

PENGEMBANGAN BAHAN AJAR DENGAN MULTI REPRESENTASI BERBASIS APLIKASI ANDROID UNTUK MENINGKATKAN KOGNITIF SISWA SMA PADA TOPIK KINEMATIKA

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ABSTRAK

Penelitian ini bertujuan untuk mengembangkan bahan ajar dalam bentuk aplikasi android dengan pendekatan multi representasi. Berdasarkan karakteristik kecerdasan siswa, diperlukan sebuah bahan ajar yang dapat memfasilitasi kecerdasan siswa dalam mendapatkan informasi. salah satunya dengan multi representasi. Metode yang digunakan dalam penelitian yaitu metode penelitian dan pengembangan. Penelitian dilakukan pada kelas X SMA pada topik kinematika dengan bahan ajar multi representasi berbasis aplikasi android pada kelas eksperimen dan pembelajaran konvensional pada kelas kontrol. Peningkatan pemahaman konsep siswa diukur dengan efektivitas penggunaan bahan ajar berbasis aplikasi android melalui hasil *pre- test* dan *post- test*, serta menggunakan hasil angket tanggapan siswa terhadap penggunaan bahan ajar aplikasi android. Sebelum bahan ajar di uji coba pada kelas eksperimen, dilakukan validasi oleh dua dosen ahli melalui angket dengan besar persentase rata-rata dari angket sebesar 84%. Hasil pengolahan data juga menunjukkan adanya perbedaan nilai rata-rata *post test* kelas eksperimen dengan kelas kontrol. Untuk kelas eksperimen siswa mendapat nilai rata-rata *post-test* sebesar 82, sedangkan untuk kelas kontrol nilai rata-rata *post-test* sebesar 76 dan hasil angket tanggapan siswa dengan persentase sebesar 79%. Hal ini menunjukkan bahwa bahan ajar berbasis aplikasi android dengan pendekatan multi representasi sangat efektif dalam pembelajaran.

Kata Kunci : Bahan Ajar; Multi representasi; *Mobile Learning*; Efektivitas; Kinematika.

THE DEVELOPMENT OF TEACHING MATERIALS ANDROID APPLICATION-BASED WITH MULTI REPRESENTATION APPROACH FOR INCREASE HIGH SCHOOL STUDENT COGNITIVE ON KINEMATIC TOPIC

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ABSTRACT

This research aims to develop teaching materials android application-based with multi representation approach. Based on the intelligent characteristic of students, nowadays we need teaching materials that can facilitate student intelligent to get information. One of them are multi representation approach. Nowadays, the development of digital device in supporting learning process is growing rapidly. This research used research and development method. This research was conducted in senior highschool for grade 10 for topic kinematics, by using learning materials with multi representation approach based on android application in experimental class and conventional learning in control class. The improvement of student's concept understanding is measured by the effectiveness of the usage learning materials based applications android. the effectiveness of the usage learning materials based applications android can show from the results of pre-test and post-test the experimental class and control class. And also from the results of the questionnaire responses of students in using learning materials based applications android. Before learning materials based android application is trial in the experimental class, the application has been validated by two expert lecturers through a questionnaire. Validation based on questionnaire showed the average percentage of application are 84% with category excellent application. The results of research showed that there is the difference score. In experimental class the average score of the post test are 82 and in control class the average score are 76. The percentage of the questionnaire responses of students in experimental class is 79% . the research's result shows that the teaching materials based android application with multi-representation approach is effective for learning process.

Keywords: Learning Material; Multi representations; Mobile Learning; Effectiveness; Kinematics.