THE DEVELOPMENT OF 'CHAVABOT' AS A LEARNING MEDIA THAT CAN FACILITATE STUDENTS CRITICAL THINKING IN EARTHQUAKES AND MITIGATION TOPIC

RESEARCH PAPER

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The Development Of ‘Chavabot’ as a Learning Media That Can Facilitate Students Critical Thinking in Earthquakes and Mitigation Topic

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Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Pendidikan pada Program Studi *International Program on Science Education* (IPSE) Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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DECLARATION

I do hereby declare that every aspect was written in this research paper entitled “The Development of ‘Chavabot’ as a Learning Media that Can Facilitate Students Critical Thinking in Earthquakes and Mitigation Topic” is the original result of my idea, efforts, and works without copying or plagiarizing from other papers. The theories, opinions and others that contained in this paper have been quoted or referenced based on scientific code from UPI and under scientific ethics that applies in scholarly society. This declaration is created truthfully and consciously. When an infringement towards scientific ethics is subsequently found or if there is a claim of any others towards the authenticity of this research paper, hence I am willing to be responsible and accept academic sanctions corresponding to the rules.

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ABSTRACT

Critical thinking skills are the main competency in learning (Permendikbud, 2013). Meanwhile, in the 2018 PISA (Program for International Student Assessment) which involves high-level thinking skills that can directly review critical thinking skills, Indonesia is ranked 73 out of 78 countries. One of the factors that can affect critical thinking skill is the use of media in learning which is very potential to build critical thinking skills and problem solving. Therefore, this study aims to develop a website-based chatbot as a learning media to facilitate student critical thinking in earthquake and mitigation topic. This research uses the development method with the ADDIE model, consist of analysis, design, development, implementation, and evaluation. The analysis stage divided into analysis of needs, characteristics, and topic. Then, in the design stage consist of flowchart and storyboard making. In the development stage, the learning media developed based on design output. In the implementation stage, the learning media tested to the students and teacher. The last is the evaluation stage, which includes the calculation of percentage data gathered from students and science teachers and the data validation by experts calculated using Aiken's Variable formula. Expert judgment results got a high value of 0.81 with the criteria of high validity. The questionnaire results from teacher and students shows different value, 94% from teachers which indicates very good and 66% from students which categorize acceptable. These findings collectively indicate the feasibility of using chatbot based learning media in the earthquakes and mitigation topic to facilitates students critical thinking.

Key Words: *Chatbot, Critical Thinking, Earthquakes and Mitigation*

PENGEMBANGAN CHAVABOT SEBAGAI MEDIA PEMBELAJARAN YANG DAPAT MEMFASILITASI BERPIKIR KRITIS SISWA PADA TOPIK GEMPA DAN MITIGASI

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ABSTRAK

Keterampilan berpikir kritis merupakan kompetensi utama dalam pembelajaran (Permendikbud, 2013). Sementara itu, pada PISA (Program for International Student Assessment) tahun 2018 yang melibatkan kemampuan berpikir tingkat tinggi yang dapat mengulas langsung kemampuan berpikir kritis, Indonesia berada di peringkat 73 dari 78 negara. Salah satu faktor yang dapat mempengaruhi kemampuan berpikir kritis adalah penggunaan media dalam pembelajaran yang sangat potensial untuk membangun kemampuan berpikir kritis dan pemecahan masalah. Oleh karena itu, penelitian ini bertujuan untuk mengembangkan chatbot berbasis website sebagai media pembelajaran untuk memfasilitasi berpikir kritis siswa terhadap topik gempa bumi dan mitigasi. Penelitian ini menggunakan metode pengembangan dengan model ADDIE yang terdiri dari analisis, desain, pengembangan, implementasi, dan evaluasi. Tahap analisis dibagi menjadi analisis kebutuhan, karakteristik, dan topik. Kemudian pada tahap desain terdiri dari pembuatan flowchart dan storyboard. Pada tahap pengembangan, media pembelajaran dikembangkan berdasarkan hasil pada tahap desain. Pada tahap implementasi, media pembelajaran diujicobakan kepada siswa dan guru. Terakhir adalah tahap evaluasi yang meliputi penghitungan persentase data yang dikumpulkan dari siswa dan guru IPA serta validasi data oleh pakar yang dihitung dengan menggunakan rumus Aiken's Variable. Hasil expert judgment memperoleh nilai tinggi sebesar 0,81 dengan kriteria validitas tinggi. Hasil angket dari guru dan siswa menunjukkan nilai yang berbeda-beda, 94% dari guru menunjukkan sangat baik dan 66% dari siswa dikategorikan dapat diterima. Temuan ini secara bersama-sama menunjukkan kelayakan penggunaan media pembelajaran berbasis chatbot pada topik gempa bumi dan mitigasinya untuk memfasilitasi berpikir kritis siswa.

