

ABSTRAK

PENGEMBANGAN MEDIA PEMBELAJARAN BERBASIS *WEBGIS* UNTUK MENINGKATKAN PEMAHAMAN KONSEP MATERI MITIGASI DAN ADAPTASI BENCANA KELAS XI SMA NEGERI 1 TERBANGGI BESAR

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Perubahan teknologi digital memberikan peluang untuk meningkatkan kualitas pendidikan terutama dalam inovasi media pembelajaran. Namun, fakta di lapangan menunjukkan bahwa penggunaan media pembelajaran masih terbatas yang hanya berfokus pada media cetak, sehingga dinilai kurang efektif dan menyebabkan siswa kesulitan memahami konsep materi. Penelitian ini bertujuan untuk: (1) mengembangkan media pembelajaran berbasis *webGIS* pada materi mitigasi dan adaptasi bencana, (2) menguji kelayakan media, dan (3) mengetahui peningkatan pemahaman konsep materi siswa setelah penggunaan media pembelajaran. Penelitian ini menggunakan metode *Research and Development* (R&D) yang berdasar pada tahap pengembangan menurut Borg and Gall (1989). Subjek uji coba diterapkan di kelas XI IPS 1 dan 2 SMA Negeri 1 Terbanggi Besar. Data diperoleh dari hasil validasi media dan hasil *pre-test* dan *post-test*. Hasil penelitian, yaitu: (1) media pembelajaran berbasis *webGIS* bernama MAPGeo yang dikembangkan melalui tahap pengembangan menurut Borg & Gall; (2) Hasil uji validasi media sebesar 80,33% (layak), validasi materi sebesar 85,83% (sangat layak), validasi praktisi sebesar 83,25% (sangat layak), validasi pengguna skala kecil sebesar 84,2% (sangat layak), dan pengguna skala sedang sebesar 76,3% (layak); (3) hasil uji *t-test* memperoleh nilai Sig. (2-tailed) $0,000 < 0,05$, yang berarti terdapat perbedaan signifikan pada pemahaman konsep materi mitigasi dan adaptasi bencana sebelum dan setelah menggunakan media pembelajaran berbasis *webGIS*; dan (4) perolehan nilai rata-rata *N-Gain* sebesar 0,56 atau 56,27%, menunjukkan bahwa media pembelajaran berbasis *webGIS* cukup efektif untuk meningkatkan pemahaman konsep materi mitigasi dan adaptasi bencana.

Kata kunci: media pembelajaran, *webGIS*, pemahaman konsep.

ABSTRACT

DEVELOPMENT OF WEBGIS-BASED LEARNING MEDIA TO IMPROVE UNDERSTANDING OF THE CONCEPT OF DISASTER MITIGATION AND ADAPTATION MATERIALS OF CLASS XI SMA NEGERI 1 TERBANGGI BESAR

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Changes in digital technology provide opportunities to improve the quality of education, especially in learning media innovation. However, the facts in the field show that the use of learning media is still limited which only focuses on print media, so it is considered less effective and causes students to have difficulty understanding material concepts. This research aims to: (1) develop webGIS-based learning media on disaster mitigation and adaptation materials, (2) test the feasibility of the media, and (3) determine the improvement of students' understanding of the concept of material after the use of teaching media. This research uses the Research and Development (R&D) method based on the development stage according to Borg and Gall (1989). The trial subjects were applied in class XI IPS 1 and 2 SMA Negeri 1 Terbanggi Besar. Data was obtained from the results of media validation and pre-test and post-test results. The results of the research are: (1) a webGIS-based learning media called MAPGeo which was developed through the development stage according to Borg & Gall; (2) The results of the media validation test were 80.33% (feasible), material validation was 85.83% (very feasible), practitioner validation was 83.25% (very feasible), small-scale user validation was 84.2% (very feasible), and medium-scale user was 76.3% (feasible); (3) the results of the t-test obtained a Sig. (2-tailed) score of $0.000 < 0.05$, which means that there was a significant difference in the understanding of the concept of disaster mitigation and adaptation materials before and after using webGIS-based learning media; and (4) the average N-Gain score of 0.56 or 56.27%, indicating that the webGIS-based learning media is quite effective to increase the understanding of the concept of disaster mitigation and adaptation materials.

Keywords: learning media, webGIS, concept understanding.