

The Effectiveness of Developing E-Book Learning Media on Bilingual Learning Course

Dody Feliks Pandimun
Ambarita
Primary School Teacher
Education Department
State University of Medan
Medan, Indonesia

Naeklan Simbolon
Primary School Teacher
Education Department
State University of Medan
Medan, Indonesia

Eva Betty Simanjuntak
Primary School Teacher
Education Department
State University of Medan
Medan, Indonesia

Charles Fransiscus Ambarita
Economic Education Study
Program
State University of Medan
Medan, Indonesia

Laurensia Masri Peranginangin
Primary School Teacher
Education Department
State University of Medan
Medan, Indonesia

Masta Marselina Sembiring
Primary School Teacher
Education Department
State University of Medan
Medan, Indonesia

Edizal Hatmi
Primary School Teacher
Education Department
State University of Medan
Medan, Indonesia

Abstract: The purpose of this study was to determine the effectiveness of e-book learning media that was developed. The type of this research is research and development with ADDIE model. The subject of this research is test subject. The data collection technique is test. The result of this research and development is the increase in college students' cognitive learning outcomes is in the medium category. This shows that the use of e-book learning media can improve college students' cognitive learning outcomes.

Keywords: E-Book Learning Media, Bilingual Learning Course, Students' Cognitive Learning Outcomes

1. INTRODUCTION

Education in Law Number 20 Year 2003 is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills they need, society, nation and state [1]. Therefore, the efforts that can be made to achieve the definition of education can be pursued through a good and planned educational process. The educational process according to Regulation of the Minister of Education and Culture Number 59 Year 2014 is a process that provides opportunities for students to develop their potential into rational thinking skills and academic brilliance by giving meaning to what they see, hear, read, and learn to apply in everyday life [2]. However, based on observation on Bilingual Learning course at Primary School Teacher Education, Faculty of Science Education, Universitas Negeri Medan which has been taught, it was found that Bilingual Learning is dominated by power point learning media so that

college students feel bored and less enthusiastic when learning takes place which causes the learning process to be ineffective and learning objectives are not achieved.

For this reason, the development of students' self-potential, the use of innovative, varied, interesting, contextual learning media and according to the level of student needs to be held. With this learning media, it can trigger a fun learning process, so that an effective learning process will be created and learning objectives can be achieved. According to Hamidjojo (in Azhar, 2003:4) that media are all forms of intermediaries used by humans to convey or spread ideas, thought or opinions so that the ideas, thought or opinions expressed reach the recipient properly [3]. Meanwhile, Miarso (2011:458) that learning media are everything that is used to channel messages and can stimulate the thoughts, feelings, attention, and willingness of students so that it can encourage a deliberate, purposeful, and controlled learning process [4]. Therefore, the development of learning media needs to be carried out at Primary School Teacher Education, Faculty of Science Education, Universitas Negeri Medan on

Bilingual Learning course. One of the optimization efforts that can be done by lecturers is to hold an e-book that is packaged in an attractive way.

Based on the background of the study described above, how is the effectiveness of e-book learning media on Bilingual Learning course as the problem in this research. The purpose of this study is to determine the effectiveness of e-book learning media on Bilingual Learning course.

2. METHOD

This research is a type of research and development. According to Sugiono in Wanto, et al., the definition of Research and Development (R&D) is often interpreted as a process or steps to develop a new product or improve an existing product [5]. Furthermore, according to Effendi & Hendriyani in Wanto, et al., research on model development with interactive media can also be done online. One type of research that can be a link or breaker of the gap between basic research and applied research is research and development. Research and Development is a type of research that aims to produce a certain product and test the quality of the product [6]. This research and development uses descriptive analysis techniques. Descriptive analysis techniques are carried out to analyze data by describing the data that has been collected from the results of development. This research will be carried out in the department of Primary School Teacher Education State University of Medan for 11 months, starting from January to November 2021. The product that will be produced in this study is an e-book learning media on Bilingual Learning course in the department of Primary School Teacher Education State University of Medan. While there are several elements of research subject, such as:

a) Material expert

This research requires a material expert as a validator or giver of advice or comments regarding aspects of content and learning.

b) Media expert

Media expert has the right to validate e- books developed in terms of appearance, media elements and grammar.

c) Test subject

The selection of the subject will be carried out randomly with the hope that it can become a source of data from representatives of the department of Primary School Teacher Education State University of Medan college students in semester III of the 2021/2022 academic year.

