

**PENGEMBANGAN MEDIA EDUKASI *AUGMENTED REALITY*
MOTIF KAIN TENUN RANGRANG NUSA PENIDA**

Oleh

I Komang Martia Astana, NIM 2115051029

Program Studi Pendidikan Teknik Informatika

Fakultas Teknik dan Kejuruan

Universitas Pendidikan Ganesha

Singaraja

Email: martia@undikha.ac.id

ABSTRAK

Kain Tenun Rangrang merupakan warisan budaya khas Nusa Penida, Bali, yang memiliki nilai estetika dan filosofi tinggi yang tercermin dalam setiap motifnya. Namun, minat dan pemahaman generasi muda terhadap kain ini mulai menurun akibat kurangnya edukasi serta media promosi yang menarik dan relevan dengan perkembangan teknologi. Kondisi ini dikhawatirkan dapat mengancam keberlanjutan pelestarian warisan budaya lokal di tengah arus modernisasi. Penelitian ini bertujuan untuk mengembangkan media edukasi berbasis *Augmented Reality* (AR) bernama ARangrang, yang menampilkan enam motif utama Kain Tenun Rangrang beserta makna filosofisnya, serta mengetahui respon pengguna terhadap media tersebut dalam memahami nilai budaya yang terkandung di dalamnya. Metode yang digunakan dalam penelitian ini adalah *Research and Development* (R&D) dengan mengadopsi kerangka kerja *Multimedia Development Life Cycle* (MDLC). Proses pengembangannya dilakukan melalui enam tahap berurutan, meliputi pengkonsepan, perancangan, pengumpulan bahan, pembuatan, pengujian, dan distribusi. Pengembangan aplikasi dilakukan menggunakan Unity 3D dan Blender sebagai perangkat utama. Hasil pengujian *blackbox* menunjukkan bahwa seluruh fitur aplikasi ARangrang berfungsi dengan baik dan memenuhi 100% kriteria fungsionalitas. Uji validitas oleh ahli isi dan ahli media memperoleh koefisien 1,00 dengan kategori “Sangat Tinggi” dan kualifikasi “Sangat Valid”, sehingga dinyatakan “Layak digunakan tanpa revisi”. Uji respons pengguna terhadap 50 responden juga menunjukkan hasil sangat positif, di mana aplikasi dinilai efisien, menarik, mudah digunakan, dan efektif membantu memahami makna serta filosofi Kain Tenun Rangrang.

Kata kunci: *Augmented Reality*, Kain Tenun Rangrang, MDLC, Media Edukasi, Nusa Penida.

**DEVELOPMENT OF AUGMENTED REALITY EDUCATIONAL MEDIA
FOR RANGRANG WOVEN FABRIC MOTIFS OF NUSA PENIDA**

By

I Komang Martia Astana, NIM 2115051029

Study Program in Education Informatics Engineering

Faculty of Engeneering and Vocational

Ganesha University of Education

Singaraja

Email: martia@undikha.ac.id

ABSTRACT

Rangrang woven fabric is a cultural heritage unique to Nusa Penida, Bali, which possesses high aesthetic and philosophical values reflected in each of its motifs. However, the interest and understanding of the younger generation toward this traditional fabric have gradually declined due to the lack of educational efforts and promotional media that are engaging and aligned with technological advancements. This condition is feared to threaten the sustainability of local cultural heritage preservation amid the rapid pace of modernization. This study aims to develop an Augmented Reality (AR)-based educational medium called ARangrang, which presents six main motifs of Rangrang woven fabric along with their philosophical meanings, as well as to examine user responses to the medium in enhancing their understanding of the cultural values contained within the fabric. The research employed a Research and Development (R&D) method by adopting the Multimedia Development Life Cycle (MDLC) framework. The development process consisted of six sequential stages, namely conceptualization, design, material collection, development, testing, and distribution. The application was developed using Unity 3D and Blender as the primary development tools. The results of black-box testing indicated that all features of the ARangrang application functioned properly and met 100% of the functional requirements. The validity evaluation conducted by content experts and media experts obtained a coefficient of 1.00, categorized as “Very High” and qualified as “Highly Valid,” indicating that the application is feasible for use without revision. Furthermore, the user response test involving 50 respondents showed highly positive results, in which the application was perceived as efficient, engaging, easy to use, and effective in helping users understand the meanings and philosophies of Rangrang woven fabric.

Keywords: *Augmented Reality, Rangrang Woven Fabric, MDLC, Educational Media, Nusa Penida.*