enactment of the instructional plans concerning lesson delivery and assessment. The teaching activities that support the language skills to be implemented in the classroom include presenting and explaining, questioning, listening, monitoring, giving feedback, and demonstrating. By doing those activities, the teachers can monitor the learners' achievement, the learning process, the learners' behavior, and the significant changes toward the learners' goals in learning Bahasa Indonesia and culture.

3. Assessing

Assessing involves determining the level of learner learning. Many aspects of assessment are determined during the planning phase when instructional goals and content are identified. By giving the assessment, the learners' achievement can be measured, and the teachers' expectations on the success of teaching-learning process can be seen. In Bahasa Indonesia for non-native speakers' class, the assessment can be in the form of written test, writing composition, mini research, oral presentation, and also discussion.

III. DISCUSSION

This paper aims to give answers to problem formulations and also to analyze the common problems happened in the class and how they are solved in order to succeed the process of learning the language and culture. There are two problem formulations that can be answered in this paper. First, how to introduce and convey the cultural components in bahasa Indonesia class. And second, how to give the important values for the learners to have better understanding in knowing the Indonesian characteristics through the process of learning bahasa Indonesia and Indonesian culture.

A. How to Introduce and Convey the Cultural Components in Bahasa Indonesia Class.

ISI Yogyakarta has carried out and applied the program supported by Ministry of Education and Culture to assist speakers of other languages who learn bahasa Indonesia and Indonesian culture into a special condition, that is through *BIPA* (bahasa Indonesia for speakers of other languages).

BIPA aims to accommodate and facilitate the foreign people who study at ISI Yogyakarta for the short-term program or for the exchange program between two universities to know and understand bahasa Indonesia and Indonesian culture. As a university which focuses in conveying and transforming knowledge of arts and culture, ISI Yogyakarta is providing them

facilities to comprehend their basic understanding on bahasa Indonesia and Indonesian culture.

Introducing the cultural components in bahasa Indonesia class for speakers of other languages need good cooperation between teacher and learners since they should be involved in every aspects of the teaching-learning activities. *BIPA* at ISI Yogyakarta provides syllabus and teaching materials in which they can accommodate the learners need to understand and know bahasa Indonesia as well as Indonesian culture. Therefore, the syllabus is made for supporting the introduction of Indonesian culture. Each meeting is designed to give better understanding on Indonesian culture and cross-cultural understanding. Some cultural components used in *BIPA* class are knowledge about Indonesia, cultural notes, and culture discussion. Those three components are suggested since most of *BIPA* learners at ISI Yogyakarta are in beginner and intermediate level. The cultural research as another cultural component is not applied in the class.

By supporting the implementation of those three components, the learners are supposed to have better understanding on Indonesian culture. Besides having theories about bahasa Indonesia and Indonesian culture, the learners should participate in the teaching learning process. Below are the examples of cultural components found and applied in *BIPA* class of ISI Yogyakarta.

1. Knowledge about Indonesia

The topic of Yogyakarta: discusses about Yogyakarta as the tourism destination and city of education, the history of Yogyakarta, Keraton, and Jogjanese' customs. Videos, pictures, and additional reading texts are used to support the learning process.

2. Cultural Notes

The topic of showing time and schedules: discusses more about cross-cultural understanding.

Western countries: invitation of a meeting at 9 a.m., and the participants come on time.

Indonesia: invitation of a meeting at 9 a.m., and some of the participants may come late more than half an hour. Consequently, the meeting starts late.

3. Culture Discussion

The topic of Indonesian Food: discusses about some popular traditional food in Indonesia.

Yogyakarta: gudeg, bakpia, oseng-oseng, and so fort. Videos, pictures, pot-luck party, and cooking class can actively support the learning activities.

The cultural components basically can give more contribution to the successful learning process, however, it is the teacher who play the important role in this condition since the teacher is as the facilitator and mediator to engage learners and Indonesian culture.

B. How to Give the Learners' Important Values toward the Indonesian Characteristics through the Process of Learning Bahasa Indonesia and Indonesian Culture

Teaching is an activity designed to facilitate the process of learning by providing the desired information, by arranging circumstances, activities, and opportunities that are likely to promote skill and knowledge acquisition, and providing the necessary guides to keep the process of learning on the desired track [7]. Since there are many changes in situation and learners' need, the effecting teaching is needed.

Being teachers is not just teaching learners, but also conveying information. Teaching Bahasa Indonesia in a classroom needs some approaches and methods to be applied. It is the teacher who has better understanding of the learners' needs to find and select the most appropriate ones to be implemented in the classroom. However, the teachers should commit to the successful of language teaching and learning so that the expected results and class objectives can be well obtained.

The teachers of Bahasa Indonesia for non-speakers of other languages should consider some basic principles to teaching and understand the purposes of the teaching process. Since the learners are coming from different country that also have different background and culture, the teachers should be ready to have enough knowledge of cross cultural understanding and the language as well.

In order to create a good condition for the teaching-learning process, therefore, some basic principles to modern teaching have been identified. Brown [2] proposes ten principles of language learning or teaching which can be used to give the learners' important values toward the Indonesian characteristics through the process of learning Bahasa Indonesia and Indonesian Culture. They are as follows:

1. The first principle of language learning or teaching is to lower inhibitions in which teachers can involve their learners to play guessing and communication games; do role-plays and skits; sing songs; use group work; laugh together and share fears in small groups. By doing these activities, good environment of learning and fun learning process in the classroom can be achieved. In Bahasa Indonesia class for speakers of other languages, those activities can be applied as long as they can accommodate the learners' needs to understand and enhance their communicative competence. For example: learners *sing Cublak-Cublak*

Suweng as a traditional song in which it also invites learners to play the game of this song together.

2. The second principle is to encourage risk taking. While teaching-learning process takes place, it would be a better action if teachers praise learners for making efforts to try out language; use fluency exercises where errors are not corrected at that time; give outside-of-class assignments to speak or write or otherwise try out the language. These activities can influence the students to be more active to use the language as well as to be aware of using the language in active communication. The teachers can give them work-sheets or activities in which they should have interaction to local people so that more practices can be obtained. For example: the learners are invited to go to traditional market nearby in which they should practice how to go shopping and do bargaining. The teacher assists them by giving more freedom to them in exploring the language.

3. The third principle is to build learners' self-confidence in which teachers should tell the learners verbally and non-verbally that teachers believe in them; have them make lists of their strengths, of what they know or have accomplished in the course. As we know that learners are from different countries and have different background as well, they also need good support from teachers to develop their language competence. For example: each meeting of the learning process is designed to invite learners' participation, such as: presenting their findings, practicing the dialogue in front of the class, and so forth.

4. The fourth principle is to help learners develop intrinsic motivation. To help learners become more interested in learning Bahasa Indonesia and Indonesia culture, it is the teachers work to help them develop their intrinsic motivation. The teachers can tell them about the natural beauty of Indonesia, thousands of ethnic groups living in Indonesia, pluralistic society, and many more. By doing it, the learners can have motivation to learn Indonesia and there will be significant development of their language competence as well.

5. The fifth principle is to promote cooperative learning; teachers can do that by directing learners to share their knowledge and culture; playing down competition among them; getting the class to think of themselves as a team; and doing a considerable amount of small-group work. Cooperative learning is supposed to build learners' self-awareness that they need to cooperate with each other in order to develop their potentials and knowledge. For example: the competition of creating and making a traditional children's toy.

6. The sixth principle is to encourage learners to use right-brain processing. As we know that the human right-brain supports the language development and has potential storage for language as well, therefore, teachers should use movies and tapes in class; have the learners read passages rapidly; do skimming exercises; do rapid "free writes"; do oral fluency exercises where the object is to get learners to talk (or write) a lot without being corrected. By giving

the learners these activities, the learners' language competence can increase and they are able to use good language both orally and written. For example: learners are invited to fill in the blanks on song lyrics while they are listening to Indonesian song.

7. The seventh principle is to promote ambiguity tolerance, in which teachers should encourage learners to ask questions to teachers and each other what they do not understand something; keep their theoretical explanations very simple and brief; deal with just a few rules at a time. Since the learners learn Bahasa Indonesia, therefore these activities can make them receive and acquire Bahasa Indonesia more easily. And they do not get frustrated when they find difficulties in learning Bahasa Indonesia.

8. The eighth principle is to help learners use their intuition. Teachers should help them to use their intuition by praising them for good guessing; not giving explanation of errors – let a correction suffice; and correcting the selected errors, preferably just those that interfere with learning. Using intuition can help the learners understand and be aware of their language errors so that they will produce and use correct Bahasa Indonesia. For example: the teacher gives learners a game in which the learners should guess what the thing is hidden in the box.

9. The ninth principle is to get learners make their mistakes work for them. In order to make them know their language mistakes and let them produce the correct ones, teachers should tape-record learners' oral production and get them to identify errors; let them catch and correct each other's errors; not give them the correct form; encourage them to make lists of their common errors and to work on them on their own.

10. Finally, the tenth principle is to get learners get their own goals. Every learner has his/her own target of learning to achieve the goals, the goals of learning the language can be achieved if other elements of learning process like community, objectives, and teachers, support their process of learning the language. In the classroom, teachers should encourage or direct learners to go beyond the classroom goals; have them make lists of what they will accomplish on their own in a particular week; get the learners to make specific time commitments to study the language; and give "extra credit" work.

Those principles basically can be applied to the teaching-learning process as far as they are suitable, can be implemented, and match with curriculum and syllabus, learners' current needs, and learning objectives. The principles as proposed by Brown, actually, are needed in Bahasa Indonesia class and good for the success of the teaching-learning process in the classroom and can contribute to show the important values of Indonesian characteristics for learners to be understood so that the mutual cultural understanding among Indonesia and other countries is well supported.

IV. CONCLUSION

BIPA is assumed as a potential program for foreign people who want to learn and understand bahasa Indonesia and Indonesian culture. By following the BIPA class, the speakers of other languages are actively engaged with Indonesian culture. Therefore, it is the syllabus and material designer, and BIPA teachers to promote and facilitate the learners' needs in understanding Indonesian culture through bahasa Indonesia class.

The cultural components are regarded to bring positive values and significant changes to the learners' understanding on Indonesia and its culture. Therefore, they are also very beneficial to promote the partnership programs between Indonesia and the learner's original country so that there will be more opened discussion on the following programs.

ACKNOWLEDGMENT

This paper is fully dedicated to my family who always stands by me and gives support to accomplish it. My gratitude goes to ISI Yogyakarta which has already facilitated me in taking part on this seminar. Hopefully, there will be further research to accomplish this paper. And last but not least, a special thank also goes to ICERI committee for giving me good opportunity to present my paper in the conference.

References

- [1] Bates, D.G., & Fratkin, E.M., *Cultural Anthropology*, 3rd ed., Boston: Pearson Education, Inc., 2003.
- [2] Brown, H.D., *Principles of Language Learning and Teaching*, 2nd ed., New Jersey: Prentice-Hall, Inc., 1987.
- [3] Bundhowi, M., *Komponen Budaya dalam Pengajaran BIPA*, unpublished, 2007.
- [4] Burden, P.R. and Byrd, D.M., *Methods for Effective Teaching: Meeting the Needs of All Students*, 5th ed. Boston: Allyn&Bacon, 2010.
- [5] Dubbeldam, L., and Epskamp, K., "Education and Culture" in Dubbeldam, L., and Epskamp, K., *Proceeding, The International Symposium on Education, Culture and Productive Life in Developing Countries*, The Hague: CESO, 1988., pp. 35.
- [6] Peter, T., *Sociolinguistics: An Introduction to Language and Society*, London: Penguin Books, 1983.
- [7] Salomon, G., *The Changing Role of the Teacher: From Information Tansmitter to Orchestrator of Learning* in Oser, F.K., Dick, A., and Patry, JL., *Effective and Responsible Teaching: The New Synthesis*, San Fransisco: Jossey-Bass Publisher, 1992., pp. 35.

[8] Spradley, J., and McCurdy, D.W., *Conformity and Conflict: Readings in Cultural Anthropology*, 12th ed., Boston: Pearson Education, Inc., 2006

IDENTIFYING THE CHALLENGES OF UNDERGRADUATE STUDENTS IN WRITING RESEARCH PROJECTS: A PRELIMINARY STUDY

Eny Winarti

Sanata Dharma University
enywinarti@gmail.com

Abstract

In the Department of Teacher Training of Elementary School (Pendidikan Guru Sekolah Dasar, PGSD) of Sanata Dharma University, students are required to write a research report to obtain their undergraduate degree. Their research project can be quantitative, qualitative, classroom action research or research and development depending upon their interest. Joining the examination boards, I discovered that the students' reports did not reflect the ideal research report writing. This paper is then aimed at identifying the students' challenges in writing research reports. In order to do so, the reports of students' research projects were analyzed by examining the logic of the research design and the usage of appropriate academic language. The logic of the research design was related to the logic of how the students developed their title, background, literature reviews, research methods, results, conclusions and recommendation, and references. The usage of appropriate academic language included the logic of academic language based on Bloom's taxonomy, and the students' efforts to avoid plagiarism. The result of the studies indicated that students had challenges in presenting the logic of research design and in using the logic of academic language appropriately. Based on this study, the findings suggested that there should be additional courses that more intensively prepare the students to deal with such challenges.

Keywords: research projects, research report writing, writing challenges, academic language

1. Introduction

In the Department of Teacher Training of Elementary School (*Pendidikan Guru Sekolah Dasar, PGSD*) of Sanata Dharma University, students are required to write a research report to obtain their undergraduate degree. Their research project can be quantitative, qualitative, classroom action research or research and development depending upon the students' interest [10]. It is listed in the curricula that in order to prepare the students for writing this final project, the department provides specific courses, namely *metodologi penelitian* (research methodology, which is offered at semester 6, and *penelitian tindakan kelas* (PTK, classroom action research) which is offered at semester 7. It is expected that by the end of semester 8 the students will have completed their final project.

Based on the curriculum, the research methodology course provides students with different theories and practices of methodologies in either quantitative, qualitative or research and development studies. By the end of this course in semester 6, the students are expected to write a complete proposal of a research study based on their own interest. It can be quantitative, qualitative or research and development. This kind of study is also projected in action research course. In other words, the students need to create two different proposals based on their interest: one main research, and the other action research.

By the end of semester 7, the students are required to decide which one of their proposals will be developed into the final project. Once they decide their final project proposals, the students are encouraged to decide with their advisor. The main advisor should at least have the academic profession of *asisten ahli*, about the same level as assistant professor. It is in such a design that by the end of semester 8, the students are expected to have completed their research project and its final report.

To make the guidance efficient, the department also provides the students with collaborative research. In this kind of study, an advisor might guide and meet regularly with five to fifteen students once a week, once in two weeks, or even only once in a month. The models of the meeting can also be varied, based on the teachers' values and interests. In my collaborative research, for example, my group met once a week at the beginning of the semester, before the students collected the data. When the students already had the data, we met twice a week. In the meeting, we shared the progress and challenges the students met in the process.

Despite the systematic ways of guiding the students, when I joined the examination boards, I realized that the students' research reports did not reflect ideal research papers. The background of the study often did not directly lead to the research questions; the

research problems were not clearly formulated; the literature review was not well-organized; the methodology was not clearly described; and the conclusions were not well-articulated to answer the research problems. This situation stimulated me to study the problems that the students have to deal with in writing their research projects. The results of this study will serve to inform the education department to identify what to do to prepare students to better write their research projects.

2. Theoretical Review

This section is aimed at presenting the features of the research reports expected by the program of the study including the information about the research description and its components. This information is taken from the guidelines of the writing research report of the department [10].

The department emphasizes that research report writing for undergraduate student is one of the requirements in order for the undergraduate students to accomplish their study. This writing is considered to be an academic exercise for the students. Therefore, while it should be free from plagiarism, it should also reflect the students understanding of the courses that the students have obtained. As noted in the introduction section, this report writing can be either quantitative, qualitative, research and development, or classroom action research.

It is stated in the guidelines that the components to be included in the research report writing are the title, introduction, literature review, research methods, results and discussion, conclusions and recommendations, and references. Further, it is explained that written in not more than 15 words, the title of the research should summarize the main topic of the research. It should also reflect the relationships of variables and elements to be discussed in the research.

Following the title is the introduction section, consisting of research background, research questions, research aims and objectives, and research benefits. The research background should reflect the logical process why the research should be conducted and the research questions should contain the information about what the study focuses on. The aims and objectives section includes the expectation of the research to be conducted and the research benefits inform who will benefit from the research.

In the literature review section, three subsections are included. They are the theoretical review, which is subdivided into the relevant theories and studies, and the theoretical framework that discusses the conceptual relation among the theories, and the research

hypothesis, which reflects the temporary answers to the research questions, and which should appear in all types of research writing except in qualitative.

The methods section contains the steps and procedures of the research used to answer the research questions. The methods section in different types of study has different components. The components of research methods section in quantitative study should include types of the research, sample selection, research variables, operational definitions, research instruments, data collection, and data analysis. The components of the research methods section in qualitative research are types of research, research setting, data collection, research instruments, and data analysis. The components of the research methods section in research and development include types of the research, research setting, research plan, development plan, research instruments, data collection, and data analysis. The components of the research methods section in classroom action research are types of the research, research setting, action plan, research instruments, data collection, and data analysis.

The components of the results and discussion section are basically the same for all kinds of researches agreed by the department. This section discusses the results of the data analysis and should reflect the presentation of the data in order to answer the research questions stated in the introduction.

The conclusion and recommendation is the section that follows the results and discussion section. It is stated in the guidelines that the conclusions and the organization should directly relate with the research questions. While the research inquiry is constructed as question sentences, the conclusions directly provide the answers to the research questions. The recommendations given in this section should be the recommendation generated from the implications generated from the findings. In other words, the recommendations should be directly related to the implication of the findings.

The references section includes the lists of academic sources used in the writing. It is stated in the guidelines that the students should not include the references that are not cited in the writing. It is important to note that the guidelines also emphasize that the term "references" is preferable to "bibliography" since the citations appear in the list as the books or other academic sources which are cited in the text.

3. Methods

To respond to the research objectives, six students' research projects, which were defended in front of me, were analyzed and evaluated. These papers were then analyzed based on the logic of the research design and the academic language use. The academic

language use included the implementation of the academic language genres. These academic language genres cover the language of narrating, describing, comparing and contrasting, indicating cause and effect, and persuading and arguing. Meanwhile, the logic of the research design includes the logic of the research background, the formulation of the questions, the research methods, the findings or results, and the conclusions and recommendations.

4. Research Findings and Discussion

The research findings were divided into two categories: the logic of the research design language use and the usage of the academic language. The logic of the research design covered the logic of the research background, the formulation of the problems, the research methods, the findings or the results, and the conclusions and recommendations. The usage of academic language was categorized into the implementation of academic language genres and the efforts to avoid plagiarism.

4.1 The Logic of the Research Design

As noted previously, the basic of research design includes the title, introduction, literature review, the research methods, the findings or results of the study, the conclusion and recommendations, and references. These elements were used as the key elements to evaluate the students' challenges in building the logic of the research design.

In writing the title, students appeared to have challenges in differentiating whether their study was a quantitative or classroom action research report. In some cases the students included a very specific classroom setting in the title while they intended to use the setting as the sample. For example, the students introduced their title as "hubungan antarmata dan prestasi belajar di SD X kelas Y," which can be translated into "the correlation between students' interests and achievements in SD X, class Y." Considering the title of the study, this title appears to be a classroom action research, while in fact, by looking at the methods, the students wanted to use the school and class setting to address the sample of the study.

The challenges in writing the introduction were the logic of writing the background and the research questions. In writing the background, students appeared to have challenges in revealing and filling the gap that they wanted to study. The students, who mostly write quantitative studies, appeared to fail to incorporate into their background writing the logic of quantitative studies, which is meant to test the theory. The students tended to be vague describing the rationale of the research. Since quantitative study is meant to test theory [4] [8], the logic of research questions should use a yes/no format [8]. Instead of constructing the research questions into yes/no question formulation, four out of six students used the wh-questions however, which is more exploratory.

In writing the literature reviews, especially in the theoretical sections, the students had problems in synthesizing concepts from different sources. This challenge was to be related with the academic language mechanics, which will be discussed in the following section. The students' understanding about research hypothesis was another challenge found in this section. It is important to note that 5 out of six students used quantitative research method. While the students could write the statistical hypothesis, they failed to explain the statistical hypothesis that they had formulated.

In writing the research method, the students appeared to have difficulties in understanding the concepts of the population and sample. As noted previously, the students failed to present in the title whether their study would be a quantitative or a classroom action research study. There was little consistency between the population and sample presented in the title, and the population and sample discussed in method section.

The research instrument was also another issue found in this section. In developing a questionnaire, the students appeared to be unaware that the statements in the questionnaires might provide specific answers leading into bias [7]. In addition, the construct that the students developed appeared to be inconsistent and did not strongly relate to the theory discussed in the theoretical review. For example, the students developed questionnaires of "interest" without introducing the definition of what being interested mean. This lack of specificity triggered the question of the validity issue of the instrument [7].

It was not only the sample and the instrument of the research, but also the data analysis that complicated the challenges. Students appeared to have problems to decide which statistical tools to be used to analyze the data. For example, they used t-test to analyze data in classroom action research. As seen, the respondents in classroom action research is considered to be population, in which inferential statistic is not needed [1].

Another issue that emerged regarding the logic design in this study was found in the conclusions and recommendations. As mentioned previously, the main purpose of the conclusions is to give direct answers to the research questions. However, the way the students answered the questions was inconsistent. For example, the question "Apakahadapengaruhantara model polaasuh orang tuadanprestasi?" which can be translated into "Is there any relationship between the models of parenting and students' achievement?" was answered with "adakorelasipositifantara model polaasuh orang tuadanprestasi" which can be translated into "there is a positive correlation between the model of parenting and students' achievement.

4.2 The Usage of Academic Language

As noted earlier, the usage of academic language was divided into two different categories, namely the implementation of academic language and the efforts to avoid plagiarism. I categorized genres of academic language into narrating, describing, comparing and contrasting, indicating cause and effect, and persuading and arguing. This categorization was used to analyze the students' works based on Bloom's taxonomy [6].

