

**PENGEMBANGAN MEDIA PEMBELAJARAN MESIN BAKAR 2 TAK
DAN 4 TAK BERBASIS *AUGMENTED REALITY***

TESIS

Diajukan sebagai salah satu syarat untuk memperoleh gelar Magister
Pendidikan Teknologi dan Kejuruan



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PENGEMBANGAN MEDIA PEMBELAJARAN MESIN BAKAR 2 TAK
DAN 4 TAK BERBASIS *AUGMENTED REALITY*



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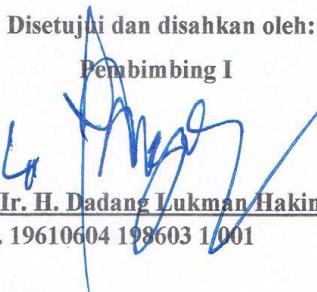
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ABSTRAK

Mesin bakar 2 tak dan 4 tak merupakan salah satu mata pelajaran penting di jurusan TKRO. Hasil belajar siswa pada mata pelajaran mesin bakar 2 tak dan 4 tak tergolong rendah disebabkan siswa masih mengalami kesulitan memahami bentuk visual pada materi ini, karena media pembelajaran yang digunakan masih terbatas. Penelitian ini bertujuan untuk mengembangkan media pembelajaran *augmented reality* berbasis *android* sebagai media pembelajaran mesin bakar 2 tak dan 4 tak. Penelitian ini menggunakan metode kualitatif dan kuantitatif (mix method) dengan pendekatan deskriptif serta penjaringan data digunakan kuesioner. Proses pengembangan media pembelajaran *augmented reality* menggunakan pendekatan *Analisys, Design, Development, Implementation, and evaluation* (ADDIE). Selanjutnya dilakukan pengujian kelayakan pada aspek *usability* dan penerapan disekolah kepada siswa untuk mengetahui tingkat kemampuan kognitif maupun psikomotorik siswa. Sampel pada penelitian adalah siswa SMK Negeri 1 Kerumutan kelas XI TKRO. Kemampuan kognitif dan psikomotorik siswa mengalami peningkatan serta memperoleh respon positif dari penggunaan media pembelajaran tersebut. Media pembelajaran *augmented reality* berbasis *android* dinyatakan layak dan efektif digunakan untuk mendukung proses pembelajaran mesin bakar 2 tak dan 4 tak di sekolah.

Kata Kunci: media pembelajaran, aplikasi, *augmented reality*, dan *android*

ABSTRAK

Two and four stroke engines are not one of the important subjects in the TKRO department. Student learning outcomes in 2 and 4 combustion engine subjects are not low because students still have difficulty understanding the visual form on this material, because the learning media used is still limited. This study aims to develop an Android-based augmented reality learning media as a 2-stroke and 4-stroke combustion engine learning media. This study uses qualitative and quantitative methods (mix method) with a descriptive approach and data collection using a questionnaire. The process of developing augmented reality learning media uses the Analysis, Design, Development, Implementation, and evaluation (ADDIE) approaches. Furthermore, a feasibility test was conducted on the aspects of usability and application in schools to students to determine the level of cognitive and psychomotor abilities of students. The sample in the study was students of SMK Negeri 1 Kerumutan in class XI TKRO. Students' cognitive and psychomotor abilities have increased and have received positive responses from the use of learning media. Android-based augmented reality learning media is declared feasible and effective to be used to support the learning process of 2 and 4 fuel engines not at school.

Keywords: learning media, applications, augmented reality, and android

DAFTAR ISI

DATA PENULIS	ii
LEMBAR PENGESAHAN	iii
HALAMAN PERNYATAAN	iv
UCAPAN TERIMAKASIH	v
ABSTRAK	vii
DAFTAR ISI	ix
DAFTAR TABEL	xii
DAFTAR GAMBAR	xiv
DAFTAR GRAFIK	xvi
BAB I PENDAHULUAN	1
1.1 Latar Belakang	1
1.2 Rumusan Masalah	3
1.3 Tujuan Penelitian	4
1.4 Mamfaat Penelitian	5
BAB II KAJIAN TEORI	6
2.1 Pembelajaran	6
2.1.1 Pengertian media pembelajaran	6
2.1.2 Fungsi dan Manfaat Media Pembelajaran	7
2.1.3 Landasan Teori Penggunaan Media Pembelajaran	8
2.1.4 Ciri-ciri Media Pembelajaran	9
2.1.5 Aspek Dalam Pemilihan Media Pembelajaran	10
2.1.6 Pengertian Multimedia	10
2.2 Mesin bakar 2 tak dan 4 tak (KD 3.3).....	11
2.3 <i>Augmented Reality</i>	12
2.4 Pengaplikasian Teknologi <i>Augmented Reality</i> Berbasis Android Pada Media Pembelajaran	13
2.5 Langkah-langkah Pembuatan Media Pembelajaran Berbasis AR	15
2.6 Penelitian yang Relevan	19
2.7 Kerangka Pikir.....	25
BAB III METODE PENELITIAN.....	26

