

The Effectiveness of Developing Interactive Learning Media on Learning Basic Concept Material

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Abstract: This study's aim was to determine the interactive learning media effectiveness on the Learning Basic Concept material. The ADDIE Robert Maribe Branch approach is being used in this research and development. Regarding product effectiveness, in the field trial conducted, the t-test result was obtained $t_{count} = 5.09$ while $t_{table} = 1.699$ at significance level of 0.05. This shows that $t_{count} > t_{table}$, then H_0 is rejected and H_a is accepted, so that interactive learning media based Lectora Inspire is effectively used in the learning process.

Keywords: Interactive Learning Media, Learning Basic Concept Material, Effectiveness

1. INTRODUCTION

The 4.0 industrial revolution is a challenge for everyone. Various institutions and industries are experiencing rapidly disruptive technology. Science and information technology developments have a significant impact on many aspects of human existence, including education. In order to develop human potential and generate superior human resources, education is crucial. It can be reviewed in Undang-Undang No. 20 Pasal 3 Tahun 2003 concerning the National Education System, namely that national education functions to develop capabilities and shape the character and civilization of a dignified nation in the context of educating the nation's life and aims to develop the potential of students to become human beings who believe and fear God Almighty, noble, healthy, knowledgeable, capable, creative, independent and become a democratic and responsible citizen [1].

If the goals for education quality can be met and have an effect on raising the standard of human resources, then education quality improvement has been effective. No exception, higher education must also keep enhancing the human resource market competitiveness. Universities must be able to create and provide competency-based education in order to generate graduates who are competent in their respective disciplines as they face the 4.0 industrial revolution. The learning process in education in the period of the fourth industrial revolution must be able to include technology.

Lecturers, who serve as the basis of higher education at universities, must be ready to adapt to the 4.0 industrial revolution by strengthening their expertise since they will be teaching students from the digitally native millennial age. They are familiar with various technologies that are growing rapidly so that they pose challenges for lecturers. Lecturers must continue to learn to improve their competence to face the millennial generation college students. At the 2018 World Economic Forum, Alibaba Group CEO Jack Ma said stated that education is one of the biggest challenges. If don't change the education system, human life can face problems in the future. Education is the major issue at the moment. if don't modify the way or the teaching system then in 30 years it will

be an issue [2]. Therefore, lecturers in the era of the 4.0 industrial revolution need to be proficient in information technology. Technology can assist lecturers in managing materials more efficiently so that the learning process is successful.

One of Indonesia's higher education institutions, State University of Medan is tasked with producing qualified teachers who are competitive graduates. As an important element of State University of Medan, the Economics Education study program contributes to the achievement of the university's purpose. According to the observation made, interactive learning material are required to make the teaching and learning process easier. This problem became more apparent when discussions were held with KDBK lecturers for the same material that college students' mastery of the Learning Basic Concept material was relatively low. The scores of college students on the Mid-Semester Examination in the odd semester of last year show a low level of understanding of the Learning Basic Concept material. Based on the problem and reality above, optimization effort in the form of comprehensive research on interactive learning media on the Learning Basic Concept material is required to solve the problem encountered. This research is critical and must be conducted, so that mastery of the content may be accomplished comprehensively. Based on the description, the researchers are interested in carrying out research and development with the title "THE EFFECTIVENESS OF DEVELOPING INTERACTIVE LEARNING MEDIA ON LEARNING BASIC CONCEPT MATERIAL".

2. METHOD

Research and development methods are being used in this study. The research and development method is a research method used to produce certain product and test the effectiveness of the product [3]. This study intends to provide interactive learning media on Basic Concepts Learning materials which are made systematically and assessed for their effectiveness. ADDIE Robert Maribe Branch approach in Sugiyono is used in this research. Mulyatiningsih suggested that the ADDIE model can be used for various forms of product development in learning activities such as models, learning strategies, learning methods, medias, and teaching

materials [4]. This study lasted 11 months, from January to November 2022, at the Economic Education Study Program, Faculty of Economics, State University of Medan. In order to collect data from representatives of college students enrolled in the Economic Education study program at the Faculty of Economics at State University of Medan during the even semester of the 2022–2023 academic year, the trial participants were chosen at random. Sugiyono stated that data collection techniques are the most strategic steps in research, because the main purpose of research is to obtain data [5]. In this study, tests were used to collect data on college students learning outcomes before and after being taught using interactive learning media based Lectora Inspire. In this paper, only the effectiveness of the product being developed are explained.