4.2.1 The implementation of academic language

According to Oshima and Hogue [2], the most prominent aspect in narrative writing is the sequence of an event. In terms of narrating, the students tended to skip narrating what happened in the field. Instead of narrating what happened in a thick description, they tended to use their own interpretations. For example, without presenting the event that might lead to this conclusion, one of my students wrote in Indonesian, "siswatidakmemperhatikan guru" which could be interpreted that the students did not pay attention to the teacher. This expression implied that he judged the students observed as not paying attention to the teacher without sufficient data. When the students were supposed to describe graphs, figures, or demography, they tended not to create thorough description. They often included graphs, figures, or demography without sufficiently describing them. When the students were required to describe research setting, they tended to organize their information contextually. They appeared to get confused in identifying whether they applied the "spectators" or "birds" point of view. Sometimes they just mixed the two. Consequently, it was challenging for the readers to follow.

The logic of comparing and contrasting was another challenge to be recognized. Oshima and Hogue [2] and Azar [5] indicated that in comparing and contrasting, the elements to contrast should be at least two elements of the same levels, categories or classes. Nevertheless, the students sometimes did not pay enough attention to this approach. For example they said "SiswakelasAnilainyalebihtinggidibandingdengankelas B" which could be translated word by word into the scores of students in class A was higher compared with class B. In this context, it can be seen that it is not clear what is being compared: is it the classes, the students, or the grades?

The students were challenged not only in terms of narrating, describing, and comparing and contrasting, but also in indicating cause and effect. Without providing enough premises, the students directly drew strong conclusions to indicate the effect. For example, the students at the beginning stated that the teacher kept lecturing in the classroom, then, by introducing "sebagaiakibat," an Indonesian expression equivalent with "as a result," the students claimed that the students got bored. The students appeared to be unaware that it

is possible for a teacher to have a wonderful lecturing class, like the prophets' teaching and that it is the students' responsibility to manage their own boredom.

In building and developing a persuasive argument, the students appeared to have a final challenge. According to Oshima and Hogue [1], an academic argument should review both positive and negative values of what is being evaluated before someone states his/her position. The students, however, appeared to fail in building their argument objectively. Instead of including these two sides in providing dialectical judgment, the students built one-sided argument, either positive or negative to support their premise. Consequently, they tried to be judgmental, but failed to use appropriate academic language. In other instances, the students failed to support or take a clear position in the argument as it related to their research questions.

4.2.2 The efforts to avoid plagiarism

There are three ways to avoid plagiarism, namely by quoting, paraphrasing, and summarizing with proper citation and references [3]. The students appeared to make efforts in avoiding plagiarism although the efforts were far from the expected ideal. In quoting other sources, for example, the students tended to quote long sentences, or even paragraphs without including their own explanation or interpretation about the quotes used. They even appeared to copy a diagram or figure in their project without proper citation and reference. Additionally there was an indication that the students did not ask for permission to reprint published materials. This lack of respect for copyrighted intellectual property could be seen from the way they did not include proper citation of the sources in the diagram or figure, nor in bibliographic references.

In paraphrasing the sources, the students also tended to use the same language markers to introduce different sources, even in different paragraphs repetitively. For example, they often used the word "menurut ..." which could be translated into "according to ..." to introduce paraphrasing different sources in different paragraphs in rows. In addition, the paraphrases that they made sometimes were too close to the sources, and this tendency created the potential for plagiarism, or the borrowing of phrases without proper citation.

While appearing not to be able to quote and paraphrase the sources appropriately, the students also appeared to be unfamiliar with how ways to summarize sources. The language of summary can be indicated by the appearance of the in text citation at the end of the summary [3]. However, none of the students revealed this indication.

5. Conclusions and Recommendation

From the findings, it can be determined that the students' challenges in writing research reports were triggered by their failure to follow the logic of the research. It is possible that their inability to develop the logic of the research design is the inability of the students to understand the mechanics of the academic language. For this reason, it is suggested that the department considers further courses that might help the students to understand the academic language and logic of research methodology.

REFERENCES

- [1] A. Aron, E. N. Aron & E. J. Coups, *Statistics for the Behavioral and Social Sciences*, 4th ed., NJ: Prentice Hall, 2008.
 - [2] A. Oshima & A. Hogue, *Writing Academic English*, 4th ed., White Plains, NY: Longman, 2006.
 - [3] A. Raimes. *Keys for Writers*. MA: Houghton Mifflin. 2008.
 - [4] B. Johnson & L. Christensen, *Education Research: Quantitative, Qualitative and Mixed Approaches*, 4th ed., CA: Sage, 2012.
 - [5] B. S. Azar, *Understanding and Using English Grammar*, NY: Pearson Education, 2009.
 - [6] B. S. Bloom, *Taxonomy of Educational Objectives: The Classification of Educational Goals*, NY: Longman, 1956.
 - [7] L. Crocker & J. Algina, *Introduction to Classical and Modern Test Theory*, OH: Cengage Learning, 2008.
 - [8] M.Q. Patton, *Qualitative Research and Evaluation Methods*, 3rd ed., CA: Sage, 2002
 - [9] Program Studi Pendidikan Guru Sekolah Dasar, Universitas Sanata Dharma, *Kurikulum PGSD*, 2012, Unpublished.
- Program Studi Pendidikan Guru Sekolah Dasar, Universitas Sanata Dharma, *Pedoman Skripsi*, 2012, Unpublished.

Promoting *Sarjana* [Undergraduate] Paper Writing Skill through the Indigenous Wisdom *Katresnanism* Based Approach: A Case Study in Poetry Class of PBI USD Yogyakarta³⁶

Antonius Herujiyanto

Sanata Dharma University Yogyakarta, Indonesia

anton.herujiyanto@gmail.com

Abstract

This research paper is a further attempt to critically look into the ways of optimizing the indigenous wisdom named *Katresnanism* based approach to promote undergraduate paper writing skill as seen in POETRY class of the English Language Education Study Program of Sanata Dharma University Yogyakarta, Indonesia.

In line with the course objectives such as exploring questions on the art of poetry; analyzing cultural similarities with regards to the nature of poetry and world cultures [as represented in eastern (Indonesian) and western [American] cultures, the class activities [both spoken and written ones] would be, therefore, dealing with the cultural characteristics and case studies [some world noted poems]. Not only are the students encouraged to discuss their cultural understanding; the intrinsic and extrinsic aspects of the poems discussed but they are also exposed to writing skill activities conducted in class. The data of this study were, then, gathered from the students' critical writing papers done for their midterm test (02-12/04/2013). Their papers are on their understanding of the art of poetry discussed and learnt in class. The findings of this study deal with the quality of their critical writing papers: whether or not they used their ideas to advance and develop their thesis.

This study is grounded on the *Katresnanism* based approach, proposing to apply "Katresnan" (divine love) or rather positive thinking in the discussion. Its description and one of its cores named "nyengkuyung [altruistic collaboration]" would be, thus, to open the study.

³⁶A paper presented in the International Conference on Educational Research and Innovation [ICERI 2013], in UNY Hotel, Yogyakarta State University, Indonesia, May 16-17, 2013

Key words: *Katresnanism* based approach, art of poetry, writing skill, *nyengkuyung* [altruistic collaboration]

Introduction

It is undeniable that applying an appropriate form of assessment is one of the effective ways to enhance student paper writing skill. This is, in fact, one of the responses to the demand of the Indonesian Directorate General of Higher Education and Culture Ministry stated in its decree No. 152/D/T/2012, dated on 27 January 2012. It says that one of the requirements to obtain undergraduate degree (*program Sarjana Strata I*) is for the student to have produced a paper published in a scientific journal.

The appropriate form of assessment, however, does not only involve those principles advocated by Brown (2004: 15-30), such as validity, reliability, authenticity, and so on, but it also needs to be carried out within the student's cultural values. This is exactly what this study dealing with: applying indigenous wisdom named *Katresnanism* [pious love] based approach with its focus on *nyengkuyung* [altruistic collaboration] to promote undergraduate paper writing skill as seen in Poetry class of the English Language Education Study Program of Sanata Dharma University Yogyakarta, Indonesia.

This study is aimed at examining the students' critical writing papers done for their midterm test (02-12/04/2013) of their Poetry class (Semester VI). Their papers are on their understanding of the art of poetry as the result of a small group discussion carried out in the spirit of *nyengkuyung*. The findings deal with whether or not they used "their ideas to advance and develop their thesis" (Manlapaz, 3). This is, in fact, the minimum requirement for a paper to be able to be published in a scientific journal.

Nyengkuyung is one the *aos* [cores] of *Katresnanism* theory, accommodating the action of co-operation sincerely without expecting something in return. It is, to a certain extent, implementing altruism attitude as reflected in the actions commonly practiced in the Javanese *gotong royong* [community self-help].

The word *nyengkuyung* deals with one of those basic concepts of intercultural communication in *Katresnanism* wisdom. It can be defined as those actions exercising "altruistic collaboration" as explained in, among others, Herujiyanto's "Katresnan Criticism: The Nature and Who Does It" (2006: 125-138) as follows:

Theory of *katresnanism* (divine love) is a term which refers to the result of an inductive work functioning as a reminder and invitation (*éling-kèlingan*) of one's true self (*jati diri*) and one's existence which was granted due to *katresnan* (divine love) as soon as one was born. It also functions as a practical way of regarding and looking at—and thus sincerely holding the commitment—things such as one's work (including one's own work), numerous life situation by using positive thinking. Since it is an action of know-how, it may be referred to as *katresnanism* approach; and because it involves analysis on one's work, it can also be called a form of Critical theory. Due to the nature of the components and principles used—which are mostly derived from Javanese philosophy—it is often referred to as philosophical analysis.

Katresnanism as a school of thought is also meant to enquire into one's work (including that of one's own): thinking about the work involving the questions “why the work is done as it is, why the doer is the way that he or she is.” As a school of thought, *katresnanism* is following the natural working forces of the unity of mind and heart, commonsense (rational, logic) and conscience (ethics, morals, passion), world and heaven, you within me. When the unity is taking place, the so-called “corpus”³⁷ is also being formed as energy.

This kind of energy is represented in the form of the so-called *aos katresnanism* or principles of *katresnanism*. Admittedly, dealing with theory *katresnanism* is not necessarily to talk on the value of the teachings implanted within Indonesian culture.

Looking into the chronological order of how the students produce their critical writing papers done for their midterm test is the process of *nyengkuyung*:

First, the students were divided into small group of four (as there were four classes with 35 students each, so there were 28 groups). They discussed their understanding on the Art of Poetry, dealing with Rhythm, Imitation, Style and Tone, Pleasure and/ or Truth.

Second, which was the following meeting, they exchanged their first draft of their paper. Having read it, they gave their comment and suggestion.

Third, the students' second draft paper was consulted with their lecturer. The consultation was mainly dealing with their understanding of the materials discussed.

³⁷ This very “corpus” is represented in the form of the body and soul in the sense of world and heaven (and so I should mention *manunggaling kawula-Gusti*) which may be signified as the first single personal pronoun “I” and the second single personal pronoun “you.” The theory is, thus, a dialogue embracing the saying that “You are what you think—and sense—what you become.” In the process, however, being I within you (unity) is like being, for example, whatever you and me (being we) in the same boat: whatever we do and represent is in the *krenteg* (energy) of the so-called *aos katresnanism*.

Fourth, the student conducted their midterm test: submitting their final critical writing papers. The very data resulted from *nyengkuyung* actions were, then, analyzed. Not only were they analyzed to find the students' understanding on the material discussed in class, but they were also symptomatically read to find whether or not the students had used their ideas to advance and develop their thesis.

The discussion of this study will be, thus, based on the following questions:

1. How do the students understand the nature of a research paper?
2. How did they use their ideas to advance and develop their thesis?

The nature of theory of *Katresnanism* can be seen in its brief version at the **Note** of this paper right before the **References**

Findings and Discussion

Having analyzed the data, there are several tables and/or lists produced: first, it deals with the nature of a research paper, covering whether or not their papers use documentation; analyzing, discussing, and debating ideas; acquainting them with a cross section of materials; engaging them in critical, not creative, reading and writing.

Second, it deals with the idea that a research paper is not: 1) a piece of expository writing; 2) personal essay; 3) reflection paper; 4) review of academic literature; and 5) a mere reporting of facts and/ or opinions.

The nine numbers between the brackets in the examples discussed are the identity of the student (student number).

How the students understand the nature of a research paper

Out of the total number of groups (28), a smaller number of them used documentation (7 groups). It is very encouraging, however, that all of them did analyze, discuss, and debate ideas. The other two criteria can be seen in Table1.

Table 1.

Using documentation	7 groups
Analyzing, discussing, and debating ideas	28 groups
Acquainting them with a cross section of materials	16 groups
Engaging them in critical, not creative, reading and writing	18 groups

The results of the study show that many students tend to think that a research paper means analyzing, discussing, and debating ideas. Many of them do not seem to realize that the research paper is not merely another exercise in using library.

The following paragraph, for example, reflects such an attitude (101214108); there is no documentation at all:

“Poetry is the part of art. It is the art of language. The main thing which is shown in art is beauty of it, in a form of pleasure. That is why pleasure is one of the main things in poetry, because if a poem does not contain pleasure inside it, it will be “lifeless”. However, people often misunderstand about the aim in making poem. Some poets think that a poem should have “moral/message” inside it. So, in those poets opinion, poem is one of ways to “teach a lesson”. But, that kind of opinion is wrong. Poems which set out to teach lesson are considered as bad poems, because it will be boring. The effect of it can be seen on children. Children will regard poetry as a task, and when they grow up they will not read it. Samuel Johnson explained: "The end of writing is to instruct; the end of poetry is to instruct by pleasing." From that statement of Johnson, it is clear that one of the main things of poetry is the pleasure.”

Here is another one, neglecting documentation (101214084):

Rhythm is one of essential element in poetry. It repeats stress. There are many definition of rhythm. ‘Rhythm is a natural effect within poetry’. ‘Rhythm refers to the pattern of sounds

made by varying the stressed and unstressed syllables in a poem'. Another definition about rhythm is the pattern of stresses within a line of verse.

It is very encouraging that most students seem to realize that the nature of the research can only be one of two things, namely, analytical or argumentative. Understanding the difference between the two, however, needs to be highlighted since not only will this determine the purpose of the research, but it will also influence the strategy used.

The following is an example of the importance of avoiding making judgments on the topic per se.

Quoting from <http://voices.yahoo.com/poetry-analysis-wandered-lonely-as-cloud-william-4835342.html> (accessed on March 23, 2013), the following student (101214148) wrote, "Wordsworth is a poet whose life is close to nature. His works on poems are mostly related to objects of nature. In this poem, he uses 'cloud' as the subject. 'Cloud' here becomes the metaphor of himself. He also sees 'daffodils' as a human being that is alive for him. Wordsworth describes the scene as he wanders 'as lonely as a cloud.' He compares himself to a solitary cloud that is floating over the valleys and the hills and then he sees a 'crowd' of golden daffodils which are under the trees and beside a lake and are 'fluttering and dancing in the breeze.'

In line with the opinion stated by Manlapaz (p.4), the conclusions above are personal opinion, but "they are informed personal opinions, shaped by a critical understanding of the issues at stake.

Having analyzed two poems, respectively, Rasma Raisers' "Ice Flowers" and Blake Duffy's "Cold Dark Corner," the following student (101214146) seems to have done his best when he wrote:

Although the poets provide us different theme and atmosphere, but they have are able to provide the beauty in their own way. Some people are able to get pleasure by reading the first poetry, but not the second one, and the reverse. There are some people who are able to get pleasure from two of them. It is very subjective and based on taste, social, and cultural background.

It is reasonable to assume that the student above does not have a fixed or firm conclusion yet in his head since reading the whole paper we can obviously tell that his paper can be categorized as an analytical paper.

The following three paragraphs were written by three students (101214180, 101214137, and 101214166):

(1) There are three metaphors that Robert Browning uses in this poetry. The first metaphor lies on the second verse. *A suburb lane* is used as a metaphor for *table's edge*. Lane is a small path in village and suburb is an outlying part of a city or town. Here, Robert Browning wants to tell a place which is actually easy to find or visible but it is alone or far from crowd. He gives another metaphor to the next verse. On the third verse, *the curtain blue* is used as metaphor for *the garden-wall*. Blue is identical to the color of sadness or sorrow. A curtain has a characteristic to cover something. So, from the third verse, Browning explains more for the place he means that its atmosphere is covered with sadness or sorrow. The third metaphor lies on the fourth verse. Here, *the house* is used as a metaphor for *that farthest bottle labeled "Ether"*. Here, Robert Browning reveals that the place that he means before is a house.

(2) In this poem, Milton used such a high language. The language he used suits the subjects which are also lofty. It is like when we talk about Angel, we cannot use slang, only polite and high language is used. Figurative language and complex vocabulary is also used, for example in the words "disobedience," "fruit," and "chosen Seed." We cannot translate it to the basic meaning. The meaning is deeper than the basic ones. For example, the word "fruit," it is not the fruit that we can eat. The fruit symbolizes temptation of something forbidden that makes a man do a sin.

(3) In my opinion, this poem tells about the relation between nature and human being. It is an illustration that the earth is changing by the time because it getting older and older. Everything can change and move. Natural disaster is easy come and goes by the time. Here, the writer uses "now" as a metaphor to illustrate what the real things that is happening nowadays in the earth. The diction "now" as if the earth is in uncontrolled situation. This meaning is strengthened by another metaphor, such as: monster of destruction. *Monster of destruction* symbolizes unwanted disaster that comes to the earth by the time. It is called natural disaster. Indeed, natural disaster is a nature phenomenon that can be prevented by the human beings. It can happen anywhere and anytime like a monster that can destroy anything in world.

The three paragraphs above, to a certain extent, meet the basic requirement of the so-called analytical papers (Manlapaz, p.6); the three students above must have, indeed, conducted a survey; they have certainly done their best to collect the existing views to familiarize the general landscape of ideas and concepts related to their topics. Secondly, they must have realized that "analytical papers would eventually require subjecting the information to

critical reading and thinking as well as an insightful evaluation of the validity of the claims.” Thirdly, such papers “remain largely exploratory in nature; hence, the apparent lack of a clear thesis statement at the start of the paper.”

According to Manlapaz (6), argumentative papers “demand a clear stand on a contentious issue and the use of evidence to back up your claims”. Not only would an argumentative paper assert a clear and focused thesis statement at the start of the paper, but it would also “present both sides of an issue for purposes of building up and breaking down arguments in favor of one side.”

Out of the 28 groups analyzing, discussing, and debating ideas, there are only 8 (eight) groups meeting the three basic requirements mentioned above.

In the meantime, those 28 groups have used their ideas in many different ways to advance and develop their thesis. It is understandable since most of them admittedly explained that they needed to brush up on their English. Not only do they need to read much more different kind of books, but they also seem to need to write papers more frequently.

Conclusions and Suggestions

This paper has shown that it is plausible to make use of the indigenous wisdom named *Katresnanism* based approach to improve undergraduate paper writing skill.

Not only has the approach helped the students feel relaxed in following the activities conducted in the

class, but they have also improved their research paper writing skill.

This article also shows that the objectives of the course such as exploring questions on the art of poetry and analyzing cultural similarities with regards to the nature of poetry and world cultures may be achieved mainly through written activities.

Moreover, the findings of this study have highlighted that lecturers would not be looking for how many sources were used in the students’ papers or what the experts have said about their subjects but rather how well the students use their ideas to develop their thesis. As a result, this study may, indeed, be deserved to promote *Sarjana* [Undergraduate] Paper Writing Skill through the Indigenous Wisdom *Katresnanism* Based Approach.

Acknowledgment

The researcher would like to thank the DDP2M Dikti of Indonesian Ministry of Education and Culture for the 2013 grant of a research entitled “Optimasi Penerapan Kearifan Lokal (*Indigenous Wisdom*) Teori Katresnanisme (*Katresnan Theory and Criticism*) untuk Meningkatkan Ketrampilan Menulis Makalah Bahasa Inggris: Studi Kasus di Prodi Pendidikan Bahasa Inggris Universitas Sanata Dharma Yogyakarta.”

Note

The brief version of the indigenous wisdom of *Katresnanism* theory and approach can be described as follows (Herujiyanto, 2006: 125-138):

There are 99³⁸ *aos katresnanism* representing the hypothesis of this theory. Up to now, 33 *aos* (principles) have been discussed. The fact that theory of *katresnanism* is an open ended may be seen through the words positive thinking and through an invitation to anybody to develop by, among others, proposing for adding more *aos*.

These *aos* or principles or rather characteristics may also be called the components of *katresnanism*.

The result of applying *katresnanism* would show how a systematic investigation is used to positively see one's behavior and the reasons for it. The goal is to enlighten and to achieve a better understanding of one's work by finding out the covert or deeper meaning of it so that the door is always opened to all possible angles of development.

Like action research, theory of *katresnanism* may be considered as a strategy to help us live positively and in a way that we feel the very enlightening-peaceful way.

Theory *katresnanism* is basically introduced to establish a kind of school of thought on January 16, 2001 in Yogyakarta (Sanata Dharma University) although it began with something else due to the outcome of my Masteral thesis, “Brechtian Strategy, a Response and reaction to Empire” (1998) and my doctoral dissertation, “Wayang and Brechtian Strategy as a Subversive Act” (2000).

As the word *katresnanism* suggests, it is a Javanese word. Theory of *katresnanism* is, thus, an eastern theory by nature. Be it called an ingenuous theory, a local one or a Javanese native theory, it has its rights to know and to be known and thus to sit side by side with other “theory.” It was also in 2001 that the students of the graduate program of the English

³⁸ 99 are both numbers and symbol.

Studies Program at Sanata Dharma University participated in the discussion of the very theory, especially in dealing with its possible application as an additional tool used to enquire into literary works. In the discussion it was emphasized that the theory belongs to everybody functioning as a reminder: there is nothing new under the sun but angles.