The data collection techniques in this study are observation, validation sheets and test. Observation will be carried out to find out the character of the college students and the technology used by the college students so that the product to be developed is in accordance with the result of the observation. Validation sheets were used to collect data on material expert validation and media expert validation

regarding the developed product. Test is used to collect data about the increase of the college students' cognitive learning outcomes before and after participating in learning using e-book learning media. The development model used in this study is the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model. This paper only explains the effectiveness of the developed product because the feasibility of develop product have been published in the previous article.

3. RESULT AND DISCUSSION

3.1 Result

After the developed product is declared feasible by material and media experts, proceed to the field trial. The trial was carried out in learning using e-book learning for the Primary School Teacher Education department college students in class F 2021. The data from the results of this field trial were used to determine the increase in college students' cognitive learning outcomes. The results of the field trial are presented in the following table.

Table 1. Pre-Test Result

Respondents	Items															Correct	Score	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	14	93.3
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100.0
3	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	14	93.3
4	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	12	80.0
5	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	13	86.7
6	1	0	0	0	1	1	1	0	1	0	0	1	0	0	0	0	6	40.0
7	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	13	86.7
8	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	12	80.0
9	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	13	86.7
10	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	12	80.0
11	0	1	1	1	0	1	1	1	1	1	1	0	1	1	0	0	11	73.3
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100.0
13	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	14	93.3
14	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	14	93.3
15	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	14	93.3
16	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	13	86.7
17	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	13	86.7
18	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	12	80.0
19	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	13	86.7
20	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	14	93.3
21	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	13	86.7
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100.0
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100.0
24	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	13	86.7
25	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	14	93.3
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100.0
27																	0	0.0
28	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	14	93.3
29	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	13	86.7
30	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	14	93.3
31	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	13	86.7
32	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	13	86.7
33	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	12	80.0
34	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	14	93.3

Based on the table, it can be seen that in the pre-test used 14 items and 34 college students as respondents who answered the items but one of them was not present during the pre-test.

Table 2. Post-Test Result

Respondents	Items														Correct	Score	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			15
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100,0
2	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	14	93,3
3	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	14	93,3
4	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	13	86,7
5	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	12	80,0
6	1	0	1	1	1	1	1	0	1	1	1	0	1	1	1	12	80,0
7	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	13	86,7
8	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	13	86,7
9	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	13	86,7
10	1	1	1	1	1	1	0	1	0	1	1	0	1	1	1	12	80,0
11	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	12	80,0
12	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	14	93,3
13	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	14	93,3
14	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	14	93,3
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100,0
16	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	13	86,7
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100,0
18	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	13	86,7
19	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	14	93,3
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100,0
21	1	1	0	1	1	1	0	1	1	1	1	1	1	0	1	12	80,0
22	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	14	93,3
23	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	14	93,3
24	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	13	86,7
25	1	1	0	1	1	1	1	1	0	1	0	1	0	1	1	11	73,3
26	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	14	93,3
27																0	0,0
28	1	1	0	1	1	1	0	1	1	1	1	1	1	0	1	12	80,0
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100,0
30	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	14	93,3
31	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	13	86,7
32	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	14	93,3
33	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	14	93,3
34	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	14	93,3

Based on the table, it can be seen that in the pre-test used 14 items and 34 college students as respondents who answered the items but one of them was not present during the post-test.

