

TABLE OF CONTENT

DECLARATION OF ORIGINALITY	Error! Bookmark not defined.
PREFACE	Error! Bookmark not defined.
ACKNOWLEDGEMENT	Error! Bookmark not defined.
ABSTRACT	Error! Bookmark not defined.
ABSTRAK	Error! Bookmark not defined.
TABLE OF CONTENT	1
LIST OF TABLES	3
LIST OF FIGURES	4
LIST OF APPENDICES	5
CHAPTER I INTRODUCTION	Error! Bookmark not defined.
1.1 Background	Error! Bookmark not defined.
1.2 Research Problem	Error! Bookmark not defined.
1.3 Research Objective	Error! Bookmark not defined.
1.4 Research Benefit	Error! Bookmark not defined.
1.5 Research Paper Structure	Error! Bookmark not defined.
1.6 Limitation of Problem	Error! Bookmark not defined.
CHAPTER II LITERATURE REVIEW	Error! Bookmark not defined.
2.1 Definition of STEM	Error! Bookmark not defined.
2.2 The Practices of STEM Learning	Error! Bookmark not defined.
2.3 STEM Literacy	Error! Bookmark not defined.
2.4 Arduino Uno	Error! Bookmark not defined.
2.5 Android Game : MGames Science	Error! Bookmark not defined.
2.6 Electricity	Error! Bookmark not defined.
2.7 Related Research	Error! Bookmark not defined.

Alifa Irna Yasin, 2017

STEM LEARNING ON ELECTRICITY USING ARDUINO ANDROID GAME BASED EXPERIMENT TO IMPROVE 8TH GRADE STUDENTS' STEM LITERACY

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

CHAPTER III RESEARCH METHODOLOGYError! Bookmark not defined.

- 3.1 Research Method **Error! Bookmark not defined.**
- 3.2 Research Design **Error! Bookmark not defined.**
- 3.3 Population and Sample **Error! Bookmark not defined.**
- 3.4 Operational Definition **Error! Bookmark not defined.**
- 3.5 Assumption **Error! Bookmark not defined.**
- 3.6 Hypothesis..... **Error! Bookmark not defined.**
- 3.7 Research Instrument **Error! Bookmark not defined.**
- 3.8 Instrument Development and Analysis **Error! Bookmark not defined.**
- 3.9 Instrument Analysis Result **Error! Bookmark not defined.**
- 3.10 Data Processing Technique **Error! Bookmark not defined.**
- 3.11 Research Procedure **Error! Bookmark not defined.**

CHAPTER IV RESULT AND DISCUSSIONError! Bookmark not defined.

- 4.1 Lesson Plan Applied to STEM Learning **Error! Bookmark not defined.**
- 4.2 Worksheet Applied To STEM Learning **Error! Bookmark not defined.**
- 4.3 STEM Literacy Instrument Test Applied To STEM Learning **Error! Bookmark not defined.**

CHAPTER V CONCLUSION AND RECOMMENDATION Error! Bookmark not defined.

- 5.1 Conclusion **Error! Bookmark not defined.**
- 5.2 Recommendation **Error! Bookmark not defined.**

REFERENCEError! Bookmark not defined.

APPENDIXError! Bookmark not defined.

LIST OF TABLES

Table 2.1 Content Analysis of Electricity	Error! Bookmark not defined.
Table 3.1 One- Group-Pretest-Posttest Design	Error! Bookmark not defined.
Table 3.2 Blue Print of STEM Literacy-Based Test	Error! Bookmark not defined.
Table 3.3 Interpretation of Difficulty Level.....	Error! Bookmark not defined.
Table 3.4 Interpretation of Discriminating Power.....	Error! Bookmark not defined.
Table 3.5 Interpretation of Validity Value.....	Error! Bookmark not defined.
Table 3.6 Interpretation of Reability	Error! Bookmark not defined.
Table 3.7 Recapitulation of Test Item for Students' STEM Literacy ...	Error! Bookmark not defined.
	not defined.
Table 3.8 Interpretation of Normalize Gain Score	Error! Bookmark not defined.
Table 3.9 Interpretation of Percentage.....	Error! Bookmark not defined.
No table of figures entries found.	

LIST OF FIGURES

Figure 2.1 Aduino Uno	Error! Bookmark not defined.
Figure 2.2 MGames Science Welcoming Screen	Error! Bookmark not defined.
Figure 2.3 Stage One	Error! Bookmark not defined.
Figure 2.4 Stage Two.....	Error! Bookmark not defined.
Figure 2.5 Stage Three.....	Error! Bookmark not defined.
Figure 2.6 Stage Four.....	Error! Bookmark not defined.

Alifa Irna Yasin, 2017

STEM LEARNING ON ELECTRICITY USING ARDUINO ANDROID GAME BASED EXPERIMENT TO IMPROVE 8TH GRADE STUDENTS' STEM LITERACY

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

Figure 2.7 Free Mode Stage	Error! Bookmark not defined.
Figure 2.8 Color coded band on resistor	Error! Bookmark not defined.
Figure 2.9 Component of LED	Error! Bookmark not defined.
Figure 2.10 Electrical Symbol.....	Error! Bookmark not defined.
Figure 2.11 The flow of current in series circuit	Error! Bookmark not defined.
Figure 2.12 The flow of current in parallel circuit	Error! Bookmark not defined.
Figure 3.1 Flowchart of Research Procedure	Error! Bookmark not defined.

No table of figures entries found.

LIST OF APPENDICES

Appendix A.1 Lesson Plan Experimental Class	83
Appendix A.2 Students' Worksheet	92
Appendix B.1 STEM Literacy Instrument Test	109
Appendix B.2 STEM Learning Implementation Observation Sheet	120
Appendix C.1 Result of STEM Literacy Pretest	127
Appendix C.2 Result of STEM Literacy Posttest.....	128
Appendix C.3 Result of STEM Literacy Pretest Analyzed by <i>Anates</i>	129
Appendix C.4 Result of STEM Literacy Posttest Analyzed by <i>Anates</i>	135
Appendix D.1 Documentation in Class	141
Appendix D.2 Expert Judgment Result	145
Appendix D.3 Paper Review Result	149
Appendix D.4 Autobiography	150