Theory of *katresnanism* is expected to be developed mainly by academic circles in higher education (through seminars and conferences) and those being concerned with the disadvantageous situation in many parts of the world due to war, terrorism, corruption and the like. The theory, however, is still a toddler inviting everybody to study and clarify the steps involved, including the so-called *aos katresnan* (principles of *katresnanism*) underpinning the theory of *katresnanism*. The invitation may cover the need for discipline enquiry, different interpretation, technical aspects, values, practices, debates, and certainly for adding other *aos katresnan*.

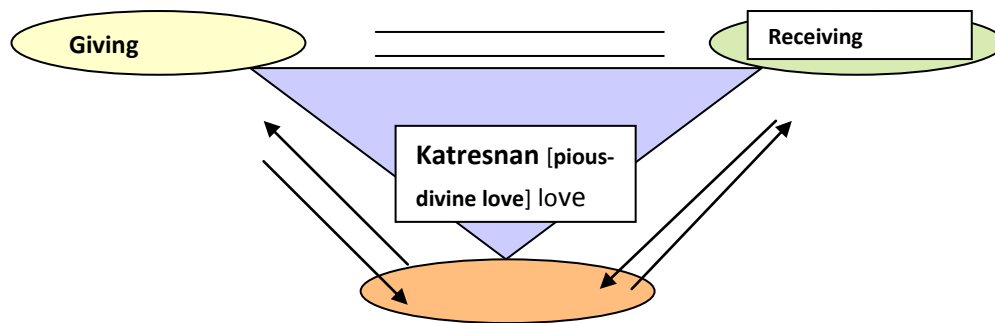
As for the meaning, it is the positive-thinking wise and thus promotes positive thinking: this would emerge through practice, either by doing the research or embracing it through the deeds done in daily world situation. The later may be exemplified when we are faced with a malign or disgracefulness and slander through a false accusation for doing something that we have not committed at all. It is a kind of the so-called character assassination. To promote positive thinking or to use *katresnanism* theory is, then, for us to regard that it is an opportunity for us to introduce ourselves who we really are; that we happily consider the accuser (say, the very "character assassin") as a very curious person begging us a new knowledge or experience.

The assumption is that the malign is due to the strong desire to know us better. Using *katresnanism* theory we may explain our true-self. Through research, on the other hand, it emerges as we apply it and as we explain what we are doing and why we are doing it. This very paper is in fact the practice of *katresnanism* itself, trying to answer all the questions and arguments happily, knowing that they would develop or rather enlighten the theory naturally.

Theory of “*Katresnanism*” (divine Love) may be seen through the following figure³⁹:

Theory of “*Katresnanism*” (divine Love) may, thus, be seen through the following figure⁴⁰:

Those who offer *katresnan* = Those who receive *katresnan*



The Real Truth: Aos *Katresnanism*

³⁹ See also a figure of theory of *katresnanism* which is developed from this very figure by L. Bening Parwitasukci in her masteral thesis, July, 2003. With it, she contributes an *aos katresnan* called *sumarah*.

⁴⁰ See also a figure of theory of *katresnanism* which is developed from this very figure by L. Bening Parwitasukci in her masteral thesis, July, 2003. With it, she contributes an *aos katresnan* called *sumarah*.

The following table is the list of the cores (*aos*) of Katresnanism

1. <i>andhap asor</i> (being humble)	12. <i>kraton nDalem</i> (being spiritual)	23. <i>sithik idhing</i> (promoting win-win)
2. <i>andhom slamet</i> (sharing protection)	13. <i>lothong kemayangan</i> (feeling lucky)	24. <i>sumèlèh</i> (being able to accept)
3. <i>angon mangsa</i> (being versatile)	14. <i>migunani</i> (<i>promoting benefit</i>)	25. <i>tentram</i> (promoting peace)
4. <i>atur panuwun</i> (feeling gratitude)	15. <i>mrantasi</i> (being reliable)	26.a. <i>tulus</i> (being sincere) b. <i>nyengkuyung</i>
5. <i>banyu sinaring</i> (becoming a purified model)	16. <i>mulat sarira</i> (being considerate)	27. <i>tuhu</i> (celebrating faithfulness)
6. <i>binerkahan</i> (being blessed)	17. <i>nalar</i> (being logical)	28. <i>teposliro</i> (celebrating tolerance)
7. <i>cancut taliwanda</i> (being prepared)	18. <i>ngugemi</i> (holding commitment)	29. <i>sumarah</i> (trusting-surrendering)
8. <i>citra wicita wicitra</i> (meaningful overt-covert)	19. <i>nyamleng</i> (creating enjoyment)	30. <i>mranani</i> (enthraling)
9. <i>duga prayoga</i> (calculated step)	20. <i>nyumangga</i> (promoting after you)	31. <i>mbombong-mbimbing</i> (encouraging)
10. <i>yatna yuwana</i>	21. <i>rukun</i> (promoting harmony)	32. <i>pas</i> (just right)
11. <i>kasugengan</i> (offering goodluck)	22. <i>samanunggal</i> (being at the same boat)	33. <i>nyedulur-mulur</i> (brotherhood and absolution/ forgiveness)

REFERENCES

- Ary, Donald et al, Introduction to Research in Education. 6th ed., Belmont: Wadsworth/Thomas Learning, 2002.
- Herujiyanto, Antonius, "Katresnan Criticism: The Nature And Who Does It", in LLT Journal, 2nd ed., vol. 9 (2), pp. 125-138, August 2006.
- Manlapaz, Edna Zapanta, Ma Eloisa Francisco, The New Anvil Guide to Research Paper Writing. Pasig City: Anvil Publishing, Inc, 2006.
- Mertler, Craig A., Action Research, 2nd ed., London: SAGE Publications Ltd, 2009.

BIO-DATA:

Antonius Herujiyanto has been teaching at Sanata Dharma University Yogyakarta, Indonesia, since 1987 where he is a faculty member of the Department of Language and Arts Education. He earned his master's degree in Literature (English) from ADMU in 1998. In 2000 he finished his Ph.D in Literature from De La Salle University. His works focus on Action Research, English Language Teaching, Cross Cuktural Understanding, the criticism of Indonesian literary works, journalism and research on Javanese culture. He has also been a correspondent for the BBC-M, Caversham, UK, since 2001.

A Grammatical Analysis of Code Switching Practices Employed by English Teachers of Senior High Schools in Yogyakarta

Margana

English Education Study Program

Faculty of Languages and Arts

Abstract

This study deals with a grammatical analysis of code switching (CS) practices employed by English teachers of senior high schools. It aims at documenting the forms of CS, the code-switched language elements, and the grammatical rules underlying the CS practices. The subjects of this research were 20 English teachers from 12 senior high schools from three regencies, namely Sleman, Bantul, and Yogyakarta. The data were collected with the utilization of observations and audio-recordings. The data were in the forms of utterances of CS from English to Indonesian or vice versa as practised by English teachers in classroom communications. Contexts of data were dialogues. The source of data was classroom communications. The data gathered from the fields were then analyzed with the use of the descriptive qualitative methods: the identity and distributional method.

In reference to the data analysis, some findings are made. *First*, CS from English to Indonesian or vice versa can be divided into two types, namely (1) inter-sentential CS and (2) intra-sentential CS. *Second*, in terms of the form of the lingual units in the intra-sentential CS, nouns, verbs, adjectives, adverbs, preposition and conjunctions are commonly inserted. Referring to the configuration of the constituents between the matrix and embedded language, nouns, verbs and prepositions show their flexibility and productivity to be attached by other constituents or to attach to the other words. *Third*, CS from English to Indonesian or vice versa in classroom communications utilized by English teachers of senior high schools is constrained by eight rules. They include (1) a linear order approach or equivalence constraint, (2) the level of the constituents, (3) a morpheme order principle, (4) a closed and open word constraint, (5) the relatedness of modified and modifying constituents, (6) the government constraint, (7) a functional head, and (8) sub-categorization.

Key words: code switching, grammatical analysis

A. Introduction

Studies in code-switching (hereafter CS) have been explored by a great number of scholars from a wide range of disciplines. For example, Gumperz in Romaine (1995) investigated CS from social and functional perspectives, where CS has been associated with social motivation and the practical use of CS in communication. Gal (1982) in Margana (2005) highlights that code-switching conveys a number of communicative intentions, or a mode of conversation, which encodes common purposes. Such code-switching practices become common phenomena in bilingualism community as interlocutors are familiar with two or more languages (Wardhaugh, 2010). Further, Margana (2012) claims that CS practices may occur in a natural and formal setting, which drives scholars to intensely investigate CS practices from different angles of analysis.

Considerable attention has currently been devoted to investigating CS in a formal setting, specifically in educational contexts which are analysed from a social and functional analysis. Many scholars have explored CS in classrooms and revealed that CS can be effective as a strategy in teaching and learning a second/foreign language (Cook, 1991; 2001 and Faltis, 1989). Faltis (1989) states that alternating one language with another can be employed as a bridge between the first language and the target language. In support of this statement, Cook (1991) highlights that CS can be considered as a communication strategy in English language teaching and learning in order to sustain the continuity of communication between English teachers and their students. To some extent, the use of CS in second/foreign language teaching is also beneficial, since it can be utilized to clarify points of grammars, to arrange tasks, to give instructions, to check comprehension, to sustain discipline, and to conduct classroom activities (Cook, 1989; 1991, 2001). Robinson and Long (1998) suggest that CS can be employed in classroom communication when FL teachers attempt to focus on form. In addition, CS can be a teacher technique to draw learners' attention to errors emerging during classroom activities. To conclude, the use of the first language in second/foreign language teaching is believed to be beneficial, especially in order to explain new concepts, to engage and maintain students' concentration & interest levels which encourage them to learn more, to lower stress levels, and to provide an atmosphere more conducive to language acquisition. Duran in Margana (2005) urges that CS can be utilized to facilitate students to develop their thinking and communication skills.

In relation to the above issue, CS practices in formal setting, for example, in English language teaching at senior high school are not randomly conducted (Margana, 2012). The CS practices could be analysed from linguistic perspectives focussing on the grammatical rules underlying CS practices by English teachers in classroom communication practices. Such linguistic analysis is very important to be conducted to theoretically justify that CS practices have particular pattern and rules. Added to this, the analysis of CS from linguistic

perspective can be fruitful to further gain the nature of the languages which are activated by English teachers in classroom communication. The analysis of CS from grammatical perspectives can be used to reveal the interdependency of the activated languages. This relies on the theory that every language performs its own flexibility to be attached to the other language (Margana, 2012). Belasi in Margana (2005) states that the linguistic constraints of CS are not applicable to any language. This suggests that the alternated language is different from one language to another language depending upon the nature of the activated language.

In reference to linguistic analysis, this study focuses on revealing the main issues of the linguistic angle, which primarily aims at describing the types of CS, the linguistic elements to be codeswitched, and the grammatical constraints of CS practices in classroom communication. Those three issues are urgent to be revealed for the sake of justifying that CS practices are not randomly conducted.

B. Theoretical Review

The study of CS is inseparable from bilingualism because CS is a phenomenon inherently associated with bilingualism. Therefore, before proceeding with a discussion of CS as the main issue in this study, the notion of bilingualism, needs to be well understood. Such an understanding of bilingualism can minimize differing interpretations of CS and prevent confusion in determining CS data in the form of utterances, which involve code-switching practices by English teachers of senior high schools in Yogyakarta during classroom communication as the central concern of this study.

A broader definition is offered by Weinreich in Romaine (1995) and Margana (2004), advocating that bilingualism is the practice of 'alternately using two languages'. The notion 'alternately using two languages' can refer to either minimum or maximum proficiency levels of bilinguals. This definition can be used to describe a developing bilingual who compensates for their insufficient proficiency in a language by code-switching from one language to the other and an advanced bilingual who has high proficiency and code-switches at will from one language to the other language, depending on communication circumstances, such as the context, situation, and the audience. However, such a definition is criticized by May et al. (2004:11), who state that Weinreich's definition does not restrict a certain level of 'a minimal or reasonable level of bilingual proficiency'. In addition, the definition is so expansive since it can refer to any person who can produce a meaningful expression in more than language or a person who has memorised a small number of words or phrases in foreign language without understanding them.

An advanced definition is offered by Oksaar as quoted by Margana (2004), who claims that bilingualism means freely using two languages as means of communication and alternating from one language to another language, if necessary. In support of the definition, Baetens-Beardsmore (1987) offers a practical definition for bilingualism, namely the use of two or more languages that may or may not be equal. In addition, Hornby in Margana (2004) asserts that bilingualism refers to various degrees of proficiency, from minimal competence to complete fluency in more than one language. The term *minimal* competence is interpreted as a bilingual ability to activate at least one of the macro-language skills such as speaking, listening, reading, and writing (Macnamara in Romaine, 1995). Further, he lists knowledge of language such as phonemes/graphemes, vocabulary, syntax, and semantics. According to him, one is considered as a bilingual if he/she has at least one of the language skills listed above.

In reference to the above definitions, this article takes the last definitions as proposed by Macnamara (1969), Oksaar (1970), and Baetens- Beardsmore (1987) as a framework, since those definitions are not too narrow or too broad. Also, the definitions are much more functional in nature which can encompass developing bilinguals who have not acquired complete or equal mastery of the used languages in classroom communication. In other words, the working definitions of bilingualism used in this study embody second or foreign language teachers or learners, who are semi-bilinguals, still in the process of potentially becoming am-bilinguals, for example English teachers of senior high schools in Yogyakarta. This has not been clearly and successfully accounted for in the early definitions of bilingualism. Hornberger (1989) states that most experts tend to agree with the latter definitions, since these definitions include beginning bilinguals who have inadequate communicative skills in the target language. The term *bilingualism* also includes multilingualism – more than two languages employed. In this case, English teachers in Indonesia, particularly in Yogyakarta, can be regarded as multi-linguals, since they use more than two languages, namely their native language (Javanese), the national language (*bahasa Indonesia*), and the target language (English).

2. The Notion of Code Switching

The definition of code-switching has been debated by many experts as it occurs in defining bilingualism. This leads to the fact that researchers have not agreed upon a definition of code-switching. As a result, many terms have been offered to define the interchangeable use of two or more languages. The terms include *language mixing*, *code-alternation*, *code-mixing*, and *code-switching*. The term *code* is used not only to refer to different languages but also language varieties in the same language which include dialects and styles within the language. Boztepe (2003) claims that the term *code* embodies a language or a dialect, as it is a relatively impartial conceptualisation of linguistic diversity.

Gardner-Chloros (1991) reemphasizes that code-switching emerges not only between languages, but also dialects in the same activated language. To avoid the contradiction of the terminology, Butler and Gutierrez (2003) prefer to use *language mixing*, which means the behaviour of bilinguals to code-alternate one language with another language. Further, they assert that language mixing includes *code-switching*, *code-mixing*, and *borrowing*.

Different from the above assertions, David (2003) states that code-mixing refers to the employment of two languages in turn, but it is only concerned with limited token use of the target language. Code-switching then deals with the use of more than one code, which can appear within a turn or within an utterance. Code alternation is defined as when the same person code-switches between turns. Auer (1995) prefers to use the term *code alternation* and *code insertion*. The former refers to the replacement of one language with another that usually occurs in longer stretches. The latter means the insertion of single word from one language to the structure of another language. Both terms appear to be two different processes but they have the same work of CS language models (Muysken, 1995, 2000). Kamwangamalu (1992) uses language alternation for code-switching and code-mixing. The former deals with alternating one language with another language across sentence boundaries, while the latter is within a sentence (Grosjean, 1982; Toress, 1989; and Brice, 2000). In addition to code-mixing, the forms of language alternation can be single words (nouns, pronouns, adjective, and verbs), phrases (noun phrases, preposition phrases, and alike), or sentences.

In line with the discussion above, a great number of scholars agree that CS is one phenomenon of the bilingualism issues characterized by the use of two or more languages alternated with one another in one conversation event (Myers-Scotton & Jake, 1997; Romaine, 1995; and Berthold, Mangubhai, Bortorowizs, 1997). Such alternation is a normal, common, and significant aspect of bilingual nature (Kamwangamalu, 1992; Pennington, 1995). Poplack (1980, 1985) adds the alternation of two or more languages in discourse often with no change of participant or topic. In a more detailed sense, Gumperz in Margana (2004) defines CS as 'the juxtaposition within the same speech exchange of passages of speech belonging to two different grammatical systems or subsystems'. The code-switched items are prosodically, semantically, and grammatically tied in a single communication activity (Romaine, 1995).

Another definition is offered by Richards et al. (1992), stating that CS is a switch by a speaker from one language to another language. The switch can be in the middle of discourse or even within a sentence. Likewise, Omar (1993) defines code-switching as alternating one language with another in a communication in a particular situation by a particular speaker. Jariah (2003) contends that code-switching from one language to another is not merely engaging with equal proficiency, but a bilingual speaker often code-switches from one language to another to resolve language difficulty. In other words, a bilingual

speaker who has limited proficiency tends to use code-switching by repeating and reformulating utterances from one language to another (David, 1999, 2001). Further, David (2002) claims that code-switching employed by Malaysian Sindhi families is used as a communicative strategy to compensate for insufficient linguistic mastery. Kasper (1997) also contends that CS can be applied as a strategy for compensating inadequate knowledge of linguistic items. In support of this statement, Pillay and Wha (1997) assert that since second/foreign language learners are in the process of becoming bilinguals, they attempt to expand their skills and strategies (i.e. code-switching) when they are involved in second/foreign language teaching and learning.

As previously discussed, a myriad of terms are proposed in the bilingualism literature to describe the use of two or more languages alternated one with another such as *language switching*, *language insertion*, *language alternation*, *language mixing*, *code-mixing*, *code-alternation*, *code changing*, and *code-switching*. Given that such terms have not been standardized in the literature, this study, therefore, reserves the term *code-switching* because it embodies code-mixing which is equivalent to intra-sentential CS (Romaine, 1995; Baker, 2001; May et al., 2004). Milroy and Muysken (1995) also prefer to use the term CS which embodies inter-sentential and intra-sentential switches. This position taken here is that the term code-switching is both adequate and appropriate to the description of CS practices in senior high schools.

For the purpose of this study, the use of English alternated with Indonesian (or Javanese) or vice versa by English teachers who do not have equal proficiency in both English and Indonesian, can be classified as code-switching activities. The term *code-switching* used in this study is defined in the broader sense of its conventional definition, since English teachers involve alternation between languages no matter whether they repeat, reformulate or literally translate utterances from one language to another. They may switch at any point of the sentence, and between sentences or within a sentence.

In terms of its type, Romaine (1995) divides CS into three: (1) inter-sentential, (2) intra-sentential and (3) tag switching. The term *inter-sentential code-switching* is defined as alternating some linguistic elements from one language to another language across sentence boundaries (Valdés-Fallis, 1978; Poplack, 1980; Berk-Seligson, 1986; Romaine, 1995; Bhatia and Ritchie, 1996). Examples of inter-sentential code-switching are presented as follows as shown in the italicized forms.:

(01) I am glad you came. *Como estás?* (Spanish/English)

'I'm so glad you came. *How are you?*' (Koziol, 2000: 30)

(02) *Si, la pobre.* What's she going to do now?

'Yes, poor thing. What's she going to do now?' (Koziol, 2000: 57)

Intra-sentential CS occurs when the linguistic items are alternated within a clause or sentence from one language to another (Poplack, 1980; Berk-Seligson, 1986; Romaine, 1995; Bhatia and Ritchie, 1996; MacSwan, 1997, 1999). The linguistic items can be in the form of words, phrases, and clauses. Berk-Seligson (1986), for example, identifies possible linguistic items in Hebrew/Spanish switches. They include nouns, noun phrases, verbs, verb phrases, pronouns, adjectives, adverbs, adverbial phrases, subordinate conjunctions, coordinate conjunctions, prepositional phrases, interrogatives, subordinate clauses, coordinate clauses, and clause markers. Examples of intra-sentential code-switching are presented as follows:

(03) Maria, *mi mejor amiga*, just got back from Jamaica.

‘Maria, *my best friend*, just got back from Jamaica.’

(04) You are the greatest mother *en todo el mundo!*

‘You are the greatest mother *in the whole world!*’ (Spanish/English)

(Koziol, 2000: 59)

Tag switching refers to the insertion of a tag or parenthetical in one language into an expression in the other language (Romaine, 1989, 1995); Poplack (1980) names such a code-switching type as emblematic switching, since it functions as a trademark of the bilingual character of an otherwise monolingual sentence. Tag switching can be part of inter-sentential or intra-sentential CS depending on the form of linguistic items alternated. When the linguistic item is alternated across clause or sentence, it is included in the inter-sentential type; on the other hand, when the alternation lies within a clause or sentence, this is called intra-sentential CS. Examples of tag switching are presented as follows.

(05) He wants one thousand no less *la*. (Chinese Tag/English)

‘He wants one thousand no less, does he?’

(Bhatia & Ritchie, 1996)

(06) *I mean, unconsciously, subconsciously*, kḏri jane €, **you know** [English tag], pḏr. *I wish, you know*, kḏ mḏ *pure Punjabi bol sḏka*.

‘I mean, unconsciously, subconsciously, we keep doing it, you know, but I wish, you know, that I could speak pure Punjabi.’ (English/Punjabi) (Romaine, 1989:112)

In relation to intra-sentential CS, Brice and Brice (2000) conducted research on language use in a classroom for Spanish and English bilinguals. The results of their study reveal seven forms of grammatical elements in the intra-sentential type of CS. The grammatical elements include (1) noun, (2) verb phrase, (3) verb, (4) preposition phrase, (5) adjective, (6) adverb, and (7) interjection. Of the seven grammatical elements, the noun was

the most common element in intra-sentential CS. Other scholars also documented the order of syntactic functions of CS across studies. The results show that the syntactic classes: noun, verb, preposition, adjective, and adverbs, tend to always occur in the intra-sentential code-switching across studies. Of the five grammatical elements, the noun is the most common in the intra-sentential type as shown in the following table.

