ANDROID-BASED APPS OF UGMENTED REALITY LEARNING MEDIA FOR INTRODUCING JAVANESE GAMELAN MUSICAL INSTRUMENTS

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ABSTRACT

The introduction of traditional Javanese Gamelan musical instruments in schools remains sparse because the limited number of musical instruments hinders students' equal access to the experience of understanding and learning musical instruments. Limited learning media make it difficult for students to imagine the shape and sound of musical instruments, especially those they may rarely encounter in everyday life. Gemawang Public Elementary School utilizes conventional learning media that is less engaging for students and features only one type of musical instrument: the angklung. One way to overcome these limitations is to utilize Augmented Reality technology. The application for recognizing Javanese Gamelan musical instruments, based on Augmented Reality, displays 3D shapes of musical instruments, customizes shapes and rotations, plays sounds, provides pop-up GUI information, offers interactive 3D and 2D games, and includes evaluation quizzes, all as innovative and interactive learning media. The model used in this study is the Waterfall method. This method consists of 5 stages: analysis, design, program coding, testing, and maintenance. The results of testing the Augmented Reality application for musical instruments, using a black box approach, ran according to plan and were in accordance with its intended function. Functional testing of the smartphone was conducted using three devices: the Samsung A06 5G, Samsung A52S, and Redmi 10C. The devices performed as planned and fulfilled their intended functions. Functional testing of the marker for distance and tilt was carried out according to the specifications. The functionality testing of the device on 26 fifth-grade students from Gemawang Public Elementary School concluded that it is suitable for use as a learning tool.

Keywords: Learning Media, Javanese Gamelan, Augmented Reality, 3D Objects, Musical Instruments