

## DAFTAR ISI

<b>ABSTRAK</b> .....	i
<b>DAFTAR ISI</b> .....	v
<b>DAFTAR TABEL</b> .....	x
<b>DAFTAR GAMBAR</b> .....	xi
<b>KATA PENGANTAR</b> .....	Error! Bookmark not defined.
<b>BAB I</b> .....	Error! Bookmark not defined.
<b>PENDAHULUAN</b> .....	Error! Bookmark not defined.
A. Latar Belakang .....	Error! Bookmark not defined.
B. Rumusan Masalah .....	Error! Bookmark not defined.
C. Batasan Masalah.....	Error! Bookmark not defined.
D. Tujuan Penelitian .....	Error! Bookmark not defined.
E. Manfaat Penelitian .....	Error! Bookmark not defined.
F. Metode Penelitian.....	Error! Bookmark not defined.
G. Asumsi Penelitian.....	Error! Bookmark not defined.
H. Lokasi, Sampel Penelitian, dan Waktu Penelitian....	Error! Bookmark not defined.
I. Struktur Organisasi Skripsi .....	Error! Bookmark not defined.
<b>BAB II</b> .....	Error! Bookmark not defined.
<b>TINJAUAN PUSTAKA</b> .....	Error! Bookmark not defined.
A. Media Pembelajaran.....	Error! Bookmark not defined.
1. Pengertian Media .....	Error! Bookmark not defined.
2. Klasifikasi Media Pembelajaran .....	Error! Bookmark not defined.
3. Fungsi Media Pembelajaran.....	Error! Bookmark not defined.
4. Pemilihan Media Pembelajaran .....	Error! Bookmark not defined.
5. Media Obyek.....	Error! Bookmark not defined.
B. <i>Trainer Logic Control</i> .....	Error! Bookmark not defined.
C. <i>Software Logic</i> .....	Error! Bookmark not defined.
1. <i>Input</i> .....	Error! Bookmark not defined.
2. Gerbang Logika Dasar .....	Error! Bookmark not defined.
3. <i>Output</i> .....	Error! Bookmark not defined.
4. Simulasi Rangkaian .....	Error! Bookmark not defined.
D. Materi Teknik <i>Digital</i> .....	Error! Bookmark not defined.
1. Gerbang Logika .....	Error! Bookmark not defined.

2. Gerbang-Gerbang Logika Kombinasi .....	Error! Bookmark not defined.
3. Al Jabar Boole.....	Error! Bookmark not defined.
4. <i>Flip-Flop</i> .....	Error! Bookmark not defined.
E. Belajar .....	Error! Bookmark not defined.
1. Pengertian Belajar .....	Error! Bookmark not defined.
2. Pembelajaran.....	Error! Bookmark not defined.
F. Hasil Belajar.....	Error! Bookmark not defined.
1. Ranah Kognitif.....	Error! Bookmark not defined.
2. Ranah Afektif.....	Error! Bookmark not defined.
3. Ranah Psikomotorik.....	Error! Bookmark not defined.
G. Hipotesis Penelitian.....	Error! Bookmark not defined.
<b>BAB III.....</b>	<b>Error! Bookmark not defined.</b>
<b>METODOLOGI PENELITIAN .....</b>	<b>Error! Bookmark not defined.</b>
A. Lokasi dan Subjek Penelitian .....	Error! Bookmark not defined.
1. Lokasi Penelitian.....	Error! Bookmark not defined.
2. Populasi dan Sampel .....	Error! Bookmark not defined.
B. Metodologi Penelitian .....	Error! Bookmark not defined.
C. Desain Penelitian.....	Error! Bookmark not defined.
D. Definisi Operasional dan Variabel .....	Error! Bookmark not defined.
1. Variabel.....	Error! Bookmark not defined.
2. Trainer.....	Error! Bookmark not defined.
3. Hasil Belajar.....	Error! Bookmark not defined.
4. Efektivitas .....	Error! Bookmark not defined.
E. Tahapan Penelitian.....	Error! Bookmark not defined.
1. Memilih Masalah .....	Error! Bookmark not defined.
2. Studi Pendahuluan .....	Error! Bookmark not defined.
3. Merumuskan Permasalahan .....	Error! Bookmark not defined.
4. Merumuskan Anggapan Dasar .....	Error! Bookmark not defined.
5. Memilih Pendekatan.....	Error! Bookmark not defined.
6. Menentukan Variabel dan Sumber Data .....	Error! Bookmark not defined.
7. Menentukan dan Menyusun Instrumen.....	Error! Bookmark not defined.
8. Mengumpulkan Data.....	Error! Bookmark not defined.
9. Analisis Data.....	Error! Bookmark not defined.
10. Manarik Kesimpulan.....	Error! Bookmark not defined.
11. Menyusun Laporan .....	Error! Bookmark not defined.

