

ABSTRACT

Fitrah Ayu. 2020. “Pengembangan *E-Book* Fisika Terintegrasi Materi Mitigasi Bencana Gempa Bumi Berbasis *Discovery Learning*”. Tesis. Program Studi Magister Pendidikan Fisika Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Negeri.

West Sumatera was one of Indonesia subarea which was frequently shook by earthquake. Most of people were uninformed about the handling of this situation which had worsening effect, because earthquake was unpredictable catastrophe. School education was believed could be the right institution for giving understanding about earthquake. Earthquake mitigation could be integrated into study resource. One of study resource that could be developed based on 21th century learning process was electronic book or e-book. The aim of this research was to rendering integrated Physics e-book based on Discovery Learning which categorized as valid, practical, and effective.

Type of this research was Research and Development (R&D). The e-book development was in accordance with Plomp development model. This model consisted of three stages: preliminary research phase, development or prototyping phase, and assessment phase. The research data were graduate competence data, assessment, learning activity, study material, pupils, earthquake mitigation, validity, practicality, and effectivity. Assessment instrument were introductory questionnaire, validation sheet, practicality sheet, self-assessment sheet, multiple choice questions, and performance assessment sheet. Techniques of data collection that being used were analysis of preliminary research, validity analysis, practicality analysis, and effectivity analysis.

The result of this research was Integrated Physics e-book of earthquake mitigation based on Discovery Learning with category of valid, practical, and effective. The implication of the research showed that Integrated Physics e-book of earthquake mitigation based on Discovery Learning was effective to be used in learning process to maximalizing integrated learning process on earthquake mitigation. The pupils had to be given socialization about the importance of mitigation education. The conclusion of the research was Integrated Physics e-book of earthquake mitigation based on Discovery Learning was valid, practical, and effective for increasing the pupils competencies, which includes competencies of attitude, knowledge, and skill.

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Sumatera Barat merupakan salah satu wilayah di Indonesia yang sering dilanda gempa bumi. Masyarakat yang tidak tahu bagaimana cara menghadapi peristiwa gempa bumi akan memperburuk keadaan, karena gempa bumi merupakan bencana alam yang terjadi namun tidak terprediksi. Sekolah diyakini menjadi jalur yang tepat untuk memberikan pemahaman terhadap mitigasi bencana gempa bumi. Mitigasi bencana gempa bumi dapat diintegrasikan ke dalam sumber belajar. Salah satu sumber belajar yang dapat dikembangkan sesuai dengan pembelajaran abad 21 yakni buku elektronik atau dikenal dengan sebutan *electronic book (e-book)*. Tujuan penelitian ini adalah untuk menghasilkan *e-book* Fisika terintegrasi materi mitigasi bencana gempa bumi berbasis *discovery learning* dengan kategori valid, praktis, dan efektif.

Jenis penelitian ialah *Research and Development (R&D)*. Pengembangan *e-book* mengacu pada model pengembangan Plomp. Model pengembangan Plomp terdiri atas tiga tahap yakni *preliminary research phase*, *development or prototyping phase*, dan *assessment phase*. Data penelitian ialah data kompetensi lulusan, penilaian, kegiatan pembelajaran, materi, peserta didik, mitigasi bencana gempa bumi, validitas, praktikalitas, dan efektivitas. Instrumen penilaian ialah angket pendahuluan, lembar validasi, lembar praktikalitas, lembar penilaian diri, soal objektif, dan lembar penilaian kinerja. Teknik pengumpulan data yang digunakan adalah analisis *preliminary research*, analisis validitas, analisis praktikalitas, dan analisis efektivitas.

Hasil penelitian ialah *e-book* Fisika terintegrasi materi mitigasi bencana gempa bumi berbasis *discovery learning* dengan kategori valid, praktis, dan efektif. Implikasi penelitian menunjukkan bahwa *e-book* Fisika terintegrasi materi mitigasi bencana gempa bumi berbasis *discovery learning* efektif digunakan dalam pembelajaran, untuk memaksimalkan proses pembelajaran terintegrasi materi mitigasi gempa bumi, peserta didik perlu diberikan sosialisasi tentang pentingnya pendidikan mitigasi. Kesimpulan penelitian adalah *e-book* Fisika terintegrasi materi mitigasi bencana gempa bumi berbasis *discovery learning* yang valid, praktis, dan efektif untuk meningkatkan kompetensi peserta didik, baik kompetensi sikap, pengetahuan, maupun keterampilan.