

The Effect of Using the Assemblr Edu Application as A Media for Learning Subjects in Science on Students' Interests and Learning Outcomes (Case Study: Bedug State Primary School 01)

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Published:
January 31, 2024

Abstract: The digital era continues to evolve and has a significant impact on every aspect of life, including education. With the increasing digitization in the world of education, there are many choices of learning media that can be utilized for teaching and learning activities, one of which is Assembly Edu. This research aims to assess the extent of the influence of using Assemblr Edu on the interest and learning outcomes of students at SD Negeri Bedug 01 in the subject of Natural and Social Sciences. The research method employed is a quantitative research method. This study involved pre-tests and post-tests, as well as the formation of experimental and control groups to explore the experiences and outcomes of students using Assemblr Edu compared to the control group. The researcher found that there is a positive influence of using Assemblr Edu on the interest and learning outcomes of students. Statistical analysis shows a significant relationship between Assembly Edu and students' interest and learning outcomes. The results of this study provide an overview of the significant effects of information technology when used as a learning medium by teachers.

Keywords: Assembly edu, Learning Interest, Learning Outcome

INTRODUCTION

Education is an essential foundation in the development of society in the world, including in Indonesia. Education has always been the main goal of the Indonesian government, which is reflected in the fourth paragraph of the opening of the 1945 Constitution, where it is written that one of the goals of the formation of Indonesia was to make the nation's life more intelligent. With education, people will be motivated to improve their standard of living and answer all world challenges with their competence (Alpian et al., 2019). Along the way, the world of education has experienced many changes, one of which is the integration of education with technology. The existence of technology gives rise to many benefits for the smooth running of the teaching and learning process. Technological developments have given rise to non-face-to-face learning, ease

of processing assessment data and the emergence of new methods that make it easier for teachers and students in the learning process (Jamun, 2018). According to Khotimah et al. (2019), with technology, teachers can design learning that is very interesting and allows teachers to deliver learning better. One crucial factor that can affect the effectiveness of a learning process is interest in learning (Eveline & Hartini, 2015). If students are interested in learning, then these students will follow the learning process with focus and volunteering (Yessy, 2020). This interest will also encourage students to learn something and see how their learning material relates to themselves. If students realize the benefits, they will be satisfied, more interested, and motivated to learn it (Slameto, 2021). The sense of satisfaction and fun experienced by students will ultimately strengthen the learning outcomes obtained from a learning process (Khodijah, 2016). This also applies to science learning. If students have an interest in learning, the learning outcomes will be better than those who do not have an interest in learning.

Some research shows that many students find learning science difficult and unpleasant. Research conducted by (Rumiati & Wahyudi, 2022) shows that out % of 43 students, 63% of them, or around 27 students consider learning science difficult. Another study by Andira et al. states that many students feel bored or bored with science learning, causing a lack of interest in the learning (Andira et al., 2022). Based on the research above, we can conclude that it is challenging for teachers, especially elementary school teachers, to be motivated to create more exciting and fun learning. Creating fun learning can be done with learning tailored to elementary school children's characteristics.

For science and science subjects at the elementary school level, teachers must have innovative strategies to attract children's attention, unlike when teaching at both junior high school and senior high school (Hasbullah et al., 2022). When teaching science and science subjects in elementary school, you must provide teaching that is as creative as possible so that students do not get bored easily. In this era, one of the things that always makes children interested is technology. According to (Siregar, 2021), the use of remote technology makes elementary school-age children more motivated and closer to the material taught by teachers in class. Therefore, the researcher intends to conduct research to find the effect of using the Assemblr Edu application as a learning medium for science subjects at SD Negeri Bedug 01, Pangkah District, Tegal Regency.

METHOD

In this research, researchers used quantitative methods as the method that will be used to find the relationship between the influence of the Assembler Edu application on student interests and learning outcomes. Quantitative research methods are research methods that use data in the form of numbers, which are processed carefully and thoroughly to produce a conclusion from a phenomenon being researched (Adnan & Latief, 2020). The design used in this research is to form an experimental group that will receive science lessons using Assembler Edu and form a control group that receives science lessons without using the Assembler Edu learning media. Both groups, both the experimental group and the control group, will carry out a *pre-test* and *post-test* regarding interest in learning and learning outcomes to see the differences between the two groups after receiving science learning with the predetermined learning model. The framework for thinking in this research can be seen in Figure 1.