Kata Kunci: *Chatbot, Berpikir Kritis, Gempa Bumi dan Mitigasi*

TABLE OF CONTENTS

APPROVAL SHEET i

DECLARATION ii

ACKNOWLEDGEMENT iii

ABSTRACT v

TABLE OF CONTENTS vii

LIST OF TABLES ix

LIST OF FIGURES x

LIST OF APPENDICES xii

CHAPTER I 1

INTRODUCTION 1

1.1 Background 1

1.2 Research Problem 4

1.3 Operational Definition 4

1.4 Limitation of Problem 6

1.6 Research Benefit 8

1.7 Organization of Research Paper 8

CHAPTER II 10

LITERATURE REVIEW 10

2.1 Chatbot as Learning Media 10

2.2 Student's Critical Thinking Skill 12

2.3 Earthquake and Mitigation Topic 14

CHAPTER III 17

RESEARCH METHODOLOGY 17

3.1 Research Method 17

3.2 Research Design 17

3.3 Population and Sample 18

3.4 Research Instrument 19

3.5 Data Processing Technique 26
3.6 Research Procedure 28
CHAPTER IV 31
RESULT AND DISCUSSION 31
4.1 The Stages of Development of ‘Chavabot’ 31
4.2 Expert Judgment of the Aspects of 'Chavabot'.....70
4.3 Result of Teacher and Students Responses To ‘Chavabot’.....76
CHAPTER V..... 101
CONCLUSION, IMPLICATION, AND RECOMMENDATION..... 101
5.1 Conclusion.....101
5.2 Implication 102
5.3 Recommendation.....103
REFERENCES..... 105
APPENDICES..... 111
AUTOBIOGRAPHY 230

LIST OF TABLES

Table 2. 1 Indicators of critical thinking skills according to Ennis 13
Table 3. 1 Media Expert Validation Instrument for Content 20
Table 3. 2 Media Expert Validation Instrument for Design..... 20
Table 3. 3 Media Expert Validation Instrument for Critical Thinking 23
Table 3. 4 Teacher Questionnaire for Chavabot Learning Media..... 25
Table 3. 5 Student Questionnaire for Chavabot Learning Media 26
Table 3. 6 Percentage Criteria for Likert Scale..... 27
Table 3. 7 Validation Value Criteria 28
Table 4. 1 Storyboard of Chavabot Learning Media..... 37
Table 4. 2 Comparison Results of Chavabot Learning Media Before and After Revision..... 52
Table 4. 3 Critical Thinking in Chavabot Learning Media 55
Table 4. 4 Aiken's V Analysis Result..... 71
Table 4. 5 Teacher Response towards Chavabot Learning Media..... 76
Table 4. 6 Percentage Criteria for Likert Scale..... 87
Table 4. 7 The Result of Student Questionnaire 87

