The Effect of Flipbook-based Learning Material in Civic Education on the Learning Outcome of State University of Medan Students

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Abstract. This research aims to analyze: The learning outcome of students who uses flipbook-based civic education learning material; The learning outcome of students who doesn't use flipbook-based civic education learning material; The effect of flipbook-based civic education learning material on students learning outcome. The design of the research is quasi-experimental. The population of research is all of Civic Education Study Program students, numbering 60 students. Total sampling technique was used, so the sample is 60 students. The data collection technique used was questionnaire. Data analysis techniques used are description, trends and analysis prerequisite tests using normality test, homogeneity test, and hypothesis test with t-test. The results show that the learning outcome of students using flipbook-based civic education learning material tends to be in high category at 96.67% and the learning outcome of students who don't use flipbook-based civic education learning material tends to be in poor category at 76.67%. T-test results show that there is a positive and significant effect of flipbook-based civic education learning material on students learning outcome with ($t_{calculated} > t_{table}$) ($16.985 > 1.671$) with a 5% significance. This shows that Flipbook-based Learning Material in Civic Education has an effect on the Learning Outcome.

Keywords: Learning material, flipbook, learning outcome, student

1. Introduction

Innovation in teaching-learning process in tertiary education is crucial as technology develops rapidly. Technology helps the teaching-learning process in various ways. Teaching-learning process is not only concerned with delivering learning materials, but also with a clear concept so that the learning material can be delivered clearly. Lesson design and planning is needed so that the teaching-learning process is carried out more effectively so that students become more active in learning. Teacher and lecturer plays the role of educator, motivator, facilitator, moderator, evaluator, guide, and innovator so they are expected to control and manage the class during teaching-learning process (Saputro, 2019).

Technological advances drive changes, including in education with the media learning concept. Media learning makes learning process more effective and efficient as learning is not

tied to teacher/lecturer meeting face-to-face with students at the same time. One of the ways to deliver material is using relevant learning material such as flipbook-based learning material. Gramatically, flipbook means a book that can be flipped (Riyanto, 2020). Flipbook, in this case, is a digital book in which a reader can flip the pages as if it was a physical book. An interesting flipbook design can attract readers who use it in learning process (Humairah, 2022).

Civic Education is a compulsory course for students in State University of Medan. The learning objectives of Civic Education is to explain the description of civic education, civic education in other parts of the world, the essence and substance of civic education, and the basics of civil law. Civic Education aims to build attitude and ability of national defence. Different from mandatory training which focuses on the physical aspect of national defence, civic education focuses more on the cognitive and affective aspects (Amin, 2010). According to Somantri, civic education is a study program about political democracy enriched with other knowledge sources, positive effects of education, school, society and parents, all of which are developed such that the students can possess critical and analytical thinking, and act democratic in order to prepare a democratic life based on Pancasila and UUD 1945 (Camelia, 2020). Based on several definitions of civic education, it can be concluded that civic education is a study program which focuses on the cognitive and affective aspect of a political democracy based on Pancasila and UUD 1945 values at its core.

The author observed the students taking Civic Education course in 2022/23 academic year who took remote learning classes during the COVID pandemic. The remote learning affected teaching-learning process in Indonesia in terms of material delivery and poor learning outcome. This is due to poor adaptation in education and technology (both from the lecturer and students), even though technology should help learning process. The lecturers also only use conventional lecture method resulting in inadequate delivery of material and evaluation.

Therefore, the study entitled "The Effect of Flipbook-based Learning Material in Civic Education on the Learning Outcome of State University of Medan Students" needed to be conducted. The research aims to determine: The learning outcome of students who uses flipbook-based civic education learning material; The learning outcome of students who doesn't use flipbook-based civic education learning material; (3) The effect of flipbook-based civic education learning material on students' learning outcome.

2. Method

The research was conducted in State University of Medan in 2022/2023 academic year odd semester. The population of research is all of Civic Education Study Program students, numbering 60 students. Total sampling technique was used, so the sample is 60 students. The data collection technique used was questionnaire. Data analysis techniques used are description, trends and analysis prerequisite tests using normality test, homogeneity test, and hypothesis test with single-sided t-test to determine the effect of Flipbook-based learning material in Civic Education on the learning outcome of State University of Medan Students using the equation

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1 - n_2)s_1{}^2 + (n_2 - 1)s_2{}^2}{n_1 + n_2 - 2}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \tag{1}$$

where

t = calculated t value

X_1 = sample 1 average

X_2 = sample 2 average

$s_1{}^2$ = sample 1 variance

$s_2{}^2$ = sample 2 variance

n_1 = sample 1 standard deviation

n_2 = sample 2 standard deviation

Value of $t_{calculated}$ is compared to the value of t_{table} with the degree of freedom (df = $n_1 + n_2 - 2$) and $\alpha = 0.05$ and : if $t_{calculated} > t_{table}$, then Ha is accepted and Ho is rejected: If $t_{calculated} < t_{table}$, then Ho is accepted and Ha is rejected.

where:

Ha: Flipbook-based learning material in Civic Education affects the learning outcome of State University of Medan Students.