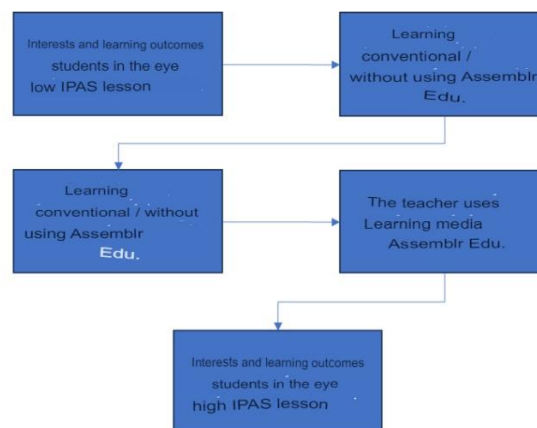


Figure 1. Framework for Thinking

The population of this study were grade 4 students, SD Negeri Bedug 01. From this population, the researchers divided the population into two groups. The first group is the control group, with 21 students, and the second is the experimental group, with 20 students. In this study, the sampling technique is a probability sampling technique with a type of Simple Random Sampling, where sampling is taken randomly or randomly from a homogeneous population (Darwin et al., 2021). The data collection instrument in this study used a questionnaire, which is a tool used to collect data by dividing a list of questions or statements to respondents to get answers (Kurniawan & Puspitaningtyas, 2016) in the form of twenty statements to measure students' interest in learning.

Table 1. Learning Interest Indicators and Sub-Indicators

Learning interest indicators	Sub indicators
Attention	1. Pay attention when the teacher teaches. 2. Have a sense of curiosity.
Feeling happy and not happy	1. Follow the learning process happily 2. Bored
Awareness	1. Study hard.

RESULT

Based on the pre-test and post-test results collected from the questionnaires given to both groups regarding students' interest in learning and learning outcomes, the results were found as described by the researcher in Table 2. The results of the questionnaire showed that there were differences between the two groups. The distribution of the results of the control group tends to be varied, where there are students whose test results have increased, and there are also those who have decreased both on the Learning Interest variable and the Learning Outcome variable. Meanwhile, the experimental group received science students using Assemblr Edu. It can be seen that they have experienced an increase in both their interest in learning and their learning outcomes. The results of this test are in line with research by Yunida (2023), which states that Assemblr Edu. Able to increase students' interest in learning. The test results in Table 2 are also in line with Salpiyah (2023), who found that the use of Assemblr Edu. Able to improve student learning outcomes.

Table 1. Group Division

Control Class	Experimental Class
Addilla Alya Zahira	Airen Indah Nistrina
Ahmad Dhiyaur Rohman	Akhmad Okta Briantara
Aina Zuhrotush Shobah	Daffa Zaidan
Akhmad Sahil Al Faruq	Muhammad Fatkhul Firdaus
Alif Mukhlisoh Anjali	Muhammad Nabil Rabbani Nurfi
Alifhatun Nisa	Mukhamad Kariza Al Fakhri
Alvina Salsabila	Muhammad Ilyas Saputra
Annisa Fitria Salma	Nabilatul Ain
Aqilah Bilqis Irawan	Naila Talita Sakhi
Atha Keanu Adnan Putra	Nur Janah

Atika Zahra Ratifa	Nurhanifah Septiyani
Farisa Defa Amelia	Rafa David Awaludin
Fathina Kayyis Kamila	Rizki Amalatussolikha
Firda Putri Priyadi	Salwa Maulidiya
Iffa Astila Rahma	Syafiyya Rahma Aulia Putri
Laela Syakira	Syahar Banun Chusaina
Mukhamad Aditiya Pratama	Tri Zhurotun Nisa
M. Irgi A. Farizy	Zakira Talita Zahra
M. Zidna Faqih	Zalfa Nur Maulidah
Muhamad Luthfi Al Syabani	Zanita Arumi
Muhammad Miftakhul Qolbi	

Table 2. Student pre-test and post-test results

No	Experimental Class				Control Class			
	Interest to learn		Learning outcomes		Interest to learn		Learning outcomes	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
1	39	50	32	54	30	36	45	42
2	30	58	45	63	35	41	39	39
3	47	62	50	62	31	45	48	43
4	41	62	48	54	33	45	38	45
5	43	61	41	57	46	41	50	40
6	50	57	42	60	32	40	40	39
7	40	59	32	55	39	42	39	40
8	41	62	35	70	43	39	39	43
9	42	51	40	69	41	35	44	43
10	49	51	48	65	37	45	34	39
11	31	66	41	66	31	41	40	35
12	35	61	50	54	37	40	49	42
13	34	65	36	61	40	36	31	43
14	39	66	49	49	41	36	34	40
15	38	64	42	52	33	45	30	41
16	35	67	45	64	46	35	37	35
17	50	66	43	52	33	45	35	35
18	38	50	32	63	50	35	30	37
19	36	54	41	56	41	38	39	44
20	36	65	47	56	43	41	37	40
21					35	37	44	38

Normality test

Table 3. Normality Test

	Kolmogorov-Smirnov			
	Class	Statistics	df	Sig.
Interest_Bell	1	,112	20	,200
	2	,178	20	,097
	3	,141	21	,200
	4	,155	21	,200
Bell_Result	1	,137	20	,200
	2	,147	20	,200
	3	,156	21	,196
	4	,118	21	,200

Based on the results of these calculations, it can be concluded that all pre-test and post-test data, both for looking at Learning Interest and Learning Outcomes, have a normal distribution because they have a big value > 0.05 . Therefore, based on the sig value. Then, parametric tests can be used.