Rank	Pfaff (1977)	Poplack (1980)	Zentella (1997)	Brice (2000)
1.	Noun	Single Noun	Object/Subject Noun	Object/Subject Noun
2.	Verb	Interjection	Adverb	Verb Phrase
3.	Adjective	Noun Phrase	Preposition Phrase	Prepositional Phrases/Verb
4.	Preposition	Adverb	Verb Phrase/Adjective	Adjective/Adverb
5.	Verb Phrase	Verb Phrase	Verb	Interjection
6.		Verb		
7.		Adjective		

Source: Brice & Brice, 2002:6

Table 1 The order of Syntactic Functions of Intra-sentential CS

3. Some Linguistics Rules underlying CS practices

It is mentioned earlier that CS practices in any setting (natural and formal setting) are not random in nature in the sense that CS is constrained by a particular rule which can be explained linguistically. In relation to this, Other scholars have focused on the linguistic factors (Myers-Scotton, 1992;) MacSwan, 1997, Margana, 2012). The results of those investigations formulate some various linguistic aspects constraining CS occurrence. Poplack (1980: 586), for example, suggests two constraints on CS: (1) 'the free morpheme constraint and (2) the equivalence constraint'. The former prevents switching between a bound morpheme and a lexical form, while the latter tend to arise at points where it does not break the syntactic rules of either language. Myers-Scotton (1992, 1993) proposes a

matrix Language Model Frame, stating that in CS there is a dominant language, which constrains the outcome in the subordinate language. Further, she offers three principles in relation to the grammatical constraints. The three principles are (1) *The Morpheme Order Principle*, (2) *The System Morpheme Principle*, and (3) *The Blocking Hypothesis*. The first principle suggests that the matrix language (ML) influences the sequence of the components in ML + EL (embedded language) constituents. The second principle formulates that system morphemes, for example, articles, inflections, and prepositions can only be drawn from the matrix language. The third principle states that any EL content morpheme (nouns, verbs, etc) will be blocked when it is not congruent with the ML constituents. More recently, Lotfabbadi (2002) has documented six approaches to CS constraints. Those are (1) linear order approach, (2) sub-categorization model, (3) theory-based models, (4) matrix language approach, (5) no specific model of constraints (no specific rules or principles lying outside the grammars of the languages involved), and (6) a minimalist approach. Those approaches are taken as a framework of the analysis of the CS practices by English teachers of senior high schools during classroom communications.

C. Research Methods

This study is categorised as a descriptive qualitative study on the grounds that it is aimed at describing CS practices by English teachers of senior high schools in reference to the data gathered from the fields utilising a grammatical analysis which focuses on three primary issues, namely (1) types of CS, (2) the code-switched linguistic elements, and (3) the underlying grammatical rules of CS. The subjects of this research were 20 English teachers from 12 senior high schools from three regencies, namely Sleman, Bantul, and Yogyakarta. The data were collected with the utilization of observations and audio-recordings. The data were in the forms of utterances of CS from English to Indonesian or vice versa as practised by English teachers in classroom communications. Contexts of data were dialogues. The source of data was classroom communications. The data gathered from the fields were then analyzed with the use of the descriptive qualitative methods: the identity and distributional method.

D. Findings and Discussion

There are three main issues targeted in this study, namely (1) types of CS, (2) the forms of the lingual units which are code-switched in intra-sentential CS, and (3) the grammatical rules underlying CS practices by English teachers of senior high schools in

Yogyakarta. Each is presented below with regard to the empirical study gathered from the field.

1. Types of CS practices

In reference to the data analysis, some findings are made. CS from English to Indonesian or vice versa can be divided into two types, namely (1) inter-sentential CS and (2) intra-sentential CS. The former refers to code switching across sentence boundary while the latter occurs within sentence. The following presents each type of CS as practiced by English teachers of senior high schools when they were involved in the process of English language teaching and learning.

(07) T : *Ya, Menggambarkan tentang apa ini ('Yes, what does it describe')* *Okay, do you find the difficult words? **Apakah anda menemukan kata-kata sulit ('Did you find difficult words')**?* Did you write them in the exercise book? Okay, look at in your book.

(SA/L/2/X/APRIL/2009)

(08) G : One of you, you may choose one of them to answer. From this group. If you understand the question, actually you will answer the question easier. ***Kalau anak-anak sudah paham maksud pertanyaan itu, pastinya bisa cepat menjawab ('If you have already understood the question, you can answer correctly')***. Okay, that is the second question. Do you agree with your friend's answer? Okay, you may write your own answer. Write the point of each paragraph.

(S/P/1/XI/APRIL/2009)

Data (07) shows that the English teacher code-switched from Indonesian language (IL) to English language (EL) or vice versa across sentence boundaries as shown in bold forms. Data (08) also performed that English teacher code-switched from EL to IL across sentences boundary. Those examples are called inter-sentential CS. This suggests that such a type of CS is applied by English teachers of senior high schools when they are involved in the process of English language teaching.

Beside inter-sentential CS, intra-sentential CS is also practised by English teachers when they are involved in classroom communication practices as exemplified below.

(09) T : Many problem seem to make city so dangerous from time to time. Is that right? Do you agree with ***jawaban Burhan tadi ('Burhan's answer')***? Who has different opinion? Who has different opinion?

(S/P/3/XI/APRIL/2009)

- (10) T : *Kemudian di samping itu, kita juga mempunyai* (Then, beside that we also have') **detective story** *itu juga* ('that also') narrative. *Kemudian* ('Then') **short story**, *pernah membaca* (ever read) **love story**? *Indah sering baca* (Indah often reads)? *Biasanya mengharukan ya atau* ('Usually touching yes or') **happy ending**. *Ada yang pernah membaca mungkin judulnya apa* ('Is there anyone who often reads, probably what is the title')?
(NK/P/1/XI/MEI/2009)

In reference to the above data, English teachers inserted an Indonesian phrase into an English sentence construction as performed in Data (09) and inserted some English phrases in Indonesian constructions as shown in Data (10). The type of CS practices is called intra-sentential CS on the grounds that the insertion occurs within sentence boundary.

2. The Forms of Lingual Units in Intra-sentential

In terms of the form of the lingual units in intra-sentential CS, there are some words which are commonly inserted. They include (1) nouns, (2) verbs, (3) adjectives, (4) adverbs, (5) preposition and (6) conjunctions. Each word category is discussed below in reference to the empirical data obtained from the field. Look at the following data.

- (11) G : You know that this kind of phenomenon, reality show, in our television is getting, what is it? Contagious program, right? *Jadi* ('so'), something like **kecanduan** ('addiction') ya. *So, some TV stations tend to air this program.*
(C/P/1/X/APRIL/2009)
- (12) G : *Jadi kalau merasa sudah suka, naksir, langsung* ('So, if you feel adore someone, you should') **express** *juga* (too). Read a story which makes you realize that love should be expressed. (NK/P/1/XI/MEI/2009)
- (13) G : *Kemarin apa perintahnya* ('What was instruction yesterday')? *Perintahnya kan harus* ('The instruction should be') **exciting**. (G/P/3/XI/MEI/2009)
- (14) G : Forty nine. He's said to be too lazy to study. "Bla bla bla" he often failed the test. However, because of, whenever, as a matter of fact, or consequently? Consequently. Yang mana ('Which one')? Ya, C. **Konsekuensinya** ('Consequently'), he often failed the test.
(B/P/1/X/APRIL/200)

The above data show that English teachers of senior high schools code-switched from EL to IL or vice versa by inserting lexical words in the form of noun as in Data (11), verb as in Data (12), adjective as in Data (13), and adverb as in Data (14). The code-switched lexical items were performed in bold forms. This suggests that all lexical items are potentially inserted in the matrix language.

In reference to the data analysis, the grammatical words in the form of prepositions and conjunctions of EL and IL are potentially inserted in the matrix language. The following presents the insertion of the grammatical words in intra-sentential CS.

- (15) G : Write on the whiteboard please. One of you, environment. *Maksudnya dalam bahasa Indonesia* ('The meaning of the word in bahasa Indonesia') is *lingkungan* ('environment'). For example, *lingkungan at SMA Ngaglik* ('environment at SMA Ngaglik'). **About** *lingkungan di sekitarnya* (environment). For example in your environment. *Sebelah sana, sebelah barat sekolahan kita ada apa itu* ('Over there, the western of our school, what is that')? (SA/L/2/X/APRIL/2009)
- (15) G : Illegal reason. Do you know about point? *Ya* ('Yes'), that's the function of the point in argument paragraph, as the main idea, **sebagai** ('as') main idea. And then, you must know that in each point of argument paragraph. (S/P/1/XI/APRIL/2009)
- (17) G : *Ya, kolam*('Yes, pond') *pond*. **Then**, yang di sebelah barat ('in the western side')? (SA/L/2/X/APRIL/2009)
- (18) G : *Ya* ('Yes'), they both were died. **Lalu** ('Then') what is the next event? (E/P/2/X/FEB/2012)

The above data show that English teachers of senior high schools code-switched from EL to IL or vice versa by inserting grammatical words in the form of an EL preposition in Data (15) and an IL preposition in Data (16). Added to this, the insertion of an EL conjunction in Data (17) and an IL conjunction in Data (18) was also found. This suggests that grammatical items in the form of preposition and conjunction of IL and EL are potentially inserted in the matrix language.

3. Grammatical Rules Underlying CS

CS from English to Indonesian or vice versa in classroom communications utilized by English teachers of senior high schools is constrained by eight rules. They include (1) a linear order approach or equivalence constraint, (2) the level of the constituents, (3) a morpheme

order principle, (4) a closed and open word constraint, (5) the relatedness of modified and modifying constituents, (6) the government constraint, (7) a functional head, and (8) sub-categorisation. Each is presented below.

a. Linier order approach or equivalence constraint

This grammatical rule states that CS occurs at points where the surface structures of the activated languages (EL and IL) map onto each other as exemplified in the following data

(19) G : Okay, excellent, the goat rolled on the ground ***berguling guling di atas tanah*** ('rolling on the ground') to try to kill the ants ***untuk membunuh semut*** ('to kill the ants'). Okay, now we come to number six. How did the story end? Group six, *bagaimana cerita itu berakhir* (how is the end of the story)? The story sad ending or happy ending?

(EA/L/1/XI/AGUSTUS/2008)

(20) G : *Kalau anda fikir belum cukup dan masih ada yang perlu ditanyakan* ('If you think that you still have any question'), you can ask ('Anda boleh bertanya'), ya.

(M/L/1/X/APRIL/2009)

Data (19) and (20) perform that the insertion of the IL items map onto each other. In other words, the alternation of the construction does not violate a syntactic rule of IL and EL. This suggests that CS practices are ruled by linier order approach.

b. The level of the constituents

The second grammatical rule of CS is that the higher the construction is, the more often it is code-switched. This implies that English teachers tend to take inter-sentential code-switching rather than intra-sentential one on the grounds that the level of clauses or sentences are higher than that of words or phrases. The following present the examples of the constraint of the level of the constituents.

(21) G : What do you call paragraph 3? That is argument paragraph. I call paragraph 3 recommendation. What do you call paragraph 3? ***Tapi jarang ditanyakan ya pertanyaan seperti itu*** ('But such question is rarely asked'). But I know what you mean. And then, next Mahmud.

(S/P/2/XI/APRIL/2009)

(22) G : So, you agree if the main idea of the fourth paragraph is the exploitation, the exploitation of the sea. ***Kalau gitu, kalau itu diringkas dengan kata eksploitasi yang berlebihan untuk laut*** ('If so, that should be summarised

with the sue of the word of the exceeding sea exploitation'). Do you agree? Exploitation of the sea. Do you agree? **Kalau diringkas jadi kerugian laut** ('if it is summarised, it deals with the damage of the sea'). **Jadi intinya itu ada eksploitasi laut** ('So the point is that there is sea exploitation'). **Intinya itu** ('That is the point'). And the last question. There are two answers here. **Ada 2 jawaban disini** ('There are two answers here'). **Angga, gimana Ga** ('Angga, what do you think, Ga')? How do you think? **Ini bisa dihapus tidak** ('Can I erase this one')?

(K/P/2/XI/APRIL/2009)

c. Morpheme order principle

The third grammatical rule of CS is morpheme order principle. According this rule, the matrix language determines the surface morpheme order. This suggests that the dominant language determines what items are alternated with the items of the embedded language as exemplified in the following data.

(23) G : *They want **menyeberangi** ('cross') the border. The passengers want to **menyeberangi** ('cross') the border. To avoid the police, maybe there is something wrong so they are going around. To avoid, to avoid, to avoid the police.*
(IS/P/1/XI/MEI/2009)

(24) G : *Jadi kalau merasa sudah suka, naksir, langsung ('So, if you feel like or adore someone, directly') **express juga** ('too'). Read a story which makes you realize that love should be expressed. Setelah membaca, oo...berarti kalau suka dan cinta itu memang harus diekspresikan ('After reading, it means if you like and love you have to express it').*
(NK/P/1/XI/MEI/2009)

In reference to Data (23), the insertion of *menyeberangi* is determined by the construction of the matrix language *they want ... the border*. The same case happens in Data (24) which shows that the word **express** is determined by the construction of *Jadi kalau merasa sudah suka, naksir, langsung ('So, if you feel like or adore someone, directly')* as the matrix language.

d. Closed and open word constraint

The fourth grammatical rule of CS states that open and closed words are potentially code-switched. However, the closed words are only limited to particular items such as

preposition, conjunctions, and the like except article and interjections. The following presents the examples

(25) G : *Mengijinkan/memperbolehkan* ('Giving a permission'). **Encourage** apa ('what')?

S : *Menyemangati* ('encouraging').

G : *Enlarge* (? **Large** artinya apa ('what is the meaning of large?')..luas jadi ('large, so') **enlarge** artinya memperluas ('means enlarging'). **Rich** artinya apa (what is the meaning of rich)? *Kaya..jadi* ('rich..so') **enrich** artinya ('means..')...?

(E/L/1/XII/APRIL/2009)

(26) G : **So** *paragraf satu, dua sampai paragraf empat.* ('paragraph one, two till paragraph four') *Jadi cerita nya seperti itu* ('So, the story is like that').

(SA/L/2/X/APRIL/2009)

(27) G : *Ya, kolam* (Yes, pond') *pond.* **Then** *yang di sebelah barat* (those who sit at western side) the? *What is it?*

(SA/L/2/X/APRIL/2009)

e. Relatedness of modified and modifying constituents

This grammatical rule states that there is a closed relationship between modified and modifying constituents. This suggests that the constituent of the modified and modifying take the same code either EL or IL. The following presents the example of the above grammatical rule.

(28) G : *Iya konsepnya kan tidak hanya melihat saja kan* (Yes, the concept . *Okay* (Baiklah'), **any other questions** *ada pertanyaan lagi* ('Is there any question')? *Rekomendasinya mungkin itu belum ada tanyakan* (The recommendation probably has not been asked').

(M/L/1/X/APRIL/2009)

(29) G : *Ya* ('Yes'), supporting sentences or **kalimat pendukung atau penjelas** ('supporting or clarifying sentence'). *Jadi* ('So'), the point here as the main idea and then here as supporting sentences. And then, recommendation, the last is recommendation. Consist of what?

S : *Statement.*

(S/P/1/XI/APRIL/2009)

In reference to Data (28), the insertion of the construction of *any other questions* (EL) take the same code in terms of pre-modifying constituent *any other* and **the headword (questions)** as a modified constituent. The code-switchers do not alternate the word *other* with *yang lain*. In other words, the construction of *any yang lain questions* is not found in CS. The same case occurs in Data (29), the construction of *kalimat pendukung atau penjelas* takes the same code (IL). Therefore, if there is construction of *sentence pendukung atau penjelas* or *kalimat* supporting or explaining, the construction breaks the fifth grammatical rule.

f. Government constraint

This grammatical rule states that CS practices are constrained by the dominance of the matrix language. In other words, the matrix language plays an important role to determine the CS practices on the grounds that the relation between a lexical and its syntactic environment plays an important role of the CS practices. The following presents the example of the government constraint in reference to the gathered data.

- (30) G : *Apakah mereka tidak cantik ('Are they not beautiful')? They are very beautiful karena ya paling tidak setiap minggu itu dia kesalon (because yes at least every week she goes to saloon) ya ('yes') facial ya ('yes') cream bath. Makanya hati-hati yang cewek-cewek itu ya, semester 5 dan 6 mulai membuka pintu hatinya jangan pintu rumah ('So, be careful those girls who are in semester 5 and 6, you should open your heart not open the door of your house'). Banyak kasus ya dikota besar seperti itu ('In the big cities, such cases happen').* (SA/L/3/X/APRIL/2009)

Data (30) performs that IL determines the CS practices from IL to EL as IL serves as the matrix language. The construction of *They are very beautiful* is governed by the previous construction. In addition, the insertion of the forms *facial* and *cream bath* are determined by the matrix language.

g. Functional head

The seventh grammatical rule of CS is called functional head. This rule states that CS between the quantifier and the headword breaks the rule of CS. In other words, it is impossible to insert IL between the English quantifier or qualifier and headword of the phrase as exemplified below.

- (31) G : **The first paragraph. Good!** Dari ('From') **the first paragraph** itu kan biasanya ada latar belakangnya ('usually there is the background'). **Sebab** ('Because')?
 S : Akibat ('Effect').
 G :. **Nah, sekarang** (Alright, now') **the second paragraph** ini masuk dalam kategori apa ('what category does it belong to')? **Source** atau ('or') **background**?

(K/P/4/X/MEI/2009)

- (32) G : No. General? General classification. **Ya yang kedua** ('Yes, the second')? Identification. **Nah, di antara kalian mungkin mengeditnya terlalu banyak sehingga** ('Okay, you probably edit it too much.) **some** technical terms.

(G/P/3/XI/MEI/2009)

In reference to Data (31) and (32), English teachers of senior high schools do not code-switch from English to Indonesian or vice versa between qualifier or qualifier and the headword. Therefore, the construction of ***the kedua paragraph** and ***some teknis terms** are not found in CS practices as both break the rule of the functional head.

h. Sub-categorisation.

This grammatical rule states that any items are possible to be code-switched as CS practices do not violate the sub-categorisation. For example, adjective and noun serve as post-nominal in Indonesian noun phrases. Therefore, those items can be code-switched as exemplified below.

- (33) G : **Kalau** (If') **present itu ('that')** mengalami **perubahan tenses** tidak ('change the tenses or not')? Mengalami **perubahan tenses** ('change the tenses')? **Tidak** ('No')? **Tidak** ('No')? (B/P/4/X/APRIL/2009)

- (34) G : **Jadi, tiap-tiap** ('So, each') point **dalam paragraf** ('in paragraph') **argument ini** merupakan bagian dari **apanya** ('this is part of what') **from paragraph thesis**? (S/P/1/XI/APRIL/2009)

The construction of **perubahan tenses** in Data (33) consists of two constituents, namely *perubahan* (IL) and *tenses* (EL). It is tolerated as it meets the rule of sub-categorisation. In this case, the word **tenses** serves as post-nominal or modifying constituent. The same case happens on Data (34) in the construction *paragraf argument* which consists of *paragraf* (IL) as the modified constituent and **argument (EL)** as a modifying constituent.

With regard to the analysis of the grammatical rules which underlie the CS practices as discussed above, it is evident that CS practices by English teachers of senior high schools are not random in nature. Those CS practices can linguistically explained in terms of the grammatical rules.

E. Conclusion

In reference to the data analysis, some findings are made. *First*, CS from English to Indonesian or vice versa can be divided into two types, namely (1) inter-sentential CS and (2) intra-sentential CS. *Second*, in terms of the form of the lingual units in the intra-sentential CS, nouns, verbs, adjectives, adverbs, preposition and conjunctions are commonly inserted. Referring to the configuration of the constituents between the matrix and embedded language, nouns, verbs and prepositions show their flexibility and productivity to be attached by other constituents or to attach to the other words. *Third*, CS from English to Indonesian or vice versa in classroom communications utilized by English teachers of senior high schools is constrained by eight rules. They include (1) a linier order approach or equivalence constraint, (2) the level of the constituents, (3) a morpheme order principle, (4) a closed and open word constraint, (5) the relatedness of modified and modifying constituents, (6) the government constraint, (7) a functional head, and (8) sub-categorization.

