

# Development of Augmented Reality-Based Learning Media to Improve Student Competence in Power Generation Subject Matter

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## ABSTRACT

The rapid development of technology has an impact on human life, including in the world of education. One of the results of technological development that is closest to human life is the smartphone. Currently, smartphones have many roles besides being a communication tool such as being a medium for cashless payments, mobile banking. Technological advances are like two knives, on the one hand providing convenience but on the other hand being a challenge. Therefore, the use of smartphones themselves must be used wisely and strive to have a positive impact. In the world of education, the use of smartphones for learning is expected to make it easier for students to access learning resources and understand the subject matter. Based on this description, it is necessary to conduct research to develop new learning media for the Power Plant Course. The learning media to be developed is media that can be operated on android smartphones and utilizes Augmented reality technology. The learning media to be developed uses 3D images.

This research uses the Research and Development method. The research model used adapts the ASSURE model. The research data collection was carried out using a questionnaire questionnaire with a Likert scale of 1 to 4. The feasibility test stage was carried out by 2 media experts and 2 material experts. Augmented Reality-based learning media testing was conducted to 54 students of the Department of Electrical Engineering Education, Yogyakarta State University. The results of this study are: 1) produce augmented reality-based Bayu Power Plant Learning Media for students of the Department of Electrical Engineering Education which has the main content of learning materials, learning quizzes, 3D images with augmented reality technology. 2) the results of the assessment by media experts get an average score of 84 out of a maximum score of 100 so that it is declared "Very Feasible". The results of the assessment by material experts obtained an average score of 71 out of a maximum score of 88 so that it was declared "Feasible". 3) Feasibility assessment by users (students) obtained an average score of 76.5 from a maximum score of 92. Therefore, Augmented Reality-based Bayu Power Plant learning media can be declared "Very Feasible".

Kata Kunci: *learning media, augmented reality, compeence, power generation*