F. Instrumen Penelitian.....	<b>Error! Bookmark not defined.</b>
1. Uji Coba Instrumen.....	<b>Error! Bookmark not defined.</b>
2. Instrumen Afektif.....	<b>Error! Bookmark not defined.</b>
G. Teknik Pengumpulan Data.....	<b>Error! Bookmark not defined.</b>
1. Studi Pendahuluan .....	<b>Error! Bookmark not defined.</b>
2. Studi Literatur .....	<b>Error! Bookmark not defined.</b>
3. Wawancara.....	<b>Error! Bookmark not defined.</b>
4. Tes.....	<b>Error! Bookmark not defined.</b>
5. Kuesioner .....	<b>Error! Bookmark not defined.</b>
6. Observasi.....	<b>Error! Bookmark not defined.</b>
H. Teknik Analisis Data.....	<b>Error! Bookmark not defined.</b>
1. Analisis Data Kognitif .....	<b>Error! Bookmark not defined.</b>
2. Analisis Data Afektif .....	<b>Error! Bookmark not defined.</b>
3. Analisis Data Psikomotor.....	<b>Error! Bookmark not defined.</b>
4. Uji Normalitas Data .....	<b>Error! Bookmark not defined.</b>
5. Uji Hipotesis .....	<b>Error! Bookmark not defined.</b>
I. Prosedur dan Alur Penelitian .....	<b>Error! Bookmark not defined.</b>
1. Tahap Perisipan.....	<b>Error! Bookmark not defined.</b>
2. Tahap Pelaksanaan.....	<b>Error! Bookmark not defined.</b>
3. Tahap Pengolahan dan Analisis Data.....	<b>Error! Bookmark not defined.</b>
4. Hasil Penelitian dan Pembahasan .....	<b>Error! Bookmark not defined.</b>
5. Penarikan Kesimpulan .....	<b>Error! Bookmark not defined.</b>
J. Perbandingan Penelitian-Penelitian Terdahulu .....	<b>Error! Bookmark not defined.</b>
K. Perbedaan dari Penelitian Sebelumnya .....	<b>Error! Bookmark not defined.</b>
L. Pertimbangan Pemilihan <i>Software Multimedia Logic</i> .....	<b>Error! Bookmark not defined.</b>
M. Waktu Penelitian .....	<b>Error! Bookmark not defined.</b>
<b>BAB IV .....</b>	<b>Error! Bookmark not defined.</b>
<b>HASIL PENELITIAN DAN PEMBAHASAN .....</b>	<b>Error! Bookmark not defined.</b>
A. Gambaran Umum Penelitian .....	<b>Error! Bookmark not defined.</b>
1. <i>Pretest</i> .....	<b>Error! Bookmark not defined.</b>
2. <i>Treatment</i> .....	<b>Error! Bookmark not defined.</b>
3. <i>Posttest</i> .....	<b>Error! Bookmark not defined.</b>
B. Jadwal Pelaksanaan Penelitian .....	<b>Error! Bookmark not defined.</b>
C. Uji Coba Instrumen Penelitian .....	<b>Error! Bookmark not defined.</b>
1. Uji Validitas Instrumen.....	<b>Error! Bookmark not defined.</b>

2. Uji Reliabilitas Instrumen .....	<b>Error! Bookmark not defined.</b>
3. Tingkat Kesukaran dan Daya Pembeda .....	<b>Error! Bookmark not defined.</b>
<b>D. Hasil Belajar Menggunakan Media <i>Trainer</i> dan <i>Software</i>.....</b>	<b>Error! Bookmark not defined.</b>
1. Aspek Kognitif.....	<b>Error! Bookmark not defined.</b>
2. Aspek Afektif.....	<b>Error! Bookmark not defined.</b>
3. Aspek Psikomotor .....	<b>Error! Bookmark not defined.</b>
<b>E. Analisis Data .....</b>	<b>Error! Bookmark not defined.</b>
1. Normalitas Data .....	<b>Error! Bookmark not defined.</b>
2. Perhitungan <i>N-Gain</i> .....	<b>Error! Bookmark not defined.</b>
3. Uji Hipotesis .....	<b>Error! Bookmark not defined.</b>
<b>F. Pembahasan Hasil Penelitian .....</b>	<b>Error! Bookmark not defined.</b>
<b>BAB V .....</b>	<b>87</b>
<b>KESIMPULAN DAN SARAN .....</b>	<b>87</b>
A. Kesimpulan .....	87
B. Saran.....	87
<b>DAFTAR PUSTAKA.....</b>	<b>88</b>