Ho: Flipbook-based learning material in Civic Education does not affect the learning outcome of State University of Medan Students.

3. Results and Discussion

3.1 Frequency distribution of pre-test for the group using flipbook-based learning material in Civic Education

The results show that the highest and lowest scores are 22 and 19.7 respectively, and a standard deviation of 2.325. Table 1 shows that the frequency distribution of student group using flipbook-based learning outcome in Civic Education in the 20-21 interval numbers 30% while the lowest frequency class interval is 1-15 at 3.33%.

Table 1. Frequency distribution of pre-test for the group using flipbook-based learning material in Civic Education

No.	Class Interval	Frequency	Relative Frequency
1	13-15	1	3,33
2	16-17	5	16,66
3	18-19	7	23,33
4	20-21	9	30,00
5	22-23	8	26,66

6	24-25	0	0,00
	Total	30	100,00

3.2 Frequency distribution of pre-test for the group not using flipbook-based learning material in Civic Education

The results show that the highest and lowest scores are 21 and 17.5 respectively, and a standard deviation of 2.37. Table 2 shows that the frequency distribution of student group not using flipbook-based learning outcome in Civic Education in the 17-18 interval with frequency of 33.33% while the lowest class interval is 1-22 at 10.00%.

Table 2. Frequency distribution of pre-test for the group not using flipbook-based learning material in Civic Education

No.	Class Interval	Frequency	Relative Frequency
1	13-14	4	13,33
2	15-16	5	16,66
3	17-18	10	33,33
4	19-20	8	26,66
5	21-22	3	10,00
6	23-24	0	0,00
	Total	30	100,00

3.3 Frequency distribution of learning outcome for the group using flipbook-based learning material in Civic Education

The results show that the highest score and lowest score are 42 and 32 respectively. The average score is 37.5 and standard deviation is 2.7. The frequency distribution of learning outcome of students using flipbook-based learning material in Civic Education can be seen in Table 8. The class intervals with highest frequency are the 36-37 and 38-39 intervals at 30%, while the class interval with lowest frequency is the 32-33 interval at 6.66%.

Table 3. Frequency distribution of learning outcome for the group using flipbook-based learning material in Civic Education

No.	Class Interval	Frequency	Relative Frequency
1	32-33	2	6,66
2	34-35	4	13,33
3	36-39	9	30,00
4	38-39	9	30,00

5	40-41	3	10,00
6	42-43	3	10,00
Total		30	100,00

3.4 Frequency distribution of learning outcome for the group not using flipbook-based learning material in Civic Education

The results show that the highest and lowest scores are 35 and 30.3 respectively, and a standard deviation of 2.18. Table 4 shows that the frequency distribution of student group not using flipbook-based learning outcome in Civic Education in the 30-31 interval numbers 33.33% (highest frequency) while the class interval with the lowest frequency is 34-35 at 6.66%.

Table 4. Distribution of Learning Outcome for the Group Not Using Flipbook-based Learning Material in Civic Education

No.	Class Interval	Frequency	Relative Frequency
1	26-27	3	10,00
2	28-29	8	26,66
3	30-31	10	33,33
4	32-33	7	23,33
5	34-35	2	6,66
6	36-37	0	0,00
Total		30	100,00

3.5 Trend of Learning Outcome for the Group Using Flipbook-based Learning Material in Civic Education

The results show that the trend of learning outcome is categorized as high, adequate, inadequate, and poor. The trend of learning outcome of students using flipbook-based learning material in Civic Education can be seen in Table 5. Most (96.67%) are categorized as high while 3.33% are categorized as adequate.

Table 5. Trend of Learning Outcome for the Group Using Flipbook-based Learning Material in Civic Education

Score Range	N	%	Category
>33	29	96,67	High
> 22-33	1	3,33	Adequate
> 13-22	0	0,00	Inadequate

<13	0	0,00	Poor
Total	30	100,00	

3.6 Trend of Learning Outcome for the Group Not Using Flipbook-based Learning Material in Civic Education

The results show that the trend of learning outcome is categorized as high, adequate, inadequate, and poor. The trend of learning outcome of students not using flipbook-based learning material in Civic Education can be seen in Table 6. Most (76.67%) are categorized as adequate while 23.33% are categorized as high.