3.1 Desain Penelitian	26
3.2 Partisipan	30
3.3. Instrumen Penelitian	30
3.4 Prosedur Penelitian	32
3.5 Teknik Analisis Data	33
BAB IV HASIL PENELITIAN DAN PEMBAHASAN	35
4.1 Hasil Produk Media Pembelajaran	35
4.1.2 Hasil Proses Analisis (<i>Analysis</i>)	35
4.1.2 Hasil dari Proses Perencanaan (<i>Desing</i>)	39
4.1.3 Hasil Dari Proses Pengembangan (<i>Development</i>)	43
4.2 Validasi Kelayakan Media Pembelajaran	47
4.2.1 Pengujian <i>Functional Suitability</i>	47
4.2.2 Pengujian <i>Portability Efficency</i>	48
4.2.3 Pengujian Kelayakan Media	50
4.2.4 Pengujian Kelayakan Materi	51
4.3 Efektifitas Media Pembelajaran	53
4.3.1 Hasil Dari Proses Penerapan (Implementasi)	53
4.3.2 Pengujian Efektifitas Media Pembelajaran	55
4.3.3 Hasil Evaluasi	59
4.4 Pembahasan Hasil Penelitian	61
BAB V SIMPULAN,IMPLIKASI, DAN REKOMENDASI	64
5.1 Simpulan	64
5.2 Implikasi	65
5.3 Rekomendasi	65
DAFTAR PUSTAKA	66

DAFTAR TABEL

Tabel 2.1 Kompetensi dasar dan indikator pada Teknologi Dasar Otomotif	11
Tabel 2.2. Kajian Literatur Penelitian Yang Relevan	19
Tabel 3.1. Kisi-kisi validasi ahli materi	30
Tabel 3.2. Kisi-kisi validasi ahli media	31
Tabel 3.3. Kisi-kisi penilaian siswa	31
Tabel 3.4. Skor Pernyataan	32
Tabel 3.5 Kategori kelayakan berdasarkan Ranting Scale	34
Tabel 3.6 Kategori nilai efektifitas siswa	34
Tabel 4.1 Proses dan Hasil Analisis.....	35
Tabel 4.2 <i>Storyboard</i> aplikasi media MesinBakAR	41
Tabel 4.3 Hasil Pengujian <i>Functional Suitability</i>	48
Tabel 4.4 Spesifikasi Handphone yang Diujicobakan	49
Tabel 4.5 Hasil uji coba peforma <i>smartphone</i>	49
Tabel 4.6 Data Hasil Uji Validasi Media	50
Tabel 4.7 Data Hasil Uji Validasi Materi	51
Tabel 4.8 Hasil Revisi Produk Media Pembelajaran	53
Tabel 4.9 Hasil Rekapitulasi Pengujian <i>Usability</i>	54
Tabel 4.10 data hasil uji reliabilitas instrumen pengguna/siswa	54
Tabel 4.11 Data Scale Statistik Instrumen Pengguna/Siswa	54
Tabel 4.12 Daftar Nilai Pre-test dan Post-test Siswa	55
Tabel 4.13 Uji <i>Indenpendent Samples T-Test</i> nilai <i>Pre-test</i> dan <i>Post-test</i> Siswa ..	55
Tabel 4.14 “ <i>Indenpenden Samples Test</i> ” Untuk Nilai Akademik <i>Pre-test</i> dan <i>Post test</i> Siswa	56
Tabel 4.15 Hasil Nilai Kegiatan Praktikum Siswa	57
Tabel 4.16 Uji <i>Indenpendent Samples T-Test</i> nilai <i>Pre-test</i> dan <i>Post-test</i> Siswa ..	58
Tabel 4.17 “ <i>Indenpenden Samples Test</i> ” Untuk Kemampuan Keterampilan Praktikum <i>Pre-test</i> dan <i>Post test</i> Siswa	59

DAFTAR GAMBAR

Gambar 2.1. Model kerucut pengalaman Edgar Dele (Nurseto, 2011).....	9
Gambar 2. 2 <i>Switch Platform Android</i>	15
Gambar 2. 3 <i>Klik player setting untuk masuk ke konfigurasi</i>	16
Gambar 2.4 Merubah <i>setting pada Resolution & Other Settings</i>	16
Gambar 2.5 Konfirmasi <i>import di Unity</i>	17
Gambar 2.6 Tampilan <i>package vuforia SDK</i> pada <i>window project</i>	17
Gambar 2.7 Membuat tampilan <i>marker</i>	18
Gambar 2.8 Memilih objek targer <i>image marker</i>	18
Gambar 2.9 Bentuk tampilan <i>marker</i> yang dipilih	19
Gambar 2.10 Kerangka pikir Penelitian	26
Gambar 3.1 Model Penelitian (Welty, 2007; Series, 2018)	32
Gambar 3.2. Prosedur penelitian	33
Gambar 3.3. Skor kelayakan secara kontinu(Hartog, 1999)	34
Gambar 4.1 Tampilan <i>autocad</i> pada layar monitor	36
Gambar 4.2 Tampilan <i>vuforia</i> pada <i>smartphone</i>	36
Gambar 4.3 Tampilan <i>visual studio</i> pada monitor	37
Gambar 4.4 Tampilan <i>corel draw</i> pada layar monitor	38
Gambar 4.5 Desain <i>flow chart</i> Aplikasi MesinBakAR.....	40
Gambar 4.6 Halaman <i>Spalsh Screen</i>	44
Gambar 4.7 Halaman Menu Utama	44
Gamabar 4.8 Halaman <i>Scan</i>	45
Gambar 4.9 Halamn <i>Quiz</i>	46
Gambar 4.10 Bentuk Tampilan Skor Jawaban Siswa	46
Gambar 4.11 Halamn <i>Feedback</i>	47

HALAMAN GRAFIK

Gafik 4.1 Pengujian Kelayakan Media	50
Grafik 4.2 Pengujian Kelayakan Materi	52
Grafik 4.3 Evaluasi Efektifitas Media pembelajaran.....	60

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