

**THE DEVELOPMENT OF ‘CHAVABOT’ AS A LEARNING MEDIA
THAT CAN FACILITATE STUDENTS CRITICAL THINKING IN
EARTHQUAKES AND MITIGATION TOPIC**

RESEARCH PAPER

Submitted as Requirement to Obtain Degree of *Sarjana Pendidikan* in
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The Development Of 'Chavabot' as a Learning Media That Can Facilitate Students Critical Thinking in Earthquakes and Mitigation Topic

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Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Pendidikan pada Program Studi *International Program on Science Education (IPSE)* Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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FACILITATE STUDENT CRITICAL THINKING IN EARTHQUAKES AND
MITIGATION TOPIC**

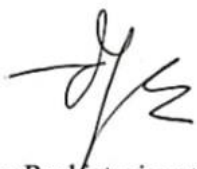
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DECLARATION

I do hereby declare that every aspect was written in this research paper entitled “The Development of ‘Chavabot’ as a Learning Media that Can Facilitate Students Critical Thinking in Earthquakes and Mitigation Topic” is the original result of my idea, efforts, and works without copying or plagiarizing from other papers. The theories, opinions and others that contained in this paper have been quoted or referenced based on scientific code from UPI and under scientific ethics that applies in scholarly society. This declaration is created truthfully and consciously. When an infringement towards scientific ethics is subsequently found or if there is a claim of any others towards the authenticity of this research paper, hence I am willing to be responsible and accept academic sanctions corresponding to the rules.

Bandung, August 2023

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ABSTRACT

Critical thinking skills are the main competency in learning (Permendikbud, 2013). Meanwhile, in the 2018 PISA (Program for International Student Assessment) which involves high-level thinking skills that can directly review critical thinking skills, Indonesia is ranked 73 out of 78 countries. One of the factors that can affect critical thinking skill is the use of media in learning which is very potential to build critical thinking skills and problem solving. Therefore, this study aims to develop a website-based chatbot as a learning media to facilitate student critical thinking in earthquake and mitigation topic. This research uses the development method with the ADDIE model, consist of analysis, design, development, implementation, and evaluation. The analysis stage divided into analysis of needs, characteristics, and topic. Then, in the design stage consist of flowchart and storyboard making. In the development stage, the learning media developed based on design output. In the implementation stage, the learning media tested to the students and teacher. The last is the evaluation stage, which includes the calculation of percentage data gathered from students and science teachers and the data validation by experts calculated using Aiken’s Variable formula. Expert judgment results got a high value of 0.81 with the criteria of high validity. The questionnaire results from teacher and students shows different value, 94% from teachers which indicates very good and 66% from students which categorize acceptable. These findings collectively indicate the feasibility of using chatbot based learning media in the earthquakes and mitigation topic to facilitates students critical thinking.

Key Words: *Chatbot, Critical Thinking, Earthquakes and Mitigation*

**PENGEMBANGAN CHAVABOT SEBAGAI MEDIA PEMBELAJARAN
YANG DAPAT MEMFASILITASI BERPIKIR KRITIS SISWA PADA
TOPIK GEMPA DAN MITIGASI**

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ABSTRAK

Keterampilan berpikir kritis merupakan kompetensi utama dalam pembelajaran (Permendikbud, 2013). Sementara itu, pada PISA (Program for International Student Assessment) tahun 2018 yang melibatkan kemampuan berpikir tingkat tinggi yang dapat mengulas langsung kemampuan berpikir kritis, Indonesia berada di peringkat 73 dari 78 negara. Salah satu faktor yang dapat mempengaruhi kemampuan berpikir kritis adalah penggunaan media dalam pembelajaran yang sangat potensial untuk membangun kemampuan berpikir kritis dan pemecahan masalah. Oleh karena itu, penelitian ini bertujuan untuk mengembangkan chatbot berbasis website sebagai media pembelajaran untuk memfasilitasi berpikir kritis siswa terhadap topik gempa bumi dan mitigasi. Penelitian ini menggunakan metode pengembangan dengan model ADDIE yang terdiri dari analisis, desain, pengembangan, implementasi, dan evaluasi. Tahap analisis dibagi menjadi analisis kebutuhan, karakteristik, dan topik. Kemudian pada tahap desain terdiri dari pembuatan flowchart dan storyboard. Pada tahap pengembangan, media pembelajaran dikembangkan berdasarkan hasil pada tahap desain. Pada tahap implementasi, media pembelajaran diujicobakan kepada siswa dan guru. Terakhir adalah tahap evaluasi yang meliputi penghitungan persentase data yang dikumpulkan dari siswa dan guru IPA serta validasi data oleh pakar yang dihitung dengan menggunakan rumus Aiken's Variable. Hasil expert judgment memperoleh nilai tinggi sebesar 0,81 dengan kriteria validitas tinggi. Hasil angket dari guru dan siswa menunjukkan nilai yang berbeda-beda, 94% dari guru menunjukkan sangat baik dan 66% dari siswa dikategorikan dapat diterima. Temuan ini secara bersama-sama menunjukkan kelayakan penggunaan media pembelajaran berbasis chatbot pada topik gempa bumi dan mitigasinya untuk memfasilitasi berpikir kritis siswa.

Kata Kunci: Chatbot, Berpikir Kritis, Gempa Bumi dan Mitigasi

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