3. RESULT AND DISCUSSION

3.1 Result

After the developed product is declared eligible to be tested by material and media experts, it will proceed to the field trial. This field trial was carried out using an experiment method. The researcher first gave a pre-test to all trial college students of the Economic Education Study Program, Faculty of Economics, State University of Medan. Furthermore, researchers conduct learning using the product developed. After that the researcher gave a post-test to all trial college students of the Economic Education Study Program, Faculty of Economics, State University of Medan. The pre-test and post-test scores are as follows:

Table 1. Pre-Test and Post-Test Results

No.	College Students	Pre-Test (X1)	Post-Test (X2)
1	AS	56	80
2	ASTP	56	81
3	ARRN	56	86
4	ARH	29	71
5	ASR	47	83
6	AK	56	80
7	ATA	48	78
8	ASI	43	80
9	ARIS	78	96
10	CKM	46	93
11	CNF	72	84
12	DNK	69	93
13	EGF	36	76
14	ELZ	68	80
15	GS	63	92
16	HFA	54	89
17	HWL	58	91
18	IPA	76	94
19	LP	60	78
20	MAA	52	76
21	MZHF	52	76
22	MAF	48	76
23	MJDP	59	80
24	N	59	84
25	OA	51	81
26	SN	65	80
27	SPEs	52	91
28	SS	72	83
29	WAP	52	76
30	WD	72	92
	Total	1705	2500
	Average	56.83	83.33

Based on table 1, it can be seen that the results of pre-test and post-test show a difference, namely from the result of pre-test before using interactive learning media based Lectora Inspire obtaining an average of 56.83 then the post-test result after using interactive learning media based Lectora Inspire earned a gain of 83.33. So, it can be concluded that there is an increase in college students learning outcomes after using

interactive learning media based Lectora Inspire. However, to obtain more significant result, the researchers will use the t-test calculation.

The t-test was conducted to obtain more significant result and to determine the effectiveness of the product being developed. The calculation of the t-test is carried out with the following steps:

Step 1: Make H_a and H_o in sentence form

H_a = there is a significant difference between before and after using learning media based Lectora Inspire.

H_o = there is no significant difference between before and after using learning media based Lectora Inspire.

Step 2: Finding t_{count}

Step 3: Determine the t-test criteria

If $t_{count} > t_{table}$, then the result is significant, meaning that H_a is accepted.

If $t_{count} < t_{table}$, then the result is non-significant, meaning that H_a is rejected.

Step 4: Determine the statistical results on the pre-test and post-test with the t-test formula

After calculating using the t-test formula, the statistical results are 5.09

Step 5: Comparing t_{count} and t_{table}

t_{hitung} is 5.09

t_{table} is 1.699

Step 6: Conclusion

The calculation result show that t_{count} is greater than t_{table} , so H_o is rejected and H_a is accepted. It means that there is a significant difference between college students scores before and after using interactive learning media based Lectora Inspire. Based on the result, it can be concluded that there is a significant increase in learning outcomes between before and after using interactive learning media based Lectora Inspire. In this case, interactive learning media based Lectora Inspire is effectively used in the learning process. In this way, interactive learning media based Lectora Inspire is able to help the learning activities take place in achieving learning objectives and plays an important role in encouraging the effectiveness of learning activities.

3.2 Discussion

The procedure in this research and development adapts from the summary of Instructional Design with the ADDIE Robert Maribe Branch approach in Sugiyono which consists of five stages, namely 1) Analysis, 2) Design, 3) Development, 4) Implementation and 5) Evaluation [6]. The results of pre-test and post-test show a difference, namely from the result of pre-test before using interactive learning media based Lectora Inspire obtaining an average of 56.83 then the post-test result after using interactive learning media based Lectora Inspire earned a gain of 83.33 and the result of t-test calculation show that t_{count} (5.09) is greater than t_{table} (1.699). Based on the results, the research that has been done proves that the development of interactive learning media based on Lectora Inspire is effectively used as a learning media by college students.

4. CONCLUSION

Regarding product effectiveness, in the field trial conducted, the t-test result was obtained $t_{count} = 5.09$ while $t_{table} = 1.699$ at significance level of 0.05. This shows that $t_{count} > t_{table}$, then H_o is rejected and H_a is accepted, so that interactive learning

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