References

- Auer, J. C. P. (1995). The pragmatics of code-switching: a sequential approach. In L. Milroy and P. Muysken (Ed.) *One speaker, two languages: Cross-disciplinary perspectives on code-switching* (pp. 115-135). Cambridge: University Press
- Baetens-Beardsmore, H. (1987). *Bilingualism: Basic principles*. England: Multilingual Matters.
- Baker, C. (2001). *Foundations of bilingual education and bilingualism*. Clevedon: Multilingual Matters.
- Berk-Seligson, S. (1986). Linguistic constraints on intra-sentential code-switching: A study of Spanish/Hebrew bilingualism. *Language in Society*, 15 (3), 313-348.
- Berk-Seligson, S. (1987). The intersection of testimony styles in interpreted judicial proceedings: Pragmatic alterations in Spanish testimony. *Linguistics* 25 (6), 1087-1125.
- Berthold, M., Mangubhai, F., & Batorowicz, K. (1997). *Bilingualism & Multiculturalism: Study Book*. Distance Education Centre, University of Southern Queensland: Toowoomba, QLD.
- Bhatia T.K. & Ritchie, W. (1989). Bilinguals' creativity and syntactic theory : evidence for emerging grammer. *World Englishes*, 8 (3), 265-276

- Bhatia, T.K., & Ritchie, W.C. (1996). Bilingual language mixing, universal grammar, and second language acquisition. In W. C. Ritchie and Tej K. Bhatia (Ed.), *Handbook of Second Language Acquisition* (pp.627-688). San Diego: Academic Press.
- Boztepe, E. (2003). Issues in codeswitching: Competing theories and model. Teachers college, Columbia University.
- Brice, A. (2000). Code-switching and code mixing in the ESL classroom: A study of pragmatic and syntactic features. *Journal of the Speech Pathology Association of Australia*, 20 (1), 19-28.
- Brice, A., & Brice, R. (2002). Language in the classroom: Comparisons of four bilingual environments. Retrieved on October 16, 2004 from <http://www.asha.ucf.edu/Southafrica2000.html>.
- Brice, A., & Roseberry-McKibbin, C. (1999). Turning frustration into success for English language learners. *Educational Leadership*, 56 (7), 53-55.
- Butler, Y. G., & Gutierrez, M. B. (2003). Learning climates: A case of 4th grade students in an English-only district in California. *Bilingual Research Journal*, 27 (2), 207-224.
- Cook, V. (1989). Reciprocal language teaching: Another alternative. *Modern English Teacher*, 16 (3\4), 48-53.
- Cook, V. (1991). *Second language learning and language teaching*. Melbourne: Edward Arnold/ Hodder Headline Group.
- Cook, V. (2001). Using the first language in the classroom? *Canadian Modern Language Review*, 57, 402-423.
- David, M.K. (2003). Role and functions of code-switching in Malaysian courtrooms. *Multilingua*, 22, 5-20.
- Faltis, C. J. (1989). Code-switching and bilingual schooling: An examination of Jacobson's new concurrent approach. *Journal of Multilingual and Multicultural Development*, 10 (2), 117-127.
- Faltis, C.J. (1996). Learning to teach content bilingually in a middle school bilingual classroom. *Bilingual Research Journal*, 20 (1), 29-44.
- Faltis C.J. (1999). Introduction: Creating a new history. In C. Faltis & P. Wolfe (Ed.), *So much to say: Adolescents, bilingualism and ESL in the secondary school* (pp. 1-9). New York: Teachers College Press.
- Gal, S. (1979). *Language shift: Social determinants of linguistic change in bilingual Austria*. New York: Academic Press
- Gardner-Chloros, P. (1991). *Language selection and switching in Strasbourg*. Oxford: Oxford University Press.
- Grosjean, F. (1989). Neurolinguists, beware! The bilingual is not two monolinguals in one person. *Brain and Language*, 36, 3-15

- Grosjean, F. (1995). A psycholinguistic approach to code-switching: The recognition of guest words by bilinguals. In L. Milroy and P. Muysken (Eds), *One speaker, two languages: Cross-disciplinary perspectives on codeswitching* (pp. 259-275). Cambridge, UK: Cambridge University Press.
- Hornberger, N. (1989). Continua of bi-literacy. *Review of Educational Research*, 59, 271-296.
- Jariah, M. J. (2003). Code-switching for power wielding: Inter-gender discourse at the workplace. *Multilingua*, 22, 41-57.
- Kamwangamalu, N.M. (1992). Mixers and mixing. English across cultures. *World Englishes*, 11 (2/3), 173- 181.
- Koziol, J. M. (2000). Code-switching between Spanish and English in contemporary American society. Retrieved on August 30, 2012 from <http://www.smcm.edu/aldiv/ilc/pdfdocs/koziol.pdf>.
- Lotfabbadi, N.L. (2002). Disagreement in agreement: a study of grammatical aspects of codes-witching in Swedish/Persian bilingual speech. Doctorial dissertation. Stockholm: Department of Linguistics, Stockholm University.
- Macnamara, J. (1967): The bilingual's linguistic performance: A psychological overview. *Journal of Social Issues*, 23, 59-77.
- Macnamara, J. (1969), How can one measure the extent of a person's bilingual proficiency? In *Description and measurement of bilingualism*, ed. L. Kelly. Toronto: University of Toronto Press.
- MacSwan, J. (1997). A minimalist approach to intra-sentential code switching: Spanish-Nahuatl bilingualism in central Mexico. *Doctorial Dissertation*. University of California, Los Angeles. Retrieved on August 30, 2004 from <http://www publica.asu.edu/~macswan/bilingualism.pdf>.
- MacSwan, J. (1999). *A Minimalist Approach to Intra-sentential Code Switching*. New York: Garland Publishing.
- Margana. (2004). Functions of Codeswitching in Classroom Communication. Proceedings in International Conference hosted by National University of Singapore.
- Margana. (2012). Codeswitching dalam Pembelajaran Bahasa Inggris di SMA. A Disertasi Yogyakarta: UGM.
- May, S., Hill, R., & Tiakiwai, S. (2004). *Bilingual/immersion education: Indicators of good practice*. Final Report to the Ministry of Education, New Zealand.
- Milroy, L. and Muysken, P. (Eds.) (1995). *One speaker, two languages: Cross-disciplinary perspective on code-switching*. Cambridge: Cambridge University Press.
- Muysken, P. (1995). Code-switching and grammatical theory. In L. Milroy & P. Muysken, (Ed.), *One speaker, two languages, cross-disciplinary perspectives on code-switching* (pp. 177-198). Cambridge, UK: Cambridge University Press.

- Muysken, P. (2000). *Bilingual speech: A typology of code-mixing*. Cambridge: Cambridge University Press.
- Myers-Scotton, C., & Jake, J.L. (1997). Codeswitching and compromise strategies: Implications for lexical structure. *International Journal of Bilingualism*, 1, 25-39.
- Oksaar, E. (1970). Bilingualism . In T.A. Sebeok, (Ed.), *Current Trends in Linguistics* (pp.437-449). Den Haag: Linguistics in Western Europe.
- Omar, Asmah Haji. (1993). *Language and society in Malaysia*. Kuala Lumpur: Dewan Bahasa dan Pustaka.
- Pennington, M. C. (1995). Eight case studies of classroom discourse in the Hong Kong secondary English class. *Research Report Number 42*. Hong Kong Department of English. City University of Hong Kong.
- Poplack, S. (1980). Sometimes I'll start a sentence in Spanish y termino en Español: Toward a typology of code-switching. *Linguistics*, 18, 581-618.
- Poplack, S. (1981). Syntactic Structures and Social Functions of Code-switching. In R.P. Duran (Ed.), *Latino Language and Communicative Behaviour* (pp. 169-84). Norwood, NJ: Ablex.
- Wardhaugh, R. (2010). *An Introduction to Sociolinguistics*. Massachusetts: Blackwell Publishers.

BIG BOOK, A TEACHING ALTERNATIVE FOR IMPROVING CHILDREN'S READING READINESS IN KINDERGARTEN

SRI TATMININGSIH¹

Academic Staff of Faculty of Teaching and Education Sciences, Universitas Terbuka

Cabe Raya Street, Pondok Cabe, Tangerang 15418
tatmi@ut.ac.id

Abstract

This paper is a research finding aimed at implementing a learning model that used a big book model for improving children's reading readiness in kindergarten. This research was employed action research model from Kemmis and Mc Taggart which divide the action into some cycles and every cycle consists of some steps namely planning, action, observation, and reflection. This research method is very appropriate for implementing a program aimed at improving a program, applying a method or a new teaching style or approach, developing a teacher's career, and changing an attitude or behavior. The focus of this research was the use of big book approach in an A3 group children. It was conducted in four weeks. At the end of the actions, based on researcher's observations and field executers and inter raters, it can be concluded that all children have a good improvement in their reading readiness. Even though the improvement occurred in some various ranges between 6.7 and 16.7 points, the children have performed expected indicators of reading readiness. The conclusion is also strengthened by the calculation of statistical analysis with t-test showed that there is a significant difference (p -value $< 1\%$) at 0,348 point. It means that there is an improvement of assessment results of the children's reading readiness before and after the actions. Therefore, it can be said that the actions have succeeded in improving the children's reading readiness and the achievement of the program satisfies the stated aims.

Key words: big book, Children's Reading Readiness in Kindergarten

Introduction

Based on the author's view, generally the battle of opinion about the allowness of teaching reading and writing in kindergarten is still going on.

Some of the experts say that in kindergarten teaching reading and writing is forbidden because the teaching materials are insufficient for the students in this age.

Some other experts including the parents of the students say that reading and writing should be taught to the kindergarten students because in fact to enroll to a primary school the students must be able to read and write;

This pro and con has created a situation in which most of kindergarten teachers teach reading and writing to their students without a permission of their supervisors and when the supervisors come they pretend not to teach reading and writing and they hide their teaching materials.

To bridge this pro and con, there is an alternative way that can be done by the teachers that is using big book. Big book is a picture book chosen to be enlarged because it has a special quality (can involve students' attention quickly) (Karges, 1990). Big book is not just a reading material because it contains a reading strategy in which whole language plays an important role. By using Big book students will be able to share their knowledge about words and sentences among them.

Based on this situation, this research was designed in using an action research way to apply Big book in kindergarten classes in order to improve the students' reading readiness. The result of this research will be useful to widen teachers and parents' view about the sufficient simulant in improving students' reading readiness.

METHODOLOGY

Design, Location, and Time

The research about Big Book for improving reading readiness is done by using action research method. Action research is a research about, for, and by certain society by using direct interaction, participation, and collaboration between the research and the targeted society and in this case is teacher-teacher. Action research is also one of strategies to solve the problem by using actual activities and the development process of skill in detecting and solving the problem. In the process, all groups involved have to support each other and have

to be completed with facts and developing the analysis skill. In the practice, action research combines action with the research procedure. This is an effort to solve the problem as well as finding the scientific support. In the action research method, there is no control class because this research is a case study.

The involved group tries to formulate the action or the interventions to solve a problem and then to watch the practice in order to know the successfulness. The research was done in Ananda kindergarten Universitas Terbuka (UT) or The Indonesia Open University. The respondents of this research were kindergarten students in the A3 group which consists of 13 children. Ananda kindergarten UT is located on Tangerang, Indonesia under the Yayasan Pembina Insan Indonesia (YPII). The research was done in the first semester from July to October 2008. The learning activity with Big Book is done everyday every 15 minutes and continued by a theme which is related to the Big Book. The action is analyzing the focus of the subject or the participant who involved in this research. In this research the researcher is the instrument of the research or participatory researcher. The researcher is acted as the planner and the doer of the research and the teacher of Ananda kindergarten UT in A3 group is the collaborator who accompanied the researcher in planning, doing, analyzing/reviewing, and revising the action done. Further, the headmaster of Ananda kindergarten becomes one of the informants in doing the research especially in the preparation part. A group of students that is the A3 group becomes the object of the research and they were given the intervention and being observed during the research.

Before the research, the reading readiness of the A3 children is assessed. The earlier assessment is done to know the data of the first skill of the respondent. The purpose of the assessment is to keep the planning and the managing program clearer, in the right direction, and suitable with the goal of the research. The instrument which is used to collect the data is the reading readiness instrument which has been tested to the A children of Ananda kindergarten from the previous year. The result of the assessment will be compared to the final assessment by using t test and percentage comparison. The purpose of the t test is to know whether the program which will be used in every cycle will be increased.

Respondents of The Research

1. The researcher her self that act as a research instrument (participatory researcher) The researcher acts as designer and axecuter of the research.
2. Group A3 Kindergarten Ananda-UT teachers that act as collabolators that assist the researcher in planning, conducting, analisyng/reviwing and revising the actions.

3. Kindergarten Ananda head of school as an expert in doing this research especially in preparation stage.
4. Group A3 Kindergarten Ananda students as research objects that were given intervention and were observed during the execution of the reserach.

Before the research was conducted, students' reading readiness in group A3 were assessed. This preliminary assessment was done to obtain initial data capabilities of the research respondents and it was intended to make planning and arrangement of the action programs to be more obvious, focused and in line with the research objectives that have been set.

The instrument used to collect the preliminary assessment data was an instrument to assess students' beginning reading readiness that has been tested to children in group A Kindergarten Ananda at previous school year.

The results of the preliminary assessment were compared to the final assessment by using t test and percentage comparison. The objective of t test was to determine whether there is an improvement in kindergarten students reading readiness as a result of the Big Book action program.

Data Analysis

The data obtained in this study were analyzed qualitatively and quantitatively. In qualitative analysis, the data in the form of observations contained in the field notes were analyzed using the method of Miles and Huberman (1992). This method consists of several components, namely data reduction, data display and conclusion drawing and verification.

By quantitative analysis, the researcher compared the child's reading readiness data obtained from the initial assessment and final assessment (after the action). This analysis is done by comparing the result of child's reading readiness assessments at baseline and after the implementation of the action. Analyses were performed by using a percentage of average results and by using the t-test.

RESULT AND DISCUSSION

Reading Readiness

Reading readiness becomes the part of school readiness. School readiness in some literature was called just "readiness". Commonly, parents and kindergarten teachers think

that this readiness as the ability of the children to participate and success at school. This readiness includes the ability of the children to finish specific activities and to involve in the process related to school in certain period of time. The children have to do it in children care place, playing group, kindergarten, or the first class of Elementary School. So, readiness is a group of physical development, cognitive, social, and emotional of the children in certain period of time (Morison, 1988). On the other hand, Cronbach defines school readiness as the characteristic or the strength which make something react with specific way (Dalyono, 1977).

The term of reading readiness can be defined as the condition which someone is easy to influence or predisposition to get reading teaching method. This readiness is not only depending on the intelligent, physical mature level or the muscle and nerve mature level but also depending on the hearing, sight, the common attitude with mass media, and the knowledge about letters (Spodek 1978). Wilma Miller (1997) stated that reading readiness includes several abilities, those are: visual discrimination, auditory discrimination, oral language skills, experiential background, left to right progression, picture interpretation, sequence ability, laterity (ability to discrimination between the left and right sides of the body), motor coordination and social emotional adjustment.

A child is said as ready to read if they pass several requirements (Dalman, 1982), those are:

- a. Reading interest, which includes the attention in observing a story, interesting to the picture books and borrowing some of them to read,
- b. Oral language, which includes: the ability to say most of words, can communicate orally effectively, and speak clearly and smoothly.
- c. Hearing ability, which includes: can hear words in a poem and can differentiate the spelling
- d. Sight ability, which includes: the ability to see the different of similar letters and the ability to see the different of similar pattern of word.
- e. Scrutinize, which includes: the ability to memorize the story, the ability to follow simple orders, and the ability to memorize the series of event.
- f. Orientation from the left to the right, which includes: watch closely to the series of picture from the left to the right and recognize the series of letter in a word from the left to the right.
- g. The knowledge of letter, which includes: the ability to mention each letter, the ability to show the letter, the ability to write down from the capital letter to small letter, and the ability to associate the spoken spelling into letters.

- h. Emotional and social factor, which includes: the ability to work in a group, the ability to show manner, the ability to work by themselves, and the ability to responsible toward job given.

If we see it from the children's development point of view, the time when they born up to 6 years old is the most important period for the cognitive development to understand literature (listen-read, write, and speak) (Teale & Sulzy, 1990). According to Teale, reading subject in first class of Elementary School is too late. It is better for the children to know about literature since they were born. On the other hand, many people said that the hearing and speaking ability is a must to be given earlier and reading and writing ability can be given later when they are in the Elementary School. This statement is different if it is compared to the educational expert who said that all of literature abilities have to be given in the same time because those abilities affect each other and develop in the same time.

Many experts believe that children have a great potential to learn literature as long as they are treated in the right manner. It can be caused by several things:

- a. Children learn naturally
- b. Children know a lot about literacy before kindergarten
- c. All children can learn
- d. Children learn best when learning is kept whole, meaningful, interesting and functional
- e. Children learn best when they make their own choices
- f. Children learn best in a community of learners in a non competitive environment
- g. Children learn best by talking and doing in a social context

Fisher (1991) also stated the statement from the experts about the present of literature, which is:

- a. Literature learning begins far away before children get the formal learning
- b. Literature development is the suitable way to describe the reading readiness in which when the children develop as a writer or a reader.
- c. Literature develops in the setting of life in order to finish something.
- d. Children have cognitive development in literature development, since they born up to 6 years old.
- e. Children learn written language through their activities with their world.

Although, the literature learning can be described in general steps, children can pass those steps in different types of way.

Big Book

Big Book is a book with picture which chosen because of its special quality (Karges & Bone 1992), those are including:

1. A Big Book has involved the children attractiveness fast because of the pictures.
2. Consist of interesting rhyme for children and it makes the written text easy to memorize.
3. It has big size of pictures.
4. There is a repeatedly written text.
5. It has a planted phrase and most of them are repeated.
6. t has plot and clear and simple story.
7. Commonly it involves comedy.

There is no exact size about Big Book. Several Big Books out there have different size. There is a Big Book in A3 and bigger than that. The size of Big Book which is used by the researcher is 60x40 cm. Every Big Book consists of 5 up to 15 pages along with big illustration and big written text. The sentence in every Big Book is still a simple and short sentence. The illustration in every page is bigger than the written text. The cover is laminated to keep it strong.

Big Book is a concept, strategy and learning medium coming from foreign country. The learning activity by using Big Book is done in fun through playing activity. But, the activity of the kindergarten with Big Book has to be managed with the latest curriculum. It means that the reading and writing activity in the kindergarten is only an introduction. This Big Book can be used to support learning process in a kindergarten and one of the functions is to increase the reading readiness.

Learning process by using Big Book is used whole language philosophy which based on the whole aspects of language ability. The learning ability with Big Book (Fisher 1991) consists of:

Pre-reading activity before reading Big Book, the activity consists of:

Introducing the part of Big Book such as showing the front cover, pages, the upper part, and the bottom part of Big Book, the back cover and how to open the book in the right way, showing the front cover, creating a conducive to get a great discussion with the children by giving a comment on the illustration or the picture with the word in the front cover. The teacher tells the title of the book, the writer, and the illustrator loudly. Then, they ask about the possible story of the book based on the title and the illustration from the front cover.

Reading The Complete Story

This activity is done when the teacher read the story continuously from the first page up to the last page. The teacher can stop in certain page and ask the children to guess the text in the next page or give additional information about the story or the illustration. The teacher reads **the story loudly along with interesting expression and intonation.**

Re-Reading Activity

This activity is done by repeating the story page by page. The teacher shows the words and says it clearly. The teacher asks the comment from the children and stop for awhile in the certain page to give a chance to the children to memorize and guess the next words.

After Reading Activity

The activity is discussing the keyword in the story and helping the children to connect one concept with another concept. Next, the teacher and children read the story together. The teacher gives stressing in the way to read and gives a correction about the way to read in comfortable way.

Cloze Activities

Cloze activities are done with various types of interesting activities based on the area. The teacher can give guessing word game, bolding the words game, arranging the words game, completing the missing words, coloring picture, cutting, folding, adhering, drawing, drama playing, pantomime, imitating certain character in Big Book, drawing with finger, sand playing, painting, and putting number to the picture, arranging geometry, story telling, and many more based on the area.

The Result

Qualitative research results obtained from field notes made by teachers and researchers can be formulated this way: the use of a Big Book in learning activities in kindergarten can be used to improve the child's reading readiness. This learning model can be adapted into daily teaching activities. Teaching activities include opening activities consist of morning prayers, say hello and checking on the student presence/absence, sing children's songs which fits their age and appreciate it. Core activities that includes several activities of the Big Book consists of pre-reading activities, read together, repeat reading the source, after reading and

closing activities consist of several number of activities carried out in certain area, that is: the area of literacy, numeracy, blocks, art, and acting. During these core activities teachers must able to demonstrate interesting and attractive reading activities, actively involving children, giving children the opportunity to guess the content of a story or predicting it, correcting the wrong expression and using media, tools and resources accordingly. Closing activities includes providing children motivation, assessing student work, read after school poetry, evaluating, and say closing salutation. In carrying out all these activities, teachers should pay attention to the variety of personal styles while teaching, these were including variations of tone, volume and tempo of reading, expression change and gestures or facial expressions, changes in position while reading, and give an eye contact to each child.

As mentioned earlier that this research does not stop at the qualitative data but also involving the use of quantitative data to reinforce the belief that the strategy employed was successful and was scientifically proven through quantitative research procedures.

The quantitative results of the study was seen by comparing the percentage of the child's reading readiness, between the results of the initial assessment and the results after the implementation of the action. It can be seen in Table 1. The data shows that every child reading readiness has increased significantly, ranging between 6.7 points to 16.7 points. To be clearer, the data is illustrated by the graph presented in Figure 2.

Table no 1: Comparison of the average score assessments before and after the action (in percent)

Subject	Early Score	Final Score	Improvement
1.	45	61,3	16,3
2.	39	51	12
3.	38	50,3	12,3
4.	49,3	63,3	14
5.	42,7	55,3	12,7
6.	44,3	59,7	15,3
7.	31	45,3	14,3
8.	49	67,3	18,3
9.	33,3	47,3	14
10.	43,3	60	16,7
11.	41	57	16
12.	34,3	51	16,7
13.	9,7	16,3	6,7

Description:

Subject: Children

Early Score: The average score obtained by each child before the implementation of action

Final Score: The average score obtained by each child after the implementation of action

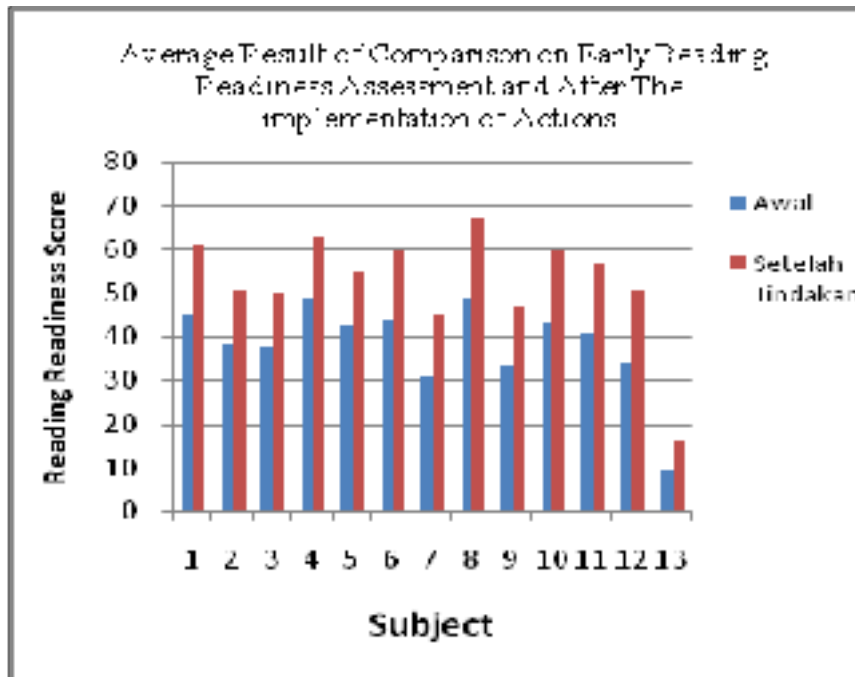


Figure 2
 Chart reading on the result of the child's reading readiness before and after the implementation of the action

From the figure above, it is quite clear that the child's reading readiness after the implementation of actions has increased significantly despite the increase varies but overall it appears that the learning activities using Big Book approach that is applied in the model area can improve the child's reading readiness.