Table 3. Gain Analysis Of College Students' Cognitive Learning

Subject	Total Pre-test Score	Total Post-test Scores	Std Gain
1	93,3	100	1,0000
2	100	93,3	0,0000
3	93,3	93,3	0,0000
4	80	86,7	0,3350
5	86,7	80	-0,5038
6	40	80	0,6667
7	86,7	86,7	0,0000
8	80	86,7	0,3350
9	86,7	86,7	0,0000
10	80	80	0,0000
11	73,3	80	0,2509
12	100	93,3	-1,0000
13	93,3	93,3	0,0000
14	93,3	93,3	0,0000
15	93,3	100	1,0000
16	86,7	86,7	0,0000
17	86,7	100	1,0000
18	80	86,7	0,3350
19	86,7	93,3	0,4962
20	93,3	100	1,0000
21	86,7	80	-0,5038
22	100	93,3	0,0000
23	100	93,3	0,0000
24	86,7	86,7	0,0000
25	93,3	73,3	-2,9851
26	100	93,3	0,0000
27			0,0000
28	93,3	80	-1,9851
29	86,7	100	1,0000
30	93,3	93,3	0,0000
31	86,7	86,7	0,0000
32	86,7	93,3	0,4962
33	80	93,3	0,6650
34	93,3	93,3	0,0000
Total Score	2900,0	3053,3	0,307
Score Average	85,3	89,8	0,306
Lowest Score	0,0	0,0	
Highest Score	100,0	100,0	
Gain Category			Sedang

Based on the table, it can be seen that the total pre-test score was 2900, the total post-test score was 3053.3, the average pre-test score was 85.3, the average post-test score was 89.8, the lowest pre-test score was 0, the lowest post-test score is 0, the highest pre-test score is 100, the highest post-test score is 100 and the gain score is 0.307. If seen from the gain score obtained, the increase in college students' cognitive learning outcomes is in the medium category. This shows that the use of e-book learning media can improve college students' cognitive learning outcomes.

3.2 Discussion

The Dick and Carey's ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) is used in this research and development. The results show that the total pre-test score was 2900, the total post-test score was 3053.3, the average pre-test score was 85.3, the average post-test score was 89.8, the lowest pre-test score was 0, the lowest post-test score is 0, the highest pre-test score is 100, the highest post-test score is 100 and the gain score is 0.307. If seen from the gain score obtained, the increase in college student cognitive learning outcomes is in the medium category. Based on the results, the research that has been done proves that college students' cognitive learning outcomes can be improved through the development of e-book learning media.

4. SECTIONS

Based on the results, the research that has been done proves that college students' cognitive learning outcomes can be improved through the development of e-book learning media because the gain score obtained is 0.307 which is included in the medium category.

5. ACKNOWLEDGMENTS

Special thanks to Prof. Dr. Baharuddin, M.Pd. for the funds that have been given through the Community Service Institute of State University of Medan, may you always be blessed by God Almighty in your work, health, long life and all elements of life.

6. REFERENCES

- [1] Depdikbud. 2003. *Undang-Undang RI Nomor 20 Tahun 2003, tentang Sistem Pendidikan Nasional*.
- [2] Kemendikbud. 2014. *Permendikbud Nomor 59 Tahun 2014 Tentang Kurikulum 2013 Sekolah Menengah Atas/Madrasah Aliyah*. Jakarta: Kemendikbud.
- [3] Azhar, Arsyad. 2003. *Media Pembelajaran*. Jakarta: PT Raja Grafindo.
- [4] Miarso, Yusufhadi. 2011. *Menyemai Benih Teknologi Pendidikan*. Jakarta: Kencana Prenada Media Group.
- [5] Wanto, S., Okilanda, A., Arisman, Lanos, M. E., Putra, D. D., Lestari, H., . . . Oktariyana. 2020. Kupas Tuntas Penelitian Pengembangan Model Borg & Gall. *Jurnal PKM Ilmu Kependidikan*, 3 (1): 46-55.