

**PENGEMBANGAN MEDIA *AUGMENTED REALITY* UNTUK  
MENINGKATKAN PEMAHAMAN KONSEP DAN KETERAMPILAN  
BIOMOTORIK PADA PERMAINAN TRADISIONAL BALI**

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**ABSTRAK**

Sumber belajar digital dalam permainan tradisional saat ini masih minim. Beberapa konsep gerakan, aturan permainan, dan prosedur permainan masih sulit dipahami oleh peserta didik sehingga menyebabkan pemahaman konsep dan praktik permainan tidak optimal. Tujuan penelitian ini yaitu: 1) menjelaskan proses rancang bangun media *Augmented Reality* (AR), 2) menjelaskan validitas media AR dari aspek isi, media, dan aspek desain pembelajaran, 3) mendeskripsikan kepraktisan media AR, (4) mendeskripsikan keefektifan media AR dalam meningkatkan pemahaman konsep dan keterampilan biomotorik, (5) menjelaskan respons pengguna media AR. Media AR dikembangkan menggunakan model ADDIE. Metode pengumpulan data yang digunakan adalah kuesioner dan tes. Kuesioner digunakan mengukur validitas, kepraktisan, dan respons pengguna terhadap media AR. Tes digunakan mengukur tingkat pemahaman konsep dan keterampilan biomotorik siswa. Subjek penelitian yang dilibatkan dalam uji validitas media AR adalah 2 orang ahli isi, 2 orang ahli desain pembelajaran, dan 2 orang ahli media sedangkan uji kepraktisan melibatkan 3 orang siswa pada tahap perorangan dan 12 orang siswa pada tahap kelompok kecil. Respons pengguna melibatkan seluruh siswa kelas eksperimen dan guru pengajar. Keefektifan media AR diuji melalui kuasi eksperimen dengan menggunakan *pretest dan posttest control group design*. Kelas eksperimen melibatkan 32 orang siswa yang dibelajarkan menggunakan media AR. Kelas kontrol terdiri atas 35 orang siswa yang dibelajarkan menggunakan media cetak. Ada dua variabel terikat yang diamati yaitu pemahaman konsep dan keterampilan biomotorik dengan mengontrol kovariabel pengetahuan awal siswa. Data yang diperoleh dari uji validitas, uji kepraktisan, dan uji respons pengguna dianalisis secara deskriptif kualitatif dan kuantitatif. Data tes pemahaman konsep dan keterampilan biomotorik dianalisis menggunakan statistik mancova. Hasil penelitian menunjukkan bahwa validitas aspek isi, media, desain pembelajaran, kepraktisan, dan respons pengguna terhadap media AR berada pada kategori sangat baik. Hasil uji mancova menunjukkan bahwa media AR memiliki dampak yang signifikan dalam meningkatkan pemahaman konsep dan keterampilan biomotorik setelah mengontrol pengetahuan awal siswa. Media AR mampu memvisualisasikan materi abstrak secara realistis sehingga siswa lebih mudah memahami konsep dan sekaligus berdampak terhadap praktik keterampilan biomotorik.

Kata kunci: *augmented reality*, pemahaman konsep, keterampilan biomotorik

# **DEVELOPMENT OF AUGMENTED REALITY MEDIA TO IMPROVE CONCEPTS UNDERSTANDING AND BIOMOTORIC SKILLS IN GAMES BALINESE TRADITIONAL**

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## **ABSTRACT**

Digital learning resources in traditional games are currently still minimal. Some concepts of movement, game rules, and game procedures are still difficult for students to understand, causing the understanding of game concepts and practices to be not optimal. The aims of this study were: 1) to explain the process of developing Augmented Reality (AR) media, 2) to explain the validity of AR media from the aspects of content, media, and learning design aspects, 3) to describe the practicality of AR media, (4) to describe the effectiveness of AR media in increasing understanding of concepts and biomotor skills, (5) to explain the response of AR media users. AR media was developed using the ADDIE model. Data collection methods used are questionnaires and tests. The questionnaire measures the validity, practicality, and user response to AR media. The test measures the level of understanding of students' concepts and biomotor skills. Respondents who were involved in testing the validity of AR media were two content experts, two learning design experts, and two media experts while the practicality test involved three students at the individual stage and 12 students at the small group stage. User responses involve all experimental class students and teaching teachers. The effectiveness of AR media was tested through a quasi-experimental using a pretest and posttest control group design. The experimental class involved 32 students who were taught using AR media. The control class consisted of 35 students who were taught using printed media. Two dependent variables are observed, conceptual understanding and biomotor skills, by controlling students' prior knowledge covariables. The data obtained from the validity test, practicality test, and user response test were analyzed descriptively, qualitatively, and quantitatively. Data on conceptual understanding tests and biomotor skills were analyzed using Mancova statistics. The results showed that the validity of content, media, learning design, practicality, and user responses to AR media were in very good category. The results of the Mancova test show that AR media significantly improves conceptual understanding and biomotor skills after controlling for students prior knowledge. AR media can realistically visualize abstract material so that students more easily understand concepts and, at the same time, have an impact on the practice of biomotor skills. Keywords: augmented reality, conceptual understanding, biomotor skills

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