Furthermore, to strengthen the analysis, the results of the calculation of normality test and the average difference test using t-test against the average child's reading readiness assessments at the early condition compared with reading readiness assessment results after the implementation of the action, are also presented.

Based on the average pair, the differences between the test result on early child's reading readiness assessment, and the data after the implementation of the action shown that there was a significant difference (p-value <1%) in as much 0.348 points. This means that there is an increase in the assessment results of the child's reading readiness in early condition and result of the assessment of the child's reading readiness after the execution of the action. Thus it can be said that the implementation of the action is quite successful in improving the child's reading readiness and the results was in accordance with the intended purpose.

Conclusion

This conclusion based on the result of the study can be taken a conclusion as follows.

1. Research the action was carried out for four weeks or 19 meetings. The result showed that the activity of learning through the use of the approach of big book can meningkatkan-readiness read children. Its implementation will be most effective if activities of learning applied in accordance with proper steps. Among others include activities (consisting of praying, the opening mengabsen, and give salutations slnglng bersama according to the theme song children and apersepsi), according to the theme the activities of the nucleus consisting of activity pramembaca, read together, the repetition of reading, after reading and activities of the involucre are in the form of activities lanjutan done in the area and activities a covering consisting of the administration of strengthening on child, appraise the outcome of the work of children, give rhyme school, cover the, and give salutations. In addition, to make it more effective teachers must demonstrate reading with interesting and attractive, engaging children actively, correcting the wrong child, greeting and use of media, tools and resources that are appropriate. All the components must be made of teachers with variations in price and style of the variation in tone, volume and tempo in reading, facial and body motion changes, changes its position and make contact with a child's perspective.
2. At the end of the implementation of the Act, based on the observations of the researchers and implementers as well as the interater field obtained that all children have an increased readiness in reading. Despite its increase occurs in a range that varies between 6.7 to 16.7 points. The children have shown readiness indicator reading is expected. This conclusion is also reinforced by the results of the calculation with a statistical analysis of the test t (t-test) which indicates that there is a significant difference (p-value & lt; 1%) amounting to 0,348 points. This means that there is an increasing readiness assessment results read the child before and after the implementation of the action. Thus it can be said that the implementation of the Act has managed to increase the readiness of reading and the results achieved in accordance with the intended purpose
3. Based on the data qualitative obtained by observation, seemed that teacher for conducting activities of learning by the use of big book, teachers need to understand beforehand about the concept of learning big book. Besides the teacher have to be creative in creating a variety of activities (especially on a stage a close activities) that are seamless and associated with the theme big book that is being used at that time so that, in the event of learning will be many stimuli menstimuli readiness to read children in particular and child development completely.

4. The use of big book in their experiences in the tk will be more add alternatif learning in kindergarten and by the presence of an activity that varies make activities pem-belajaran become more attractive and exciting so that the optimization of the capability of a child could be more effective.

5. The teacher could develop big book his own adapted to the theme and the condition of his school each and adapted to the terms of big book.

Recommendation

The use of big books in the learning activities in kindergarten can be applied in various situations. In this case it takes creativity guru untukmenciptakan play and learn activities that vary by utilizing the tools and materials available so that the activities become more interesting and fun for children. In this way, the stimulus provided the easier it responded to complaints by children so that each child's abilities will be developed optimally

Learning to use big book can be applied to every KINDERGARTEN can apply it. This is because the big book that can be created by teachers with materials that are relatively inexpensive with the story developed by teachers in accordance with the circumstances and local conditions. Before deciding to use big book should every teacher and head of TK need to study theoretically the very substance of the approach of the big book and how the implementation of the lesson so that teachers can implement it with appropriate measures.

Reading readiness as part of school readiness need to stimulated as early as possible to avoid an element of coercion. Stimulation given should be in the form of activities that are enjoyable and compelling that the optimization of the capability of children particularly readiness read it better. Besides the need of cooperation between parties educational institutions and the parents so as to stimuli given in school can be followed up again at home so does not occur the gap between education and learning applied in schools and education and learning carried out of the house.

Following are photos implementation of activities with big book learning



The teacher read a big book with a loud voice (Shared reading Activities)

One of the children read the Big Book (activity after reading)



Introduce the letter in the name of the day (Cloze Activities)



Introduce the letters on the name of child (cloze activities)

REFERENCES

- Bernard S. 1978. *Teaching In the Early Years*. New jersey: Prentice Hall.
- Bobby F. 1991. *Joyful Learning, A Whole Language Kindergarten*. USA: Heinemann.
- Dalyono. 1977. *Psikologi Pendidikan*. Jakarta: Rineka Cipta.
- Departemen Pendidikan dan kebudayaan, (1999), *Penelitian Tindakan (Action Research)*, Jakarta: Ditjen Dasmen, Dit Dik Menum
- Dorothy SS, Lesley MM. 1990. *Emerging Literacy: Young Children Learn to Read and Write*. Delaware: International Reading Association.
- George SM. 1988. *Early Childhood Education Today*. Ohio: Merrill Publishing Company.
- L. Karges, Bone. 1992. *Bring on the big books, the reading teacher*. Sidney.
- Martha D, et al. 1982. *The Teaching of Reading*. New York: CBS College Publishing.
- Miles, Matthew B, Huberman AM. 1992. *Analisis Data Kualitatif*. Translate by Tjetjep Rohendi Rohidi. Jakarta: Universitas Indonesia Press.

**BIOTECHNOPRENEURSHIP:
AN INTRODUCTION OF BIOTECHNOLOGY AND ENTREPRENEURSHIP
PROGRAM
IN ADDRESSING BEHAVIORAL PROBLEMS OF GIFTED CHILDREN
FROM TUMBUH INCLUSIVE ELEMENTARY SCHOOL, YOGYAKARTA, INDONESIA**

Wahyu Wido Sari 1); Admila Rosada 2)

- 1) *Sanata Dharma University, Mrican, Yogyakarta 55002, Indonesia*
2) *Gadjah Mada University, Jl. Humaniora Bulaksumur, Yogyakarta 55821, Indonesia*
e-mail:1) w.widasari@gmail.com; 2) milaadil@yahoo.com

Abstract

Tumbuh Inclusive Elementary School is one of inclusive school at Yogyakarta that facilitates special needs student in their learning activity. The school creates Individual Educational Program (IEP) to gain special needs student competencies as their needs including gifted students. The school looks the importance of designing special program for gifted because they show some behavioral problem in daily activity at school such as tantrum; get bored easily, hiperactive, and emotional crisis. The aim of this program is to minimize the social impact of gifted children's behavioral problems towards the other children by conducting activities that stimulate their experience and knowledge in biotechnology and its implementation. The biotechnopreneurship program consists of activities that introduce the way of human being in processing food materials or environment which produces valuable products. The program decreased behavioral problem of gifted children because the superior cognitive capacity was balanced with soft and social skills. The program conducted for 9 gifted children with durations of 10 meetings which carried out biweekly for one and a half hour.

This research is one group post test only experiment design. Qualitative analysis has done to teacher's questionnaires to identify the effectiveness of the program. Qualitative analysis also has done to the student's log book and post test to observe everyday progress. The behaviors of the students influence to be better. Based on our observation, there is no clear linkage between the program activities in class activities. But, three students showed their influence to made conclusion during their experiment class activity. Two students assist the teachers in class and able to re-tell the experiment of biotechnopreneurship but they

couldnot remember the experiments detail. One student did not show any changing of his problem.

The follow up of this activities, we will lead this program to entrepreneurship by motivated the students to make their own biotechnology product as have been taught to them this semester. Then, they will sale those products to their classmate or in school fair.

Keywords: biotechnology, inclusive education, gifted, behavioral problems.

Introduction

Nowadays, people's awareness of inclusive education has rapidly developed in Indonesia. More schools adopt the inclusion system which facilities normal children and also children with special needs. Children with superior intellectuality or usually called gifted children are also considered as the special need children, which require special treatment. Their superior intellectual capacity, which is shown by their broad knowledge and good problem solving skill, in fact is not optimally facilitated by the school. As consequences, in class, gifted children get bored easily and distracted because their aspiration and energy are not fully facilitated. Furthermore, they show some behavior problems.

In 1994 a world conference on special needs education took place in Salamanca, Spain. Almost 100 countries and many international organizations took part. A statement (subsequently referred to as the Salamanca Statement) was issued concerning the education of all disabled children. Delegates called for inclusion in mainstream schools of all children with SEN to become the universally accepted approach. The conference also proposed a framework for action which was underpinned by the principle that mainstream schools should accommodate all children, irrespective of their physical, intellectual, social, emotional, linguistic and other conditions. It also demanded that all educational policies should enable children to attend their local school, whether or not they had a disability. The Salamanca Statement was influential because it was the product of an international agreement from representatives of 92 nations. As a collective they called on governments worldwide to address a number of vital issues for the further development of inclusive education. All governments should adopt the following: a) Give the 'highest policy and budgetary priority' to improve education; b) services so that all children could be included, regardless of differences or difficulties; c) Adopt as a matter of law or policy the principle of inclusive education; d) Ensure that organizations of disabled people, along with parents and community bodies, are involved in planning decision making. The subsequent widespread publicity given to the Salamanca Statement acted as a stimulus to inclusive thinking in many countries, and greatly raised the profile of SEN in doing so (Gardner, 2009).

Indonesia government has several regulations as basic to conduct special education, they are: a) Section 32 UU no 20 year 2003 Sisdiknas that accommodates children with physical impairment, emotional problem, social problem, and giftedness, also students from left behind villages, disaster victims, and low economy; b) Section 5 UU No 20 Year 2003 Sisdiknas mentioned that every citizen has their own right to get qualified education, including children with characteristic as written at point a. Then, Indonesia government creates National Education Ministry Regulation No 70 Year 2009 about inclusive education for students with impairment and students with giftedness. There are 10 sections that arrange the practical framework until province and district level.

Inclusive education according to the Minister of National Education Regulation (*Permendiknas*) No. 70 year 2009 is defined as an education system that provides opportunities to all students with SEN and special talents and/or intelligence to have access to education or learning in an educational environment together with other students. In its application, inclusive education aims to provide as many opportunities as possible to students with SEN and develop education that recognizes diversity and non discriminatory towards all students with physical, emotional, mental and social limitations as well as those student with special talents and/or intelligence so they can receive quality education according to their needs and abilities (Aznam, 2012).

Significant momentum has also been built in Indonesia, especially in Yogyakarta has responded with the creation of regulations specifying inclusion. These regulations include Provincial Education Plan (PERDA) approved on 12 May 2011 and plans to create a provincial regulation on inclusive education are underway. Yogyakarta municipality already has a local regulation establish in 2008 and regent regulation on inclusive education are planned for the district of Gunung Kidul, Bantul, and Kulon Progo. The provincial government created several regulations specifying inclusion such as a Provincial Education Plan and a provincial regulation on inclusive education. Education authorities have worked together with the parliament and Planning and Development Agency (Badan Perencanaan Daerah) to budget funds for accessibility in schools. Furthermore, the provincial education authority has taken steps to revitalize the inclusive education resource center in the province and plan for the establishment of 5 further sub-centers at the district level.

In recent years, a focus on individual student needs has set the stage for tailoring educational interventions to address issues of students who are not working up to educational proficiency standards outlined in the No Child Left Behind (NCLB) legislation (Robertson, 2012). Luckily, this change also opens the door to meeting the needs of students who are not working to their potential in the classroom. Unfortunately, these same students spend the majority of their school days in regular education classrooms without

modifications or accommodations to the curriculum. In addition, research indicates that gifted students allowed working on additional material instead of maintaining the pace of the rest of the class actually performed better on end of the year testing in math and science than gifted controls that did not pursue additional work. Further, the gifted students who engaged in independent study performed no differently in other subject areas. The implication is that one method of improving student math and science performance is to allow for accelerated and/or enriched curricula.

Tumbuh elementary school is an inclusive school that located at Yogyakarta, Indonesia under Yayasan Edukasi Anak Nusantara (YEAN). The school starts the learning activity at 2005. Now they have already 3 elementary schools and 1 junior high school with all 425 students.

The vision of Tumbuh Inclusive School is children grow as lifelong learners, have respect for diversity and local wisdom, love the mother land and show awareness to be part of universe. Tumbuh Inclusive School has deep philosophy in learning that school must be fun for both students and educators; students and educators must enjoy learning as a life long journey; and students have sense of belonging to the learning. In conducting learning program, Tumbuh Inclusive School uses national curriculum KTSP (Kurikulum Tingkat Satuan Pendidikan) and also Cambridge Curriculum as enrichment. They also design Individual Education Program (IEP) for special need students.

Differentiation of the curriculum represents the baseline strategy for dealing with an identified SEN. The approach has been defined as 'teaching things differently according to observed differences among learners' (Westwood, 2006). It is important to note that differentiation in the curriculum is one of the bases of effective generalist teaching. It has assumed significant importance in SEN, it remains applicable across the entire curriculum and at every level of the achievement spectrum. Fundamentally, therefore, it represents recognition that learners are individuals. It is derived from a number of pedagogical approaches, notably those of task analysis, curriculum monitoring and review, pupil grouping, and learning and teaching styles. Differentiation is a relatively straight forward term to define; most teachers will agree that, because it relates to an input process output model of teaching, it is not easy to put into practice (Philip, 2009).

Giftedness has been conceptualized in a number of different ways over time, and by different authorities. Depending on the expert you ask (and at what point in time you ask that individual), you may hear giftedness characterized in a number of different ways. Sternberg and Davidson (2005) published a second edition of their book *Conceptions of Giftedness*, some 20 years after it was initially published and asked contributors to answer the following questions: "what is giftedness, how does your conception of giftedness

compare with other conceptions, how should gifted individuals be identified, how should gifted individuals be instructed in school and elsewhere, and how should the achievement of gifted individuals be assessed?" (Sternberg & Davidson, 2005, p. ix).

Differentiation of the curriculum for gifted students is the best way to optimize their potential. Usually gifted students have high interest in science and technology. One of the themes in recent science and technology is biotechnology. Biotechnology is a sample of modern science which provides teachers with a context to show how teams of scientist, technologist, and social scientist work together. It also provides opportunities for students and teachers to explore and critically debate and dilemmas in ethical issues that arise during the process (Phoenix in France, 2007). Furthermore the social and political issues arising from the practice of biotechnology provide a rich context to link science with the life world of the students.

Biotechnology has been a part of human history for thousands of years and perceived as an indicator of prosperity and development (Kwon, 2012). This study was improving the quality of our daily lives such as food, health, fuel, and environment. The growing impact of biotechnology globally and nationally over the past few decades has promoted the need for elevating general biotechnology literacy levels in all populations (Kwon, 2012).

Etymologically, biotechnology means "the study of tools from living things", combining the Greek words "bio" (living organism or life), "techno" (art, skill, system or tool), and "logos" (speech, study of) (Wells on Kwon 2012). We can conclude that biotechnology is any technique that uses living things (organism or part of organism such as enzyme, gene) to make or modify products, improve them, or develop them for specific uses.

Indonesian people recognized local biotechnology such as fermentation for long time. Tempe, tape, yogurt, kefir, salty eggs, pickled vegetables are local cuisine as biotechnology product. Modern biotechnology is central to human innovation and our future. Public knew about genetic modified organism (GMO), but they did not have enough scientific knowledge to understand it. There is a tension about the GMO. As biotechnology develops to molecular genetics, began a large gap between scientists with general public. Communities with limited understanding about biotechnology and science have to deal with conflict between commercial and politic.

Moses, 2003 said that people became confused by conflicting statements for and against; the more so as a number of food and other health scares had recently gained great prominence. Faced with conflicting claims for the new products, especially those involving

food for which there was no perceived urgency and anyway there were plenty of other options, the safest cores seemed to be maintain a healthy distance.

Again, Moses, 2003 explained that the problem of disseminating information exists at two levels: addressing the adult electors of today and ensuring that the voters of tomorrow have a good grasp of important issues through the normal processes of educating children and young people.

Biotechnopreneurship is a program that we set up to introduce biotechnology to children. We hope with this program 9th gifted students from Tumbuh Inclusive School can be an agent to biotechnology to public and they can figure their behavior as their difficulties to learn in class. This program is aimed to minimize the social impact of gifted children's behavioral problems towards the other children by conducting activities that stimulate their experience and knowledge in biotechnology and its implementation. The biotechnopreneurship program consists of activities that introduce the way of human being in processing food materials or environment which produces valuable products. This program was a pilot project which have been evaluated and considered as alternative activities that facilitate the needs of the students in the inclusive school setting.

The biotechnopreneurship program contains an introduction of microorganism, concept of fermentation, preservation of foods and generic laboratory equipments workshop.

MATERIALS AND METHOD

To gain the best practice in inclusive education and facilitating gifted students, Tumbuh Inclusive Elementary School in Yogyakarta – Indonesia creates biotechnopreneurship program. The principal and its center for studies on inclusive education did this process:

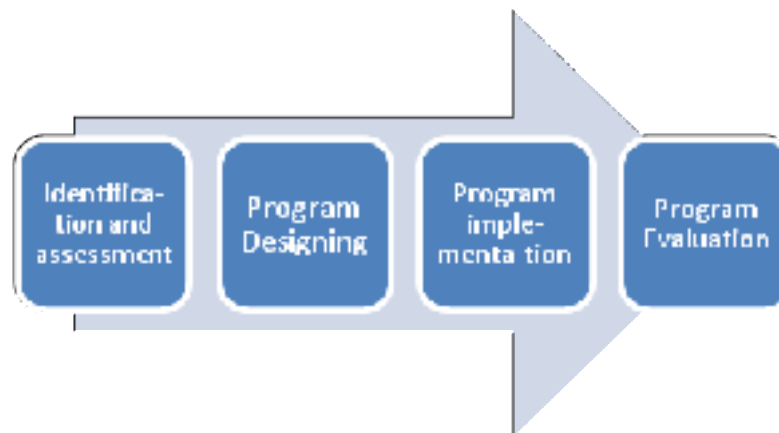


Fig 1 Research Design

The identification and assessment process was done by teacher recommendation and the IQ testing. From this process, Tumbuh Elementary school has 9 gifted students, but 1 student has to move to Australia so he only joined 3 sessions. Then Head of Schools and principals did corporation with biotechnology mentor to conduct this program. They designed *biotechnology for young learner program* to be implemented in second semester academic year 2012-2013. At the end of the program, they will evaluate all of the process to get do the next program.

Table 1 Data of students with their behavioral problem

Student Initial	Grade	Behavioral problem
DN	3th	Tantrum, emotional crisis
FL	4th	Get bored easily, low confidence to explain a result and make conclusion
RF	3th	Get bored easily, hiperactive
NN	6th	Low confidence
AW	6th	-
WL	3th	low confidence
RK	3th	Attention deficit, hiperactive
AR	3th	Talk active, bossy, tantrum
RN	6th	-

The program conducted for 9 gifted children with durations of 10 meetings which carried out biweekly for one and a half hour.

The introduction of biotechnology was begun with fermentation of yogurt and built generic microscope from web cam. The theme of this semester was preservation. We introduced the concept of preservation of their samples or their foods.

We prepared module to guide the experiment because we used inquiry based learning model. The students were guided with a problem or question, then we arranged an experiment (explanation the experiment), the students collected the data and we got them with post test. The teacher observed them during the experiment.

Biotechnopreneurship schedule was provided in table 2:

Table 2: Biotechnopreneurship schedule

• Meeting	• Day and Date	• Theme
• 1	• Thursday, • 10 January 2013	• Yogurt and meranti seeds preservation
• 2	• Friday, • 11 January 2013	• MIRA: Microscope in a Rush (generic microscope from web cam)
• 3	• Friday, • 25 January 2013	• Technique of herbarium
• 4	• Friday, • 08 February 2013	• Insectariums
• 5	• Friday, • 22 February 2013	• Bio plastic
• 6	• Friday, • 08 March 2013	• Fermentation war: microbe that blow balloon
• 7	• Friday, • 05 April 2013	• Tape: fermented cassava
• 8	• Friday, • 19 April 2013	• Sweeten fruits: diffusion-osmosis
• 9	• Friday, • 03 May 2013	• Salty Eggs: the way we preserved foods
• 10	• Friday, • 17 May 2013	• The bouncy eggs

RESULTS AND DISCUSSION

To obtain research data, observations and teacher's questionnaire were conducted. Observations were done at biotechnology class every two weeks. Observation guideline was constructed based on the scientist attitude such as concentration, work in tidy, observation skill, scientific questioning, and constructing hypothesis. Questionnaire was fulfilled by the teachers that the gifted students are studying in their class. The teachers wrote the differences of student's attitude before and after the program. The questionnaire type is open question to gain qualitative data about student's attitude in the class.

Inquiry is the process initiated by the learner or the teacher which moves the learner from his or her current level of understanding to a new and deeper level of understanding. Tumbuh Inclusive School uses inquiry as approach in learning process with using six main units of inquiry that children explore along the school year. They are who we are, Diversity,

Indonesia, Our Earth, Technology and Innovation, and Entrepreneurship. The main units are implemented into certain topic of inquiry based on the curriculum competencies and concerning the recent issues. Then, these inquiry themes are deducted into learning method. The learning methods are wondering and questioning, experimenting, researching & seeking information, collecting data and reporting findings, deepening understanding through the application, making and testing hypothesis, and elaborating on solutions to problems.

