

## RINGKASAN

### PENGEMBANGAN PERANGKAT DAN MEDIA PEMBELAJARAN IPA DAN FISIKA DI SD, SMP, DAN SMA TERINTEGRASI PENDIDIKAN KEBENCANAAN

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Penelitian ini bertujuan untuk memanfaatkan modul gempa bumi yang sudah berhasil dikembangkan melalui hibah penelitian STRANAS tahun 2009 untuk pembelajaran di sekolah. Penelitian ini mengembangkan dan menghasilkan (1) buku bencana alam gempa bumi, tsunami, gunung api, dan longsor, (2) perangkat pembelajaran dan media pembelajaran IPA di SD dan SMP serta Fisika di SMA yang terintegrasi pendidikan kebencanaan gempa bumi, tsunami, gunung api, dan longsor yang layak.

Penelitian ini merupakan penelitian pengembangan dengan *4D Models*. Pada tahap *Define*, merencanakan materi buku bencana gempa bumi, tsunami, gunung api, dan longsor, dan identifikasi SK dan KD IPA kurikulum SD dan SMP serta Fisika kurikulum SMA yang berpotensi diintegrasikan pendidikan kebencanaan. Tahap *Desain*: mengembangkan buku, perangkat pembelajaran (silabus, RPP, dan LKS), dan media pembelajarannya. Tahap *Develop*: Validasi draft produk oleh validator ahli – revisi, uji coba pembelajaran 1 – revisi, dan uji coba pembelajaran 2 – revisi. Tahap *Disseminate*: implementasi perangkat pembelajaran terintegrasi pendidikan kebencanaan dan media pembelajarannya di SD, SMP, dan SMA yang rawan terhadap satu atau lebih bencana. Data penelitian ini adalah penguasaan materi IPA/Fisika dan materi bencana, tingkat kesadaran bahwa siswa tinggal di daerah rawan bencana, pemahaman akan pentingnya kesiapsiagaan. Data penelitian dijangkau melalui angket, tes, dan pengamatan. Analisis data menggunakan analisis deskriptif kualitatif untuk mendapatkan perangkat pembelajaran terintegrasi pendidikan kebencanaan dan media pembelajarannya.

Telah teridentifikasi SK dan KD yang berpotensi terintegrasi pendidikan kebencanaan gempa bumi, tsunami, gunung api, dan longsor untuk mata pelajaran IPA di SD adalah SK 10, KD (10.1, 10.2, 10.3), SK 11, KD 11.3 di kelas IV semester 2, serta SK 7, KD 7.6 di kelas V semester 2; pada tingkat SMP adalah SK 1, KD 1.5 dan SK 6, KD 6.1 di kelas VIII semester 2; pada tingkat SMA yaitu SK 1, KD (1.5, 1.6) di kelas XI semester 1 dan SK 1, KD (1.1, 1.2, 1.3) di kelas XII semester 1. Telah dihasilkan perangkat pembelajaran dan media pembelajaran yang layak digunakan untuk pembelajaran fisika yang terintegrasi pendidikan kebencanaan. Pembelajaran fisika terintegrasi pendidikan kebencanaan, berakibat pada meningkatnya kesadaran siswa bahwa mereka tinggal di daerah yang rawan bencana dan meningkatkan kesiapsiagaan siswa pada bencana alam.

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Kata kunci: perangkat pembelajaran, media pembelajaran, pendidikan kebencanaan

## ABSTRACT

### **THE DEVELOPMENT OF SCIENCE AND PHYSICS LEARNING MEDIA FOR ELEMENTARY SCHOOL, JUNIOR HIGH SCHOOL, AND HIGH SCHOOL INTEGRATED WITH DISASTER EDUCATION**

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This research aims to exploit the earthquake module which had been successfully developed for school learning through the STRANAS research grant in 2009. This study develop and produce (1) books on natural disasters: earthquakes, tsunamis, volcanoes, and landslides, (2) learning tools and science learning media for elementary school, junior high school, and high school physics integrated with decent earthquakes, tsunamis, volcanoes, and landslides disaster education.

This research is a development research using 4D Models. In the Define phase , planning was conducted for topics used in the book on earthquakes, tsunamis , volcanoes , and landslides, identification was done for SK and KD in science curriculum used in elementary and junior high school, and physics curriculum in high school which can be integrated with disaster education. In the Design phase: develop books , learning tools ( syllabi , lesson plans , and worksheets ) , and learning media. In the Develop phase: Validating product draft by expert validator - revision , learning trials 1 - revision , and test session 2 - revision . In the Disseminate phase: implementating the learning media and learning tools integrated with disaster education in elementary, junior high school, and high school whichvulnerable to one or more natural disaster. The data for this study was the mastery of materials in science/physics and materials adisaster, the level of awareness that students live in disaster-prone areas , an understanding of the importance of preparedness . Research data were collected through questionnaires , tests , and observations . Analysis of the data used qualitative descriptive analysis to obtain the learning tools integrated with disaster education and learning media.

SK and KD had been identified which can be integrated with disaster education earthquakes, tsunamis, volcanoes, and landslides for science teaching in the elementary school, they were SK 10, KD (10.1, 10.2, 10.3), SK 11, 11.3 KD IV graders in the 2nd half, and SK 7, KD 7.6 in the 2nd half of grade V; at junior level is SK 1, SK KD 1.5 and 6, KD 6.1 in the 2nd half of grade VIII; at the high school level, there were SK 1, KD (1.5, 1.6) in the first semester of grade XI and SK 1, KD (1.1, 1.2, 1.3) in the first half of grade XII. Had been produced decent learning tools and learning media integrated to disaster education used for learning physics. Learning physics integrated todisaster education, result in increasing students' awareness that they live in areas prone to disasters and improve preparedness of students to natural disaster.

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Keywords: learning device, learning media, disaster education