

**Pengembangan *Virtual Museum* Berbasis *Augmented Reality* Pada
Peninggalan Sarkofagus Di Museum Buleleng Untuk Meningkatkan Hasil
Belajar Sejarah Di SMA Lab Undiksha**

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ABSTRAK

Penelitian ini berfokus pada perancangan sarana instruksional berbasis Augmented Reality (AR) berformat museum maya yang mengupas artefak sarkofagus koleksi Museum Buleleng. Di samping proses konstruksi produk, investigasi ini turut menguji tingkat kevalidan, kepraktisan, serta kemandirian media tersebut dalam mendongkrak capaian kompetensi sejarah peserta didik di SMA Lab Undiksha. Kerangka metodologis yang diterapkan mengacu pada model Research and Development (R&D) dengan fondasi kerangka ADDIE yang terdiri atas lima tahapan utama: Analysis, Design, Development, Implementation, serta Evaluation. Prosedur pengumpulan fakta memanfaatkan teknik pengamatan, tanya jawab mendalam, kuesioner, dan instrumen ujian penguasaan materi, yang selanjutnya dianalisis melalui perpaduan pendekatan kuantitatif dan kualitatif deskriptif. Hasil penelaahan membuktikan bahwa produk ini memiliki derajat kevalidan yang luar biasa, yakni sebesar 85% dari validator media dan 97,05% dari validator bidang materi. Evaluasi tingkat keterpakaian juga menunjukkan kategori sangat praktis melalui capaian 88,33% penilaian tenaga pendidik, 81,33% pada tahap uji coba individual, dan 83,75% tatkala diuji pada kelompok skala kecil. Berkenaan dengan aspek signifikansi dampak, sarana digital ini terbukti mampu mengeskalasi hasil kognitif siswa, yang tercermin dari rerata nilai akhir (posttest) kelas eksperimen sebesar 85,39, mengungguli kelas pembandingan yang hanya menyentuh angka 79,36. Hasil uji hipotesis Mann–Whitney U menampilkan taraf signifikansi di angka 0,001 ($<0,05$), disertai perolehan indeks N-Gain kubu perlakuan (0,6569) yang lebih superior daripada kubu kontrol (0,4109). Sebagai kesimpulan akhir, inovasi museum maya berbasis Augmented Reality mengenai peninggalan sarkofagus di Museum Buleleng telah teruji valid, praktis, dan berdaya guna tinggi sebagai instrumen penunjang pembelajaran sejarah.

Kata kunci: Augmented Reality, ADDIE, Virtual Museum, Sarkofagus, Museum Buleleng, Hasil Belajar Sejarah

***Development of an Augmented Reality-Based Virtual Museum on
Sarcophagus Artifacts at Buleleng Museum to Improve History Learning
Outcomes at SMA Lab Undiksha***

ABSTRACT

This study aims to construct an instructional tool grounded in Augmented Reality (AR) technology, presented as a virtual museum highlighting the sarcophagus heritage of Buleleng Museum. Beyond the product development phase, this research also measures the degree of validity, practicality, and efficacy of the medium in elevating history learning outcomes among students at SMA Lab Undiksha. The methodological framework adopts the Research and Development (R&D) design based on the ADDIE model, which encompasses five sequential phases: Analysis, Design, Development, Implementation, and Evaluation. Data collection instruments utilized observations, in-depth interviews, questionnaires, and cognitive achievement tests, subsequently evaluated through a synthesis of descriptive quantitative and qualitative approaches. Findings indicate that the medium possesses exceptional validity, scoring 85% from media experts and 97.05% from subject matter specialists. Practicality evaluations similarly confirmed a highly practical category, registering 88.33% from educator assessments, 81.33% during individual trials, and 83.75% in small-group trials. Regarding effectiveness, the media proved capable of boosting academic performance, as reflected by the experimental class posttest mean score of 85.39, outperforming the control group's average of 79.36. The Mann–Whitney U hypothesis testing revealed a significance value of 0.001 (<0.05), alongside an N-Gain score for the experimental cohort (0.6569) superior to that of the control cohort (0.4109). In conclusion, the Augmented Reality-based virtual museum regarding the Buleleng Museum's sarcophagus artifacts has been empirically validated as a sound, practical, and highly effective supportive tool for history education.

Keywords: *Augmented Reality, ADDIE, Virtual Museum, Sarcophagus, Buleleng Museum, History Learning Outcomes.*