This program has been running 9 times out of 10 meetings scheduled. A major theme in this semester is preservation. Logbook as scientific journal has been introduced in the first meeting. Based on our observation, students did not realize the importance of logbook as experiment record. They wrote down their observation during experiment if the teacher said so.

The first meeting we introduced to students the way to preserved meranti seeds and preserved milk as yogurt. We introduced to them that there was a microorganism had spoiled the milk but it still could be eaten. One of the students (DN) refused to join with the group and run. But, when he knew that his friends made yogurt in the kitchen by themselves, he was keen to join. This student has behavior problem tantrum. He grew up in a violent household. His teacher gave up by his tantrum behavior in class. But, in this program, he was only once run and back to the class in the first meeting.

Second meeting we got Dr. Marc D from Lifepatch. He taught students to built generic laboratory equipment from simple tools. The students built microscope from web cam and observed microorganism. They named the organism they saw by the generic microscope with *bubuflufu* or *microflea bubuflufu*, actually we observed water bug.



Fig 2 Students and mentors built generic microscope



Fig 3 'Microflea bubuflufu' (water bug observed with generic microscope)

In this meeting, the students followed all the activity nicely. They contributed to finished their previous activities that had been hold yesterday, made yogurt. They also did their post test by draw their microorganism observed by generic microscope and named it.

Students' high interest in biotechnology and science are very high. They could understand and completed the difficult task of fermentation or built generic equipment quickly and well managed. We taught them about the generic equipment as their curiosity of biotechnology was high. Biotechnology represents an important field for the development of new educational tools. While the activities are very brief and simple its value of clearly visualizing and illustrating the basic techniques of biotechnology concepts cannot be disputed (Antiparmak and Yazici, 2010).

The third meeting, the students practiced to made herbarium. Herbarium is a method to preserved botanical samples. The samples were taken from the garden. The students looked for leaves with different shapes and edges. RK, RF, and DN took this opportunity to go out other activities such as played football or picked fruits and flowers. Once they got back to the laboratory, they started did their herbarium sheet. They improved their sheet by painted them with colorful paint.

The fourth meeting, the students learned to made an insectariums preserved. This method was more complicated than herbarium. They had to killed the insect by injected the insect with alcohol. The boys were very interested with this technique, but the girls became stressful. AR escaped twice from laboratory as frightened with the insects. RK improved his worked by poured a lot of alcohol in his insects' box, so the insect became spoiled the day after. Their herbarium and insectariums was displayed at Tumbuh Inclusive School open house. As the entrepreneurship program, they will make preserved sample to be sold in school fair.

The fifth meeting, students learned to preserved seeds and flower used resin. This technique was called bio-plastic. This activity was interesting and there were no students left their worked incompletely. Some students made more than one sample.

The students learned to prove single cells creatures involved in the fermentation process. We conducted an experiment proving the microbial by 'Microbes that blow the balloon' experiment. Yeast is a single celled fungus that converted glucose into alcohol and carbon dioxide in the microaerophilic conditions. The students witnessed the gas produced by the yeast by observed at the balloon inflated. They recognized that fermentation was occurred by the flavor of the sugar liquid changed into fermented flavor like tape. We observed that FL and RK have interested with this theme. FL wrote in his logbook about the time after time of gas formation. This is FL's written about the time of gas formation during fermentation:

4 menit sudah mulai mengembang

7 menit sudah berdiri

10 menit sudah agak besar

30 menit sudah besar

(4 minutes: the balloon has blown)

(7 minutes: the balloon have raised)

(10 minutes: the balloon have increased in volume)

(30 minutes: the balloon increased bigger that before)

This program was not connected with their curriculum and lesson. FL teacher observed that by this program, FL increased her confidence to explain something and helped her classmates. FL already knew the experiments steps. But after join this program, FL understood the experiments steps, more enthusiastic in science experiment lesson and good to drag a conclusion.

We introduced how amazing some microorganism did in our live and how they gave very much advantages. In the present study, before we did the experiment, the students have asked about their perception concerning the microorganism. All the students in this program defined microorganism as harmful. That opinion and perceptions were relevant with Karadon dan Sahin research in 2010. They found that 53 % of the students in 17 different primary school defined microorganism as dirt pollutant, and harmful. Most of students think that the risks of microorganisms are more than their benefits, and they stated that they feel bad when they hear the word microbe or microorganism. After we have done the fermentation experiment, students understood that there was microorganism that gave more benefits than the risks. WL explained it to her parents at home after this program.

The students learned about local fermentation by made tape (fermented cassava) in the seventh meeting. They did post test briefly. The tape they had made was good and tasty. Their parents and teachers tasted the tape they made.

We introduced the concept of diffusion and osmosis cell, the main concept in food preservation, by design an experiment to made sweetened fruits, salty eggs, and bouncy

eggs. We also made a post test and the students managed to do it well. In the eighth meeting, we made sweetened fruit (zalaca and papaya).

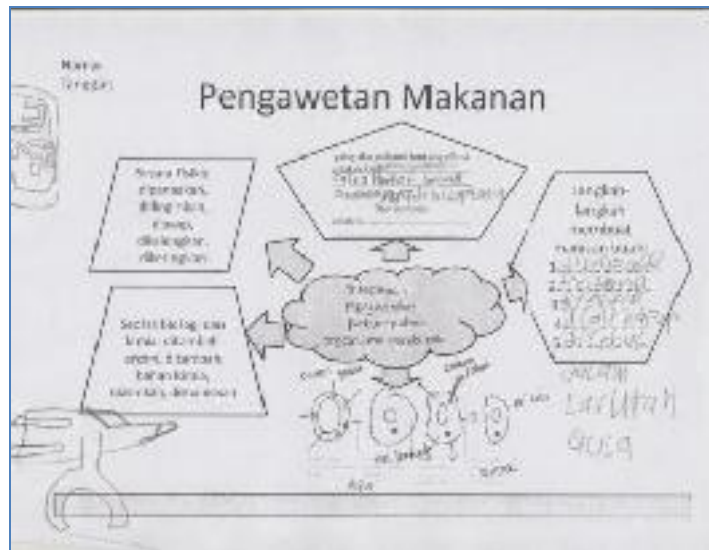


Fig 4 Students' post test about diffusion and osmosis

The students made salty eggs in ninth meeting. That was the last meeting we have done, once meeting left.

Temporary evaluation until the ninth meeting has done. From questionnaires filled by the classroom teachers, interview with parents, and observation mentors, we got feedback from the influence of this program for gifted children behavior. Their influence does not related with lesson but their habits in the classroom during class activity. For NN, FL, and WL this program increases their knowledge of science and biotechnology especially microorganism. They are more confidence to drag conclusion in their experiment and understand about experiment step. AW and RN left the program in fourth meeting because AW had to move to Australia and RN got his national exam (UAN). RK and AR showed their interest in this program and presented it in the class but they missed about the scientific step of the experiment. DN was difficult children. Normally in his class, DN could not notice the order from his teacher. But, in this program, DN almost did not show this attitude. He could understand an order, he followed the module's step of the experiment, and he did his task well. Unfortunately, DN had to left this program because his family problem. Not only this program, DN had left the class and did home schooling program. And last student, RF didnot show any change in his behavior.

Conclusion

Biotechnopreneurship as pilot program of Tumbuh Inclusive School for gifted students showed a good result. The behaviors of the students influence to be better. Based on our observation, there is no clear linkage between the program activities in class activities. But, three students showed their influence to made conclusion during their experiment class activity. Two students assist the teachers in class and able to re-tell the experiment of biotechnopreneurship but they cannot remember the experiments detail.

The follow up of this activities, we will lead this program to entrepreneurship by motivated the students to make their own biotechnology product as have been taught to them this semester. Then, they will sale that product to their classmate or in school fair.

Acknowledgment

We wish to express our appreciation to our colleagues: Yayasan Edukasi Anak Nusantara, Center for Studies on Inclusive Education, Sekolah Tumbuh Yogyakarta, Elga Andriana, S.Psi, M.Ed, and Sri Aryaningsih, ST. Finally, we thank all of students who participated in this program.

References

- Antiparma, M. And Yazici, NN. 2010. Easy biotechnology: Practical material design within team activities in learneing biotechnological concepts and processes. *J Procedia Social & Behav Sci 2: 4115-4119*
- Aznam, Nurfina. 2012. *Teaching in Differentiation and Learning Strategies: Implementation of Science in an Inclusive School, SMP Tumbuh Yogyakarta, Indonesia*. Yogyakarta: Yogyakarta State University.
- France, Bev. 2007. Location, Location, Location: Positioning Biotechnology Education for the 21st Century. *J Stud Sci Edu 43:88*
- Gardner, Philip. 2009. *Special Educational Needs: The Key Concepts*. London and New York: Routledge.
- High Level Meeting of Mayors for Inclusive Cities: as part of UNESCO project 'Social Inclusion of Persons Living with Disabilities in Indonesia'*. 2013. Yogyakarta, Indonesia.
- Karadon, H.D, and Sahin, N. 2010. Primary school students' basic knowledge, opinions and risk perceptions about microorganisms. *J Procedia Social & Behav Sci 2: 4398-4401*

Kwon, Hyuksoo. 2009. *Key Factors Affecting the Implementation of Biotechnology Instruction in Secondary School Level Technology Education Classrooms*. [Dissertation]. Virginia Polytechnic Institute: Virginia

Moses, Vivian. 2003. Biotechnology education in Europe. *J Commercial Biotechnol* 9:3:219

Robertson, Stephanie Glenn. 2012. *Initial Development of a Procedural Guide for Implementing Response to Intervention with Gifted Elementary School Students*. The Florida State University: College of Education.

Sekolah Tumbuh Hand Book. 2012. Yogyakarta, Indonesia

THE INFLUENCE OF PARENTS' ATTENTION ON STUDENTS' ACHIEVEMENT IN ENGLISH AT SDN 47/IV JAMBI CITY

Sri Marmoah

Batanghari University–Jambi
marfuah_pt@yahoo.co.id

Abstract

In this research study, the researcher tries to see and analyze the prevailing condition in elementary school. This research was conducted to investigate the effect parents attention to the student's achievement in English subjects of SDN 47/IV Jambi. The design of this research is quantitative research. The research is taken place in SD N 47 Jambi. The instrument of this research is questionnaire. This method is used to collect the data about the parent's attention to the student. Based on the result of research and discussions above a conclusion as follows: first, the parents' attention toward the student's English achievement is "very good". The student who got "very good" attention is twenty nine (29) students (80.56 %), and the student who still needs more attention is seven (7) students (19.44 %). Second, the student's English achievement in SD N 47 Jambi is "very good". The student who got "very good" English achievement is twenty nine (29) students (80.56 %), and the student who got not enough good English achievement is seven (7) students (19.44 %). Third, there is a correlation between the parents' attention and the student's English achievement, which the index correlation is 0.68. The parents' attention gave the influence about 46.24%. The parents' highest attention is 81,42 % and the lowest attention is 65,97 %.

Key Words: Parents' Attention, Students' Achievement in English, Elementary School.

1. INTRODUCTION

Education process is one way of growing the intelligence and the emotional optimally. The intelligence of a student can be seen from her/his achievement. This achievement is influenced by two factors; they are the intrinsic and extrinsic factors. The intrinsic factor is the factor of the student itself, they are proclivity, perception; health, intelligence, etc. And the extrinsic factor includes the parents attention, the method of teaching, and curriculum.

Some parents think that giving an education is a teacher's duty. So, if they were taken their children to a school, their duty to give the education for their children is finish. An ideally education for children is doing by their parents (mother and father). But the fact is many parents just hand over their children's education to their servant. For an ideal of children's education and care, the parents have not to hand over their children education to the servant, but they have to handle immediately, although in its implementation it is doing by the servant helping or the other families member in the home. The problems above are the interesting things for the researcher to the facts which happen around the field, therefore the research to find and describe the Influence of Parents' Attention on the fourth grade students' achievement in English at SDN 47 Jambi city.

2. LITERATURE REVIEW

Ivan D Pavlov in Sudjana (theory of classical conditioning) implicates the important of conditioning the stimulus to get the respond. So, the controlling and the treatment of stimulus are more important than the controlling of the response. This concept means that the learning process is given priority external factor than internal, it also means that the external is more dominant than the factor of the student itself (Sudjana, 73: 1991).

Kofka and Kohler in Slameto said that the student get the knowledge in the school and also outside of the school. In the society they get their own experiences. So, a school have to work together with the parent's in the house or in the society, So that they can help the growing of student. (Slameto,11, 2003).

The parent's attention has the important role in increasing the student achievement. Hakim (17: 2007) said that:

The family's environment factor is the main environment in forming someone education and it is also the main factor in determine someone achievement in learning. The condition of family's environment is establish of someone achievement, they are the place

of study, the arrangement time to learn, the tools of study, the quite situation, the big parent's attention to of the growing of learning process.

According the Thursan Hakim's opinion above, so the writer will explain the parent's attention in these factors bellow:

a. The place of study

The available of studying room, at the least it is enough wide, enough lighting, comfortable air and free of problems, which can obstruct the learning process, can support the student's achievement (Hakim, 40: 2002).

b. Time table

Time is very important in learning activity. By giving enough time to study will give the eases for student to comprehend the lesson material.

c. The tools of learning

The parents have to prepare all of the tools learning first for their children, for example: pen, pencil, ruler, note book, source book, etc. Incompletely books which are needed by the children caused the children lazy to study, so it can caused their achievement of study is low.

d. The situation of learning

The quiet situation means the situation when the children are learning, and one way to crate the quiet situation is by avoid the crowded (for example the voice of TV, radio or the voice of people in that home).

e. The guidance in learning

The guidance of learning is one way of parents to help their children in their lesson, so they feel there is no problem to learn it. The parents have to guidance their children so they have an optimal ability.

From explanation above, the researcher conclude that the parent's attention in these factors bellow: the place of study, time table, the tools of learning, the situation of learning, and the guidance in learning.

According to Slameto (59: 2003), he said that:

“The children have a good achievement if their parents working together in giving the positive message of how should they learned their parents”.

According to Hornby in Harpison (2009), achievement is something done successfully with effort and skill. Its mean that successes of student depend on their effort and skill. We must apply proven teaching strategies that raise student achievement.

Natawijaya (1993) said in the teaching learning activity, someone’s learning achievement depends on his or her ability including talent, interest, and intelligence.

From explanation above can be concluded that achievement is ability of someone at certain area in reaching teaching learning objectives, achievement depends on his or her ability including talent, interest, and intelligence.

3. DISCUSSION

a. The Parents’ Attention toward the Students of Each Item

Parents are the main educator for their children, because the children get the first education from them. Commonly, the education in the family creates causes there is a relationship between the parents and the children. The parents’ attention will give the good influence to the student’s achievement, such as the condition in SD N 47 Jambi. Based on the indicator, the parents’ attention is divided into five parts, they are:

1. The Parents’ Attention in Place of Studying. For the item of parents’ attention in studying place, for part time questionnaire it is consist of six questions, while for full time questionnaire is consist of four questions. The maximal raw score for part time questionnaire is 24 and the maximal raw score for full time questionnaire is 16. This items got the result that the highest score is 22 (91.6%), it is got by two students in “Excellent” level, and the lowest score is nine (56.25%) it is got by one student in “good” level.
2. The Parents’ Attention in the Table Time. For the item of parents’ attention in table time, for part time questionnaire it is consist of four questions, while for full time questionnaire is consist of five questions. The maximal raw score for part time questionnaire is 16 and the maximal raw score for full time questionnaire is 20. For this item, the questionnaire got the result that the highest score is 100, it is got by three students in “Excellent” level, and the lowest score is 56,25 it is got by one student in “good” level.

3. The Parents' Attention in Tools of Learning. For the item of parents' attention in tools of learning, for part time questionnaire it is consist of six questions, while for full time questionnaire is consist of five questions. The maximal raw score for part time questionnaire is 24 and the maximal raw score for full time questionnaire is 20. For this item, the questionnaire got the result that the highest score is 100, it is got by four students in "Excellent" level, and the lowest score is 33.33, it is got by two students in "fair" level.
4. The Parent's Attention in Situation of Learning. For the item of parents' attention in situation of learning, for part time questionnaire it is consist of five questions, while for full time questionnaire is consist of four questions. The maximal raw score for part time questionnaire is 20 and the maximal raw score for full time questionnaire is 16. For this item, the questionnaire got the result that the highest score is 100, it is got by two students in "Excellent" level, and the lowest score is 43.75, it is got by one student in "good" level.
5. The Parent's Attention in Guidance of Learning. For the item of parents' attention in guidance of learning, for part time questionnaire it is consist of four questions, while for full time questionnaire is consist of seven questions. The maximal raw score for part time questionnaire is 16 and the maximal raw score for full time questionnaire is 28. For this item, the questionnaire got the result that the highest score is 89.28, it is got by one student in "Excellent" level, and the lowest score is 30, it is got by two students in "fair" level.

b. The Parents' Attention toward the Students.

From 36 students, it can be seen that there are 12 of students have got "excellent" level, that is 33,33%, 17 students have got "very good" level, that is 47.22%, and 7 students have got "good" level, that is 19.44%. It's mean that there are 12 of students have "excellent" attention of their parents in learning English, 17 students have "very good" attention of their parents' in learning English, and there are 7 students have "good" attention of their parents' attention in learning English, which still need more attention of their parents' to reach the better English achievement in the school. While none of them got "fair" and "poor" attention of their parents in learning English. Then, the result of the parents' attention in learning English was used to describe the percentage of the level over all. Having calculated the score using the consulted formula, it was found that the parents' attention toward the students in learning English was 73.86%. It means that the parents' attention toward the student's English achievement was "very good". Based on the five indicators, it was got the total of parents' attention toward the student's English achievement. Then, the result of the parents' attention in learning English was used to

describe the percentage of the level over all. Having calculated the score using the consulted formula, it was found that the parents' attention toward the students in learning English was 73.86%. It means that the parents' attention toward the student's English achievement was "very good".

c. The Students' English Achievement

The data about the students' English achievement was gotten from the documentation data. From the data, it got the result that the highest score is 87, it is got by one student in "excellent" level, and the lowest score is 60, it is got by seven students in "good" level. For "excellent level" there are eight students (22.22%), in "very good" level there are 21 students (58.33%), and in "good" level there are seven students (19.44%). Meanwhile, none of them obtained "fair" and "poor" level. Apparently, the students' English achievement is in "very good" level. This thing caused that as of students have understood the material of English subject that have been learning. So, it can be conclusion that the students' English achievement is in "very good" level, but there are seven students who still have the low English achievement, which is 60.

d. The Correlation between the Parents' Attentions toward the Student's English Achievement.

The parents' attention toward the students will be given the significance positive influence to the student's English achievement. It can be seen from the data analysis, got the result that the index correlation (r_{xy}) is 0.68. In that index correlation, it can conclude that the parents' attention give the influence toward the student's English achievement ($0.68 < r$), it is mean there is a correlation between the parents' attention toward the student's English achievement. To know how high is the influence of parents' attention toward the student's English achievement is using the following formula:

$$\begin{aligned}KD &= r^2 \times 100\% \\ &= (0.68)^2 \times 100\% \\ &= 46.24\%\end{aligned}$$

So, the parents' attention is given the influence 46.24% toward the student's English achievement, while the remainder is 53.76% is caused the other factor such as the student's intelligent, the student's activeness in the class, etc.

The student's English achievement of the students of SD N 47 Jambi was "very good". This fact can be discerned from the result of student's achievement, which shows that more than 58.33% of the students got high score. Based on the questionnaire, the writer assumed that for students who got "excellent" and "very good" level, they got "very

good” attention from their parents in studying process, and the other reason why they got “excellent” and “very good” level is caused most of them also take the English Course.

The parents’ attention to their children was “very good”. This fact can be discerned from the result of the questionnaire which shows that more than 47.22% of students got “very good” attention in studying English, while there are seven students (19.44%) still need more attention of their parents in studying English. The students who got “excellent” and “very good” attention of their parents, got the high score in English subject, while the students who got “good” attention of their parents’ in studying English, got the lower score. It’s mean that they need more attention of their parents in learning English to get the higher score. It can be the place of the study, the time table, the tools, the situation of learning, the guidance, or maybe they also need the added time to studying English, such as studying in the course, private, etc.

The parents’ attention in place of studying got percentage 75.42% in “very good” level. It can be assumed that they have a special room to study. And their parents give more attention for their children studying room such as the cleanliness and the bright of lamp.

The parents’ attention situation of learning got percentage 74.44% in “very good” level. It can be assumed that their parents give attention in studying English and their social intercourse. Their parents give them much time to study when they will have an examination and decrease their children duty when they will have an examination.

The parents’ attention in guidance of learning got percentage 66.36% in “very good” level. In this case, can be assumed that although this attention in “very good” level, but the students still need more attention in this item. Because, a lot of parents just hand something over their children education to the teacher in the school, without any added attention for their children education in the home. They don’t give any guidance to their children in studying in the home.

The parents’ attention in tools of learning got percentage 65.97% in “very good” level. This is the lowest parents’ attention for each item. The writer assumed that the parents gave enough attention in tools of learning, but they didn’t give any attention in the usage of the added tools in studying English, such as electric dictionary, the new books, etc. The parents just give the facility but they don’t give the attention in using it.

After analyzing the data from the result of score can be summed up that the percentage correlation of the parents’ attention toward the student’s English achievement is 46.24%, while the remainder is 53.76% is caused the other factor such as the student’s intelligent, the student’s activeness in the class, etc. The student’s English achievement of

the students of SD N 47 Jambi was “very good”. The parents’ attention to their children was “very good”. Based on the percentage of parents’ attention of each item, first, the parents’ attention in place of studying got percentage 75.42% in “very good” level. Second, the parents’ attention situation of learning got percentage 74.44% in “very good” level. Third, the parents’ attention in guidance of learning got percentage 66.36% in “very good” level. Forth, the parents’ attention in tools of learning got percentage 65.97% in “very good” level.