Paired Sample T Test

Table 4. Results of the paired sample T test

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre-Test Experiment on Interest in Learning - Post-Test Experiment on Interest in Learning	-20,150	9,080	2,030	-24,400	-15,900	-9,924	19	0,000
Pair 2	Pre-Test Controls Interest in Learning - Post-Test Controls Interest in Learning	-1,952	8,207	1,791	-5,688	1,783	-1,090	20	0.289
Pair 3	Pre-Test Experimental Learning Results - Post-Test Experimental Learning Results	-17,150	9,304	2,080	-21,504	-12,796	-8,244	19	0,000
Pair 4	Pre-Test Controls Learning Results - Post-Test Controls Learning Results	-1,000	5,933	1,295	-3,701	1,701	-.772	20	0.449

Based on the results of these calculations, it can be concluded that all pre-test and post-test data, both for looking at Learning Interest and Learning Outcomes, have a normal distribution because they have a significant value. > 0.05 . Therefore, based on the sig value. Then, parametric tests can be used.

DISCUSSION

Assemblr Edu's Capabilities. It can be seen from the results of statistical calculations in Tables 3 and 4 to become a learning medium that attracts interest and improves student learning outcomes. In this table, it is clear how Assemblr Edu. could be a way for teachers to make subjects, especially science and science, subjects that students like and improve student learning outcomes. Meanwhile, conventional learning used in the Control Group could have a small impact on student interest and learning outcomes. The advantage possessed by Assemblr Edu. so that it can produce more exciting learning is its ability to present objects in 3D with its *augmented reality features*. This feature for giving things in 3D allows students to use their visual-spatial skills to learn the material being taught. This visual-spatial ability is essential in developing students' intelligence because, at the *golden age*, children can be more effective in learning if they can maximize their visual-spatial abilities (Basiran et al., 2021).

Apart from that, learning using Assemblr Edu in the experimental class, students looked more enthusiastic because they had the opportunity to discuss with their friends. When viewing the projection created by Assembly Edu. Students are more active in asking questions and discussing, including discussions with their peers. Using Assembler Edu, students diligently discuss with their friends during class. The discussion emerged in the form of organic curiosity from students with questions typical of children their age. Seeing this phenomenon, Assemblr Edu also seems capable of maximizing the characteristics of students in the 4th grade of elementary school. At the age of 4th grade, students like to use their motor skills, have a high ability to think and ask questions, are easily distracted by something they find interesting and are very happy with social interactions (Sabani, 2019).

Meanwhile, compared to the control group, they seemed less enthusiastic about the conventional learning methods. In the researchers' observations, students tended to divert their attention to their classmates or looked uncomfortable because they were not holding their cell phones during class. According to the researchers' observations, the last point is crucial and can be seen in the post-test results, where children admitted that they were uncomfortable during learning. The condition where students cannot focus because they are not holding their devices is the impact of the digital era, where student

psychology has changed. Students are more interested in the visuals on their devices (Putra & Wahyuni, 2021).

The learning results found that students who received science lessons using Assemblr Edu had more specific and broader knowledge. Students who are at an age with a high level of curiosity can learn independently by utilizing *augmented reality* and their devices. Researchers found that by using Assemblr Edu, students often asked questions to teachers and compared them with the information they got on the internet. The student's behaviour shows that Assembly Edu can influence learning outcomes by allowing students to search for answers independently. This finding aligns with research by Purbasari and Suryanto (2020), which states that children as *digital natives* can expand their knowledge if they get the proper guidance for using technology.

CONCLUSION

Based on the results of data analysts that the significance value of the paired sample t- test is 0.005, which is < 0.05 and an increase in the average value of 2.38 and reinforced by several previous studies shows that the influence of learning media using the augmented reality-based assembler Edu application on student learning interest is not significant. Based on this conclusion, the researcher suggests that future researchers use this type of accurate experimental research because this study is only pre-experimental, so research can be carried out more in-depth. Researchers advise every educational staff to utilize Assembly Edu as a science learning medium because it has many advantages to increase students' interest and learning outcomes. Apart from the students, the researcher also gave suggestions to researchers to carry out further studies regarding the use of Assembly Edu as a learning media, especially in other regions, considering that with the same learning media and on the same subjects (IPAS) the results can be different in other regions.

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