Table 6. Trend of Learning Outcome for the Group Not Using Flipbook-based Learning Material in Civic Education

Score Range	N	%	Category
>33	7	23,33	High
> 22-33	23	76,67	Adequate
> 13-22	0	0,00	Inadequate
<13	0	0,00	Poor
Total	30	100,00	

3.7 Normality Test

Normality test is conducted using chi-square (x^2) analysis. Normality of the data is determined by comparing $x^2_{calculated}$ with x^2_{table} at 5% significance. The degree of freedom is set using k-1 formula based on normal curve.

Table 7. Normality Test Result

No.	Group	$x^2_{calculated}$	x^2_{Table}
1	Using flipbook-based learning material in Civic Education	5,45	11,070
2	Not Using flipbook-based learning material in Civic Education	10,9	11,070

It can be seen in Table 7 that the learning outcome of students using flipbook-based learning material in Civic Education has $x^2_{calculated} < x^2_{table}$ (5.45 < 11.070) which means that the data is *Normally distributed*. While the learning outcome of students not using flipbook-based learning material in Civic Education has $x^2_{calculated} < x^2_{table}$ (10.9 < 11.070) which means that the data is *Normally distributed.*

3.8 Homogeneity Test

The data which have been tested for normality, need to be tested for homogeneity to prove the hypothesis. Barlet test or F-test were used to test for homogeneity. Homogeneity test is conducted by comparing $F_{calculated}$ using the lowest variance and F_{table} at significance 0.05. $F_{calculated} < F_{table}$ (1.16 < 1.85), so it can be concluded that the null hypothesis (H_o) is accepted. In other words, both groups of sample are homogeneous or have the same variance.

Table 8. Homogeneity Test Result

Group	Variance	$F_{calculated}$	F_{table}	Result
Distribution of Learning Outcome for the Group Using Flipbook-based Learning Material in Civic Education	5.83			
Distribution of Learning Outcome for the Group Not Using Flipbook-based Learning Material in Civic Education	5.03	1.16	1.85	Homogeneous

3.9 Hypothesis Test

It can be seen in Table 9 that $t_{calculated} > t_{table}$ (16.985 > 1.671) so it can be concluded that there is a positive and significant effect of flipbook-based learning material in Civic Education on learning outcome of students. This means that flipbook-based learning material affects the learning outcome of Civic Education students.

Table 9. Hypothesis Test Result

Group	Mean	Sd	$t_{calculated}$	t_{table}	Result
Distribution of Learning Outcome for the Group Using Flipbook-based Learning Material in Civic Education	37.3	5.83			
Distribution of Learning Outcome for the Group Not Using Flipbook-based Learning Material in Civic Education	30.2	5.03	16.985	1.671	H_a accepted

3.10 Discussion

The results show that the learning outcome of group using flipbook-based learning material in Civic Education is mostly in the high category (96.67%). This is in line with Yusriana Soejana (2018) titled "The effect of flipbook-based e-module learning media using problem-based learning on motivation and learning outcome of XII MIPA SMA Negeri 1 Wajo students (A study on Solution Colligative Properties)". The study shows that the learning outcome for the group using Flipbook-based Learning Material in Civic Education tends to be in high category at 84.85%. Meanwhile, the learning outcome for the group not using flipbook-based learning material in Civic Education tends to be in the adequate category at 76.67%. This is supported by Lestari (2022) whose research titled "The effect of flipbook in matter pressure topic on independence and learning outcome of SMP students" show that the students not using flipbook tends to be in the adequate category at 73.33%.

T-test results show that there is a positive and significant effect of flipbook-based civic education learning material on students' learning outcome with $t_{count} > t_{table} = 12.83 > 1.671$ with a 5% significance. This means that flipbook-based learning material affects the learning outcome of students in Civic Education course. This is supported by Harjanto (2021) in his research titled "Kvisoft Flipbook maker-based local-wisdom-integrated thematic learning material to increase primary school students' learning outcome" who found that there is a positive and significant effect of the learning material on learning outcome with $t_{calculated} > t_{table}$ ($4.37 > 1.661$).

Previous research find that flipbook has a significant effect on learners' independence in studying in the "Good" category (Khairinal et al., 2021). The use of electronic learning material conditions learning process to be more structured, independent, and complete. It also helps lecturer to carry out teaching-learning process and the students to have easier time studying. Technology-based learning also saves time, makes students more independent and active, and makes learning process more interesting (Susanti et al., 2020).

4. Conclusion

From the results of this study, the following can be concluded:
1. The learning outcome for the group using flipbook-based learning material in Civic Education tends to be in the high category at 96.67%.
2. Meanwhile, the learning outcome for the group not using flipbook-based learning material in Civic Education tends to be in the adequate category at 76.67%.
3. T-test results show that there is a positive and significant effect of flipbook-based civic education learning material on students' learning outcome with $t_{calculated} > t_{count}$ ($12.83 > 1.671$) at 5% significance. This means that flipbook-based learning material affects the learning outcome of Civic Education students.

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