## DAFTAR TABEL

Tabel 1.1. Desain Pretest-posttest control group design .....	5
Tabel 2.1. Input dan output rs flip-flop .....	25
Tabel 2.2. Tabel jk flip-flop .....	26
Tabel 3.1. Desain Pretest-posttest control group design .....	36
Tabel 3.2. Tingkat kesukaran dan kriteria.....	43
Tabel 3.3. Tabel klasifikasi daya pembeda .....	43
Tabel 3.4. Konversi skala likert .....	45
Tabel 3.5. Teknik pengumpulan data .....	47
Tabel 3.6. Kategori perolehan skor .....	49
Tabel 3.7. Tingkat keberhasilan pencapaian psikomotor.....	49
Tabel 3.8. Tingkat keberhasilan pencapaian Afektif .....	49
Tabel 3.9. Desain penelitian tahap pertama .....	53
Tabel 3.10. Desain penelitian tahap kedua.....	54
Tabel 3.11. Perbandingan antar software .....	63
Tabel 3.12. Waktu Penelitian .....	63
Tabel 4.1. Pelaksanaan Penelitian .....	69
Tabel 4.2. Hasil validitas item .....	70
Tabel 4.3. Hasil uji tingkat kesukaran.....	71
Tabel 4.4. Hasil uji daya pembeda .....	71
Tabel 4.5. Perbandingan hasil belajar ranah kognitif.....	72
Tabel 4.6. Hasil belajar aspek afektif.....	73
Tabel 4.7. Hasil belajar aspek psikomotor .....	77
Tabel 4.8. Uji normalitas data kognitif .....	78
Tabel 4.9. Uji normalitas data afektif .....	79
Tabel 4.10. Uji normalitas data psikomotor.....	79
Tabel. 4.11. Perhitungan gain pretest posttest.....	80
Tabel 4.11. Uji homogenitas varian aspek kognitif .....	81
Tabel 4.12. Uji homogenitas varian aspek afektif.....	81

Tabel 4.13. Uji homogenitas varian aspek psikomotor.....	81
Tabel 4.14. Uji hipotesis materi gerbang logika dan kombinasi.....	82
Tabel 4.15. Uji hipotesis materi aljabar boole dan flip-flop .....	82
Tabel 4.16. Uji hipotesis materi gerbang logika dan kombinasi.....	82
Tabel 4.17. Uji hipotesis materi aljabar boole dan flip-flop .....	82
Tabel 4.18. Uji hipotesis materi gerbang logika dan kombinasi.....	83
Tabel 4.19. Uji hipotesis materi aljabar boole dan flip-flop .....	83



## DAFTAR GAMBAR

Gambar 1.1. Kerucut pengalaman edgar dale .....	3
Gambar 2.1. Trainer logic control.....	15
Gambar 2.2. Tampilan software logic.....	16
Gambar 2.3. Toggle switch .....	17
Gambar 2.4. Push button.....	17
Gambar 2.5. Clock .....	18
Gambar 2.6. High constant .....	18
Gambar 2.7. Gerbang logika logic .....	18
Gambar 2.8. Output logic.....	19
Gambar 2.9. Contoh rangkaian simulasi logic.....	19
Gambar 2.10. Gerbang OR .....	20
Gambar 2.11. Gerbang AND .....	20
Gambar 2.12. Gerbang NOT.....	21
Gambar 2.13. Gerbang NOR.....	21
Gambar 2.14. Gerbang NAND .....	21
Gambar 2.12. Gerbang NOT.....	22
Gambar 2.13. Gerbang NOR.....	22
Gambar 2.14. Gerbang NAND .....	22
Gambar 2.15. Gerbang EXOR .....	22
Gambar 2.16. Gerbang EXNOR .....	22
Gambar 2.17. Rangkaian rs flip-flop .....	22
Gambar 2.18. Rangkaian jk flip-flop .....	26
Gambar 3.1. Tahapan penelitian .....	39
Gambar 3.2. Kurva baku normal uji normalitas.....	51
Gambar 3.3. Diagram alur proses observasi .....	56
Gambar 3.4. Alur proses penelitian.....	58
Gambar 3.5. Flow chart penelitian .....	59
Gambar 4.1. Desain pretest .....	67
Gambar 4.2. Desain treatment .....	68
Gambar 4.3. Desain posttest.....	68
Gambar 4.4. Diagram pretest data kognitif.....	72

Gambar 4.5. Diagram posttest data kognitif .....	72
Gambar 4.6. Diagram sub ranah A1.....	73
Gambar 4.7. Diagram sub ranah A2.....	74
Gambar 4.8. Diagram sub ranah A3.....	74
Gambar 4.9. Diagram sub ranah A5.....	74
Gambar 4.10. Diagram nilai rata-rata afektif.....	74
Gambar 4.11. Diagram nilai rata-rata afektif media trainer .....	75
Gambar 4.12. Diagram nilai rata-rata afektif media software .....	75
Gambar 4.13. Diagram sub ranah P1 .....	76
Gambar 5.4. Diagram sub ranah P2 .....	77
Gambar 4.15. Diagram sub ranah p3 .....	77
Gambar 4.16. Diagram sub ranah P4 .....	77
Gambar 4.17. Diagram sub ranah P5 .....	77
Gambar 4.18. Diagram nilai rata-rata psikomotor .....	77
Gambar 4.19. Diagram ranah psikomotor media trainer.....	78
Gambar 4.20. Diagram ranah psikomotor media software .....	78
Gambar 4.21. Diagram gain hasil belajar.....	80