

**PENGEMBANGAN MODUL INSPEKSI FISIK INSTALASI ENERGI
BARU TERBARUKAN BERBASIS *AUGMENTED REALITY* UNTUK
MENDUKUNG DIKLAT TEKNIS INSPEKSI SISTEM TENAGA LISTRIK**

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ABSTRAK

Penelitian ini bertujuan untuk: (1) mengembangkan modul diklat inspeksi fisik instalasi PLTS berbasis *augmented reality* pada diklat teknis inspeksi sistem tenaga listrik, (2) mengetahui kelayakan modul diklat inspeksi fisik instalasi PLTS berbasis *augmented reality* pada diklat teknis inspeksi sistem tenaga listrik, (3) mengetahui unjuk kerja aplikasi *augmented reality* pada modul diklat inspeksi fisik instalasi PLTS berbasis *augmented reality*.

Penelitian yang dilaksanakan merupakan jenis penelitian dan pengembangan (*research and development*) dengan menggunakan prosedur pengembangan produk ADDIE yang dikembangkan oleh Lee & Owens, yang mencakup: (1) *analysis*, (2) *design*, (3) *development*, (4) *implementation*, (5) *evaluation*. Teknik pengumpulan data dilaksanakan melalui observasi, wawancara, dan instrumen angket. Uji validasi untuk menentukan tingkat kelayakan produk dilakukan oleh masing-masing dua ahli materi dan ahli media. Teknik analisis data deskriptif adalah teknik analisis data yang digunakan pada penelitian ini.

Penelitian menghasilkan: (1) pengembangan modul inspeksi fisik instalasi PLTS berbasis *augmented reality* pada diklat teknis inspeksi sistem tenaga listrik, (2) hasil penilaian kelayakan oleh ahli materi memperoleh rerata nilai sebesar 94,5 dan dikategorikan layak; hasil penilaian kelayakan oleh ahli media memperoleh rerata nilai sebesar 140,5 dan dikategorikan sangat layak; dan hasil tanggapan atau respon peserta diklat memperoleh nilai rerata sebesar 146,5 dan dikategorikan sangat layak, (3) unjuk kerja aplikasi *augmented reality* yang dikembangkan sudah mampu dioperasikan tanpa kendala pada *smartphone* android.

Kata kunci: *Augmented Reality*, modul diklat, PLTS, inspeksi, sistem tenaga listrik

**THE DEVELOPEMENT OF AUGMENTED REALITY BASED RENEWABLE
ENERGY INSTALLATION PHYSICAL INSPECTION MODULE TO
SUPPORT THE ELECTRICAL ENERGY SYSTEM TECHNICAL
INSPECTION TRAINING**

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ABSTRACT

This study aims to: (1) develop the augmented reality-based training module of the solar system installation in the electrical system inspection technical training, (2) know the properness of the augmented reality-based training module of the solar system installation in the electrical system inspection technical training, (3) observe the performance of the augmented reality application in the augmented reality-based training module of the solar system installation physical inspection.

This study is a research and development study which implemented ADDIE product development procedures proposed by Lee & Owens covering: (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. The data gathering techniques were in the form of observation, interview, and questionnaire. A validation test to determine the properness level of the product was conducted by both material and media experts. The descriptive data analysis technique was a data analysis technique used in this study.

In the end, this study gives results in the form of: (1) the development of the augmented reality based physical inspection module of the solar system installation in the electrical system inspection technical training, (2) the assessment results of the properness assessment scoring 94,5 in average by the material expert and is categorized as a proper training module product; scoring 140,5 which then categorized as very proper by the media expert; and the response results from the training participants as the respondents that score 146,5 which then considered as very proper, (3) the performance of the developed augmented reality based application which is now capable to be operated without issues in the android smartphone.

Keywords: *augmented reality, training module, solar power, inspection, electrical energy system*