

**PENGEMBANGAN *MOBILE* MEDIA “GeMBul” DALAM PEMBELAJARAN  
IPA UNTUK MENINGKATKAN PEMAHAMAN KONSEP DAN LITERASI  
TEKNOLOGI SISWA**

**THESIS**

Diajukan untuk Memenuhi Sebagian dari Syarat untuk Memperoleh Gelar Magister  
Pendidikan Program Studi Pendidikan IPA



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PEMAHAMAN KONSEP DAN LITERASI TEKNOLOGI SISWA***

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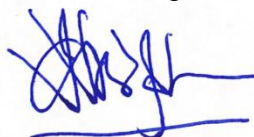
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## **Abstrak**

Perkembangan teknologi pada era revolusi industri 4.0 mengharuskan guru untuk mengintegrasikan teknologi dalam pembelajaran. Selain itu, guru juga harus mempersiapkan siswa untuk dapat beradaptasi dengan perkembangan teknologi yang semakin pesat. Tujuan penelitian ini adalah untuk menjawab permasalahan yang dihadapi oleh guru dan siswa saat ini yaitu dengan mengembangkan *mobile* media “GeMBul” dalam Pembelajaran IPA. Media “GeMBul” diharapkan dapat meningkatkan pemahaman konsep dan literasi teknologi siswa. Model pengembangan ADDIE (*Analysis, Design, Development, Implementation, and Evaluation*) digunakan dalam mengembangkan media “GeMBul”. Subjek penelitian ini adalah siswa kelas VII di salah satu SMP negeri di kota Pariaman. Penelitian menggunakan desain pembelajaran *one-group pretest-posttest design* dalam implementasi di kelas. Berdasarkan hasil analisis data disimpulkan bahwa: (1) *Mobile* media “GeMBul” dikembangkan berbasis *games* memiliki karakteristik (a) terdapat menu gerhana matahari dan bulan yang masing-masing terdiri atas 4 misi dan 3 misi yang harus diselesaikan oleh siswa, (b) menggunakan multi representasi seperti teks, diagram, animasi, gambar, video yang sesuai dengan kurikulum, (c) materi dan karakteristik siswa pada menu planet-planet, teleskop dan pasang surut air laut, dan (d) dilengkapi dengan kegiatan-kegiatan dan soal evaluasi untuk membantu siswa dalam meningkatkan pemahaman konsep dan literasi teknologi siswa, (e) Siswa dan guru berpendapat bahwa penggunaan *mobile* media “GeMBul” dalam pembelajaran sangat praktis digunakan dalam pembelajaran IPA. (2) Peningkatan pemahaman konsep siswa setelah menggunakan *mobile* media “GeMBul” termasuk dalam kategori tinggi. (3) Peningkatan literasi teknologi siswa setelah menggunakan *mobile* media “GeMBul” termasuk dalam kategori tinggi. Hasil uji signifikansi pemahaman konsep dan literasi teknologi siswa menunjukkan terdapat perubahan yang signifikan antara nilai *pretets* dan *posttest* sebelum dan setelah menggunakan *mobile* media “GeMBul”. Berdasarkan hasil pengembangan dan implementasi *mobile* media “GeMBul” dapat digunakan oleh siswa dan guru dalam meningkatkan hasil belajar dan menciptakan pembelajaran yang lebih efektif.

**Kata Kunci:** *Mobile* Media, Gerhana Bulan, Gerhana Matahari, Pemahaman Konsep, Literasi Teknologi, Pendidikan IPA

# **DEVELOPMENT OF MOBILE MEDIA "GeMBul" IN SCIENCE LEARNING TO IMPROVE UNDERSTANDING OF STUDENTS' CONCEPTS AND TECHNOLOGY LITERACY**

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## **Abstract**

The development of technology in the era of industrial revolution 4.0 requires teachers to integrate technology into learning. In addition, teachers must also prepare students to be able to adapt to the rapid development of technology. The purpose of this research is to answer the problems faced by teachers and students today by developing mobile media "GeMBul" in IPA Learning. "GeMBul" media is expected to improve the understanding of students' concepts and technological literacy. The ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation) is used in developing the "GeMBul" media. The subject of this study was a class VII student at one of the state junior high schools in Pariaman city. The research uses one-group pretest-posttest design learning in classroom implementation. Based on the results of the data analysis it was concluded that: (1) Mobile media "GeMBul" developed based on games has a characteristic (a) there is a menu of solar and lunar eclipses consisting of 4 missions and 3 missions that must be completed by students, (b) using multi-representations such as text, diagrams, animations, images, videos that are following the curriculum, (c) material and characteristics of students on the menu of planets, telescopes, and tides, and (d) equipped with activities and evaluation questions to assist students in improving understanding of students' concepts and technological literacy, (e) Students and teachers argue that the use of mobile media "GeMBul" in learning is very practically used in the learning of IPA. (2) Improved understanding of student concepts after using mobile media "GeMBul" falls into the high category. (3) Improvement of students' technology literacy after using mobile media "GeMBul" is in the realm of high category. The results of the test on the significance of understanding concepts and technological literacy of students showed there was a significant change between the value of pretest and posttest before and after using mobile media "GeMBul". Based on the results of the development and implementation of mobile media "GeMBul" can be used by students and teachers in improving learning outcomes and creating more effective learning.

**Keywords:** Mobile Media, Lunar Eclipse, Solar Eclipse, Concept Understanding, Technology Literacy, Natural Science Education

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