LIST OF FIGURES

Figure 2. 1 Earthquake Mitigation 16
Figure 3. 1 ADDIE Concept..... 18
Figure 3. 2 Research Procedure Scheme..... 30
Figure 4. 1 Macro Flowchart of Chavabot Learning Media 35
Figure 4. 2 Detailed Flowchart of Chavabot Learning Media 36
Figure 4. 3 Smojo.AI Coding Medium 41
Figure 4. 4 Welcoming Screen..... 42
Figure 4. 5 Log-in Page..... 42
Figure 4. 6 Guide to Use 43
Figure 4. 7 Introduction to Earthquake Material..... 44
Figure 4. 8 Study Sequence Plan..... 44
Figure 4. 9 Main Menu..... 45
Figure 4. 10 The Process of Earthquakes in Chavabot Learning Media..... 46
Figure 4. 11 The Causes of Earthquakes in Chavabot Learning Media..... 46
Figure 4. 12 Seismograph material in Chavabot Learning Media 47
Figure 4. 13 Earthquake Location and Magnitude Video..... 47
Figure 4. 14 Measuring Earthquakes Material in Chavabot Learning Media..... 48
Figure 4. 15 Earthquake Mitigation Material in Chavabot Learning Media..... 48
Figure 4. 16 Interesting Facts About Earthquakes in Chavabot Learning Media . 49
Figure 4. 17 Quiz in Chavabot Learning Media 49
Figure 4. 18 Matching Pairs Games in Funroom Chavabot Learning Media 50
Figure 4. 19 Maze Chase Game in Funroom Chavabot Learning Media 50
Figure 4. 20 About Chavabot..... 51
Figure 4. 21 Exit Menu 51
Figure 4. 22 Definition of Earthquake raised in Chavabot Learning Media..... 59
Figure 4. 23 Earth Layer Topic in Chavabot Learning Media..... 60
Figure 4. 24 Convergent Boundary..... 61
Figure 4. 25 Divergent Boundary..... 61
Figure 4. 26 Transform Boundary..... 62
Figure 4. 27 Plate Movement Topic..... 62
Figure 4. 28 Causes of Earthquake Topic in Chavabot Learning Media 63

Figure 4. 29 Seismogram 63
Figure 4. 30 Earthquake Measurement Topic in Chavabot Learning Media 64
Figure 4. 31 Earthquake Parameters Topic in Chavabot Learning Media 65
Figure 4. 32 Earthquake Intensity Scale 66
Figure 4. 33 Earthquake Magnitude Topic in Chavabot Learning Media 67
Figure 4. 34 Earthquake Mitigation Material in Chavabot Learning Media 67
Figure 4. 35 Teacher Responses on Mobile Connectivity Category 79
Figure 4. 36 Teacher Responses on Materials Category 80
Figure 4. 37 Teacher Responses on Mobile Connectivity Category 81
Figure 4. 38 Teacher Responses on Learning Experience Category 83
Figure 4. 39 Teacher Response on Critical Thinking 84
Figure 4. 40 Student Responses on Mobile Connectivity Category 91
Figure 4. 41 Student Responses on Materials Category 92
Figure 4. 42 Student Responses on User Interface Category 93
Figure 4. 43 Student Responses on Learning Experience Category 95
Figure 4. 44 Student Responses on Critical Thinking Category 97

LIST OF APPENDICES

Appendix A. 1 Chavabot Guidebook 113
Appendix A. 2 Expert Judgment Adaptation Mapping..... 115
Appendix A. 3 Expert Judgment Rubric 118
Appendix A. 4 Teacher Questionnaire Instrument Adaptation Mapping 127
Appendix A. 5 Student Questionnaire Instrument Adaptation Mapping..... 134
Appendix B. 1 Content Creation..... 141
Appendix B. 2 Lesson Plan in Learning with Chavabot Learning Media 156
Appendix C. 1 Expert Judgment Result..... 161
Appendix C. 2 Teacher Response Result..... 211
Appendix C. 2 Teacher Response Result..... 211
Appendix C. 3 Student Response Result..... 223
Appendix D. 1 Research Permission Letter 227
Appendix E. 1 Submission Proof for Journal Publication 229

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