DEVELOPMENT OF VIRTUAL LABS INCORPORATING WITH GAME BASED LEARNING ON ELECTRICAL CONDUCTIVITY FOR SECONDARY SCHOOL

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ABSTRAK

In order to support secondary school students in better understand science, mainly electrical conductivity that is totally applied branch of science, building a mobile learning incorporating to virtual laboratory become our focused framework. Unfortunately, constructing such mobile learning is being a heavy burden for teacher whom having several administrations task. In addressing these goals, we propose a framework that aims to develop and test the mobile learning incorporating virtual laboratory as a learning media on electrical conductivity for secondary school.

The research model is procedural research that describes the procedure to develop product. It is research and development which adapted ADDIE model. This research uses three instruments, i.e. product quality, motivation, and self-regulated questionnaire. The research data consist of three types of the data, such as product development process, product quality assessment, and product implementation data.

Product development process data are descriptive data in according to product development steps. Product quality assessment data are quality data in the form of categories, so it converts to data score using Likert scale. Product implementation data consists of two types of data: motivation and self-regulated data. It is analyzed with t-test which is used to find out whether there is an effect of product implementation towards motivation and self-regulated learning.

The Amazing Science, name of product, has been successfully developed using ADDIE model. It has a good quality according to the expert judgments, reviewers, and students through preliminary try out and limited trial. Meanwhile, the implementation result shows that there are significant differences in both students' motivation and self-regulated learning before and after treatment using the Amazing Science. Unfortunately, there is no significant correlation between students' motivation and self-regulated learning.

Kata Kunci: *electrical conductivity, mobile game, motivation, self-regulated learning, virtual laboratory*