4. CONCLUSION

Based on the result of research and discussions above will get a conclusion as follows:

1. The parents’ attention toward the student’s English achievement is “very good”. The student who got “very good” attention is 29 students (80.56 %), and the student who still needs more attention is 7 students (19.44%).
2. The student’s English achievement in SD N 47 Jambi is “very good”. The student who got “very good” English achievement is 29 students (80.56%), and the student who got not enough good English achievement is 7 students (19.44%).
3. There is a correlation between the parents’ attention and the student’s English achievement, which the index correlation is 0.68. The parents’ attention gave the influence about 46.24%. So the student’s English achievement in SD N 47 Jambi isn’t definite by the parents’ attention, but it also definite by the other factor, such as the intelligence, the student’s activeness, etc.
4. In addition, the item of parent’s attention in the table time got the highest percentage of the questionnaire (81.42%) and the lowest one was the parents’ attention in tools of learning that got (65.97%).

Based on the result of the research, it can be given some suggestions as follow:

1. The parents have to give more attention to their children, so they can reach the good achievement especially in English subject.
2. It’s needed more increasing English teaching-learning process in fourth grade students of SD N 47 Jambi, so the student’s English achievement is better in the future, such as increasing the controlling of the student’s studying process, especially the usage of the learning facility was given.
3. It’s needed the continuity research about the other indicators of the parents’ attention, which give the influence of the English achievement.

REFERENCES

- [1.] Bogdan, R. C. & Biklen, S. K. (1982). *Qualitative Research for Education: An Introduction to the Theory and Methods*. Boston : Allyn and Bacon, Inc.
 - [2.] Gay, L 1987. *Educational Research*. Columbus: Merill Publishing Company.
 - [3.] Hakim, Thursam. 2002. *Belajar Secara Efektif*. Jakarta: Puspa Swara
 - [4.] Harmer, Jeremy. 2007. *The Practice of English Language Teaching Fourth Edition*. Pearson Education.
 - [5.] Natawijaya, rochman, 1993. *Psikologi Pendidikan*. Jakarta : Depdiknas.
 - [6.] Nunan, David. 1991. *Language Teaching Methodology*. New York: Phoenix ELT.
 - [7.] Purwanto, M.N.2008. *Prinsip-Prinsip dan Teknik Evaluasi Pengajaran*. Bandung: PT Remaja Rosdakarya
 - [8.] Slameto, 2003. *Belajar dan Faktor-faktor yang Mempengaruhinya*. Jakarta: Asdi Mohasatya.
- Ten Have, Paul. (2004). *Understanding Qualitative Research and Ethnomethodology*. Sage Publication.

Optimizing the Learning Outcomes for English Young Learners Through Developing a Child-Friendly Textbook Model

Sri Setyarini

English Department, Indonesia University of Education
Setyarini.engupi@yahoo.co.id

ABSTRACT

This research paper deals with developing a child-friendly textbook to optimize the English learning outcomes for young learners. The research was initiated from a phenomenon of the diversity of English language textbooks used in Elementary School (SD) in West Java. Such diversity appears to have a negative impact because the role of textbook as the second teacher or a resource is not maximal yet. This study applied Research and Development Method which was started previously by evaluating the used book in some schools in West Java based on the theories of young learners, criteria of the child-friendly textbook, and young learner characteristics. The evaluation results and comments from the teachers and students as users were considered as inputs to develop the child-friendly textbook. Then, the developed book was tried out in some elementary schools to see appropriateness of the books being used in the learning process which was completed by comments from the teachers and students collected from the interviews. The findings showed that the child-friendly textbook was acceptable by the teachers and young learners because it offers interesting topics which are suitable with the young learner world. It also can be seen from the language used in the textbook is easy to understand with familiar words for the learners. The friendliness of the book can be seen from interesting and colorful pictures given in the books. Overall, the child-friendly textbook can optimize the English learning outcomes of young learners that can be seen either from their scores and their language performance after they used this textbook for a semester.

Keywords: *optimizing, textbooks, young learners, child-friendly, learning outcomes*

1. Introduction

The publication of textbook for all levels of students is increasing by time to time and make teachers, parents and even the students to be confused to choose which book is the best. They concern a lot to this problem because they believe that the role of textbook is important and it is called the second resource after the teacher as the first one (Hutchinson and Torres, 1994). However, the role of the textbook seems not to give optimal contribution to the students which is balanced with high learning outputs as expected (Hutchinson and Torres, 1994: 33). Such difficult problems appear for several factors: 1) materials given in the textbook are difficult and unfamiliar for the students (above their level; 2) The exercises tend to be monotonous and not optimal facilitate the students' learning process; 3). The book performance (picture, colours, and layout) are not suitable with the levels. Dealt with those statements, this paper presents and discusses the research findings of developing child-friendly textbook of English subject for Elementary students to optimise the learning outputs.

2. Theoretical Review

The followings will discuss theoretical reviews related to characteristics of child-friendly textbooks and the roles of textbook for elementary students.

2.1. Objectives and Characteristics of child friendly Textbook

According to Garinger (2002), textbook has different purposes. For teachers, textbook serves as the main hand out, material support, inspiration for learning process, and curriculum. Hutchinson and Torres (1994) state that many teachers choose the textbook in order to assist them in managing the class. By using good textbook means saving the time, more purposeful, more directive for classroom discussion. In addition, suitable textbook is helpful in giving tasks and make the learning process easier. Therefore, the most important thing for teachers, child friendly textbook can give a sense of peace and safety for the students (Garinger:2002:174)..

For the students, textbook is a framework or guidelines that can assist them in their learning both inside, and outside the classroom. Consequently, child-friendly textbook makes them learn better, faster, clearer (Hutchinson and Torres, 1994). Generally, textbook is divided into two types: traditional and communicative text book. However, It's not easy putting a textbook in any of the categories given between the two categories. The followings are some criterias of child-friendly textbook in Richards (1990: 56-62) are:

- Contains principles of a good learning theory.
- Ability to generate and maintain interest and attention to the learners.
- Suitable with In line with the learners background (cultural, social, and characteristics).
- Provide examples of how the language is used in everyday life.
- Provide meaningful activities in learning.

2.2. The Roles of child friendly Textbook in English Language Learning Process for Elementary Students (SD)

Besides implementing appropriate curriculum, teaching strategies, testing and evaluation, the role of textbooks is also important as the other components in learning process as a resource and essential guidance for students in their learning although there are some other components listed on the teaching material, including: Handbook (textbook), exercise book (exercise book), books, pictures, cards, posters, songs and rhymes, CDs and tapes, and so forth (Suyanto, 2004-63). Textbook as teaching materials will help students learn English and if the material could be utilized optimally, it will help students be more optimal (Moon, 2000-82).

3. Characteristics of Young Learners (Elementary students)

In general, textbooks can not be categorized as good, average or bad ones if they do not pay attention to the the learners level written in the objectives of learning (Hutchinson & Waters, 1987). Richards (1990) identifies a child-friendly textbook has several characteristics as:

- 1) Ability to generate and maintain interest and attention of the learners.
- 2) Cover principles of a good learning theory.
- 3) Suitable with the learner's background (social, cultural, age. Economy,etc)
- 4) Provide practical examples and clear how the language is used in their daily conversation
- 5) Provide meaningful activity or exercise for the learner

4. Research Methods

In the process of implementation, Research and Development Method (R&D) was done through some steps as follow, namely:

- 1) a preliminary study,
- 2) textbook model development,
- 3) validation of the model. Overall, the method of the study can be seen in the flow chart below:

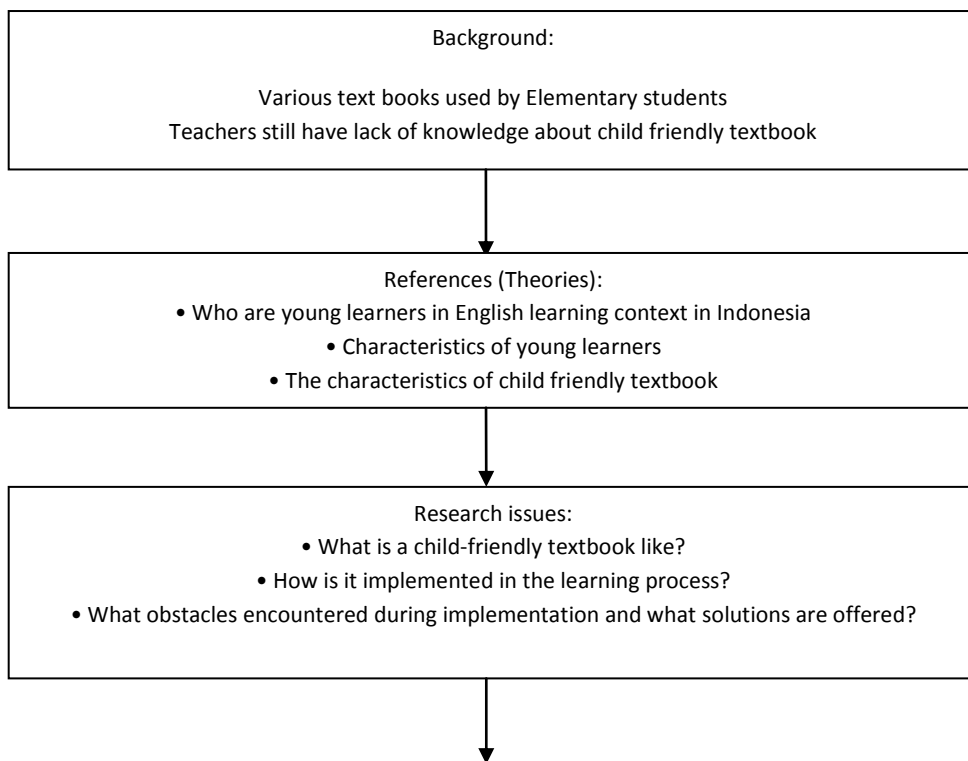
4) Subjects Research

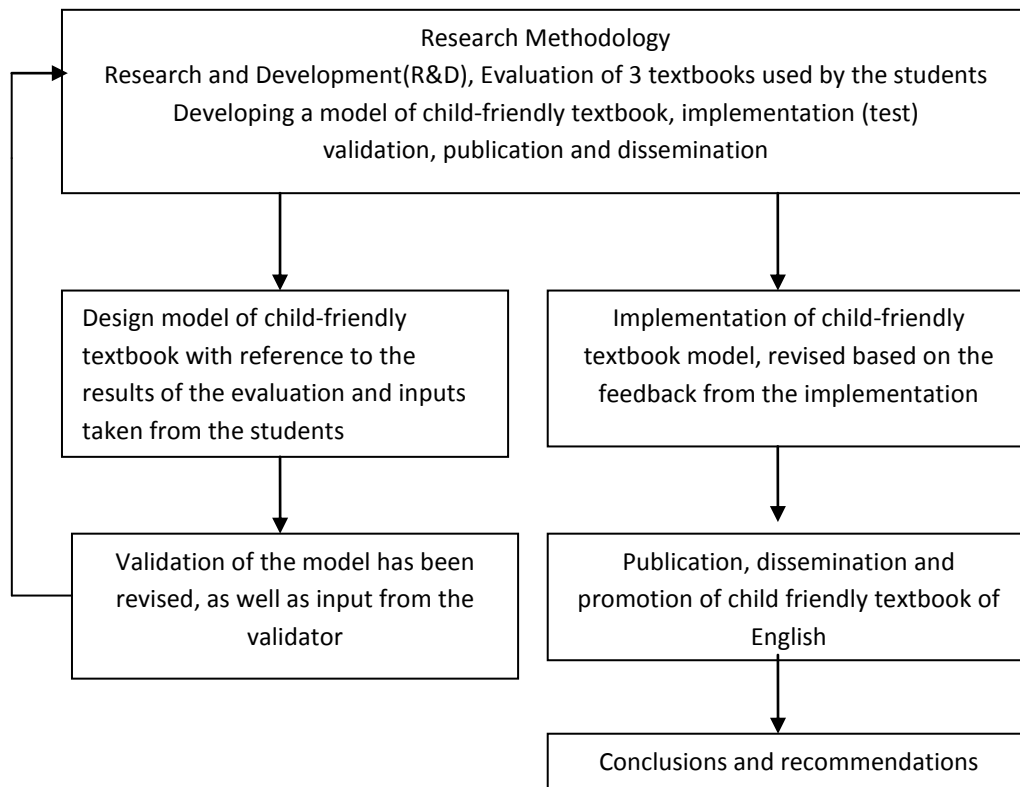
Three textbooks used by students of Elementary school were elected as the subjects to be analysed.

5) Research Instruments

There were three instruments used to collect the data, namely: observations, interviews with teachers and students, and questionnaires to be filled either by the students or teachers.

Overall, the method of the study can be seen in the flow chart below:





5. Findings and Discussion

5.1. Results of evaluating 3 textbooks for grade 4 students in West Bandung Regency

In Evaluating textbooks, the research team used the assessment format principles which contain 3 main criterias, namely the contents (materials), language and appearance (presentation) (Suyanto: 2003-47). The assessment of these three aspects are clearly outlined in the article below

5.1.1 Content (material)

Overall, the textbooks have presented good contents or materias. It can be seen from the topics whic are interesting for the learners. However, those three books do not accomodate good exercises yet because the exercises are monotonous so that all chapters in the books have the same forms. These materials can make the students bored and they are not eager to learn through play, songs, puzzles, etc. (Mustafa: 2006). Moreover, one of those three books gives inappropriate materials which are in line with the learners' characteristics. As a result, the materials may cause the learners bored in their study and even they found difficulties in using their textbook. Such condition is less supportive of the learning process because children learn best when they encounter what they have learned (Wong Fillmore: 1985). Referring to the opinion, a good writer needs to pursue the completion of the material which is related to the previous topics.

5.1.2. Language

Dealing with the language found in the textbooks, in general they have used appropriate and understandale language. It can be proved from the simple sentences and simple grammar. However, some unfamiliar and difficult words are still found and those can make the learners difficult to understand the textbooks. In addition, some unfamiliar words arre not completed with the phonetic transcription which can help the learners how to pronounce them well.

5.1.3 Display (Presentation)

In general, the textbooks are displayed clearly and in accordance with the purpose of learning, although not all units in the books. Some inappropriate displays are found because there are some unsuitable pictures put in different topics. So, the functions of pictures are not optimal. Moreover, some layouts are not placed appropriately because the topics and pictures are not matched (Tomlinson: 1998).

5.2 The data analysis results of questionnaires from the teachers

Overall, the teachers claimed that an important reason to use the textbooks is the availability of the book and it is so easy to get or buy. While the other teacher stated that the teachers chose the book because the book is available in stores within easy driving distance of their homes. While the other teachers choose textbooks because of the performance (displays). With regard to the role and function of textbooks, all teachers recognize that textbooks can be used as a second source of student learning after the teacher. Students can be given the task of doing exercises at home without interrupting a very limited class hours.

5.3. The data analysis result of questionnaires from the Students

The data analysis result from questionnaire showed that of the four students stated that they liked the textbooks they use because the language is easy to understand and the topics are quite familiar with their world so that they encounter vocabulary they met in the books are easy to remember, although there are still some foreign vocabulary that is difficult to understand the meaning and how to pronounce the words since they were not accompanied by phonetic transcriptions.

6. Conclusion

First, the textbooks used by fourth grade student at West Bandung regency are quite appropriate based on 3 important aspects covered, e.g. contents (materials), language, and presentation. Considering the result of data analysis, it is claimed that all the three textbooks are considered as good book, although some weaknesses were still found such as some unfamiliar topics and vocabulary, complex sentences, unclear layout, and the monotonous exercises which seems not to facilitate the students optimally.

7. Suggestion

After completing this study and taking into account the results of the study, some suggestions need to be offered include:

- a. Teachers should understand the criteria for a child-friendly textbook by considering from 3 main criterias, namely: content, language and presentation.
- b. Teachers should optimalise the exercises given in the textbook maximally so that the role of the book as the second resource can be realised.

REFERENCE

- Abraham, R.. Field Independence-Dependence and Teaching Grammar. *TESOL Quarterly*, 1985, pp. 689-702.
- Allwright, R. I, What Do We Want Teaching Materials For? In Tom Hutchinson and Eunice Torres (ed.). *The Textbook as Agent of Change. ELT Journal Volume 48/4. Oxford University Press*. 1981
- Brown, H. Douglas. *Teaching by Principles (An Interactive Approach to Language Pedagogy)* "2nd ed. New York: Addison Wesley Longman, Inc. 2001
- Damayanti, Ika Lestari. 2007. *Dependent Females, Independent Males: Gender Construction in Visual Images in English Language Textbooks for Primary School Students*. Makalah.
- Dawn, Garinger. 2002. Success in English Teaching In Nia Kurniawati. *An Investigation of Structure of Group Activities in English Textbooks Used in Senior High Schools in Indonesia*. Unpublished paper.
- Grant, Neville. 1987. *Making the Most of Your Textbook*. England: Longman Group UK Limited.
- Hamied, Fuad Abdul. 2001. *English Language Education in Indonesia*. Hawaii.
- Hutchinson, Tom dan Eunice Torres. 1994. The Textbook as Agent of Change. *ELT Journal Volume 48/4. Oxford University Press*.
- Kang, Shumin. Learning Styles (Implication for ESL/EFL Instruction). *ESL Journal Vol. 37, No.4, 1999*

- Kern, Richard. 2000. *Literacy and Language Teaching*. Oxford: Oxford University Press.
- Pusat Perbukuan, 2003. *Standar Penilaian Buku Pelajaran Bahasa Inggris*. Jakarta: Departemen Pendidikan Nasional.
- Rahmani, Mira. 2009. *Gender Representation in Three English Textbooks for Elementary School Students*. Skripsi pada Universitas Pendidikan Indonesia.
- Reiser, Robert A. dan Walter Dick. 1996. *Instructional Planning: A Guide for Teachers*. Second edition. Boston: Allyn and Bacon.
- Sims, R. dan S. Sims. 1995 (Eds.). *The importance of learning styles: Understanding the implications for learning, course design, and education*. Westport, CT: Greenwood Publishing Group, Inc.
- Smith, L. dan J. Renzulli. 1984. Learning style preference: A practical approach for classroom teachers. *Theory into Practice*, 23, 1, pp. 45-50. In Shumin Kang. *Learning Styles (Implication for ESL/EFL Instruction)*. *ESL Journal Vol. 37, No.4, 1999*.
- Sprat, Mary, Alan Pulverness, dan Mellanie Williams. 2005. *the Teaching Knowledge Test (The TKT) Course*. Cambridge: Cambridge University Press.
- Sundayana, Wahyu dkk. 2005. *Kesesuaian Buku Ajar Bahasa Inggris di Sekolah Dasar dengan Karakteristik Pembelajar Usia Dini: Studi Kasus 10 Buku Ajar di Bandung*. Laporan penelitian.
- Suyanto, Kasihani. 2004. Pengajaran Bahasa Inggris di Sekolah Dasar dalam Wachyu Sundayana et al. *Kesesuaian Buku Ajar Bahasa Inggris di Sekolah Dasar dengan Karakteristik Pembelajar Usia Dini: Studi Kasus 10 Buku Ajar di Bandung*.
- Swan, M. 1992. The textbook: bridge or wall? In Tom Hutchinson and Eunice Torres (ed.). *The Textbook as Agent of Change*. *ELT Journal Volume 48/4*. Oxford University Press.
- Yusuf, Fazri Nur. 2003. *What's right about LKS?* Makalah.

Biography

Nama dan Gelar Lengkap : Dra. Sri Setyarini, M.A.
Tempat dan Tgl. Lahir : Klaten, 29 Desember 1963
Jenis Kelamin : Perempuan
NIP : 131 877 085
Pangkat/Gol : Lektor Kepala/IVA
Jabatan Akademik : Lektor Kepala
Bidang Kepakaran : Pengajaran Bahasa Inggris Untuk Usia Dini
dan Linguistik Terapan

1. Sebagai Instruktur pada Program Pelatihan guru Bahasa Inggris SMP dan SMA baik tingkat provinsi maupun nasional
2. Sebagai konsultan yang menangani Strategi pembelajaran bahasa Inggris di Lembaga Pendidikan TriDaya, Bandung
3. Sebagai pelatih guru SMA dalam menyiapkan Sekolah Bertaraf Internasional
4. Sebagai instruktur pada Program Pelatihan Guru Bahasa Inggris Sekolah Dasar
5. *Reviewer* Buku teks Bhs Inggris 2007-2009- Pusat Perbukuan Nasional, Jakarta
6. *Language Advisor* untuk pengajaran anak usia dini



Perpustakaan Nasional Republik Indonesia

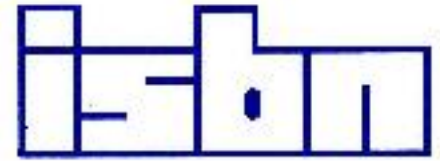
National Library of Indonesia

National ISBN Agency

Jalan Salemba Raya 28 A, Jakarta 10430 - Indonesia

Telepon : 021 - 3101411 psw. 437; 021 - 68293700 - 92920979, Telp/fax. 021 - 3927919, 31908479 : PO.Box 3624 Jakarta

Email : isbn.indonesia@gmail.com ; http://www.pnri.go.id



No. : 3221/E.8/p/05.2013
Hal. : Hasil Permohonan ISBN

Yth. Pimpinan UNY Press
u.p. Bagian Penerbitan
di Yogyakarta

Dengan ini disampaikan hasil permohonan ISBN, sebagai berikut :

- 1. Proceedings International Conference on Educational Rserach and Innovation 2013,
16-17 Mei 2013 : strethening the ties between education and research**

ISBN 978-602-7981-04-1

Agar dapat digunakan sebagaimana mestinya.

Jakarta, 15 Mei 2013

Editor ISBN/KDT



www.uny.ac.id



KOMPLEKS FAKULTAS TEKNIK UNY
Kampus Karangmalang Yogyakarta, 55231
Telp. (0274) 599346
Email : unypress.yogyakarta@gmail.com