

The Effect of Audio-Visual Learning Media on the Memory of Elementary School Students



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ABSTRACT: This study aims to determine the effect of using audio-visual learning media on students' memory through the learning outcomes test. This research was conducted using an experimental method involving two classes, namely the experimental class and the control class. The results showed that the experimental class, which used learning media, had quite good learning outcomes after using audio visual, when compared to conventional classes that did not use audio visual learning media. Thus it can be concluded that the increase in learning outcomes in the experimental class shows that students have a good memory of the material they learn through audio visual learning videos. Future researchers are expected to further examine the use of audio-visual learning media from different perspectives.

KEYWORD: audio-visual learning, memory

INTRODUCTION

Advances in science and technology have brought changes in all sectors of human life, including in the realm of formal education. Education is one of the most important things in human life. Education is an effort to help the souls of students both physically and mentally, from their nature towards a humane and better civilisation (Sujana, 2019). Education makes a very real contribution in helping to provide a skilled, educated, and knowledgeable workforce that is relevant to market demands so that it can open the door to shared prosperity and has an important role in creating innovation and increasing productivity (Roseno & Wibowo, 2019., Purwo, 2017., Aini et al., 2018). In an effort to develop the intellectual level and personality of students, it is necessary to plan and implement an education system that applies to everyone in order to create new innovations (Rahayu et al, 2021., Nisrokha, 2018., Dimiyati and Mudjiono, 2015). This can be realised through an effective learning process that is able to meet the learning needs of students. The learning needs of each learner are unique. According to R. Herdlein and E. Zurner (2015) and Sugiharton, et al (2007) that the learning process that can respond to students' learning needs through meaningful activities that involve students in it is one part of the characteristics of effective learning.

Education, by its very nature, involves communication between teachers and learners with the aim of helping learners to achieve educational goals. Educational interaction occurs in the school environment to provide learners with better knowledge and understanding through the learning process. Learning is an effort to make students learn or an activity to teach students (Supriatna, 2020). This is inseparable from the role of the teacher. The role of the teacher as the main facilitator in the learning process covers various aspects, starting from ensuring the presence of students, delivering learning materials, motivating, guiding, to evaluating learning outcomes, Stenhouse, et al. (Putra and Pratama, 2023).

Effective implementation of learning in an effort to improve learners' memory related to remembering information conveyed in learning. The ability of learners to remember important information in learning is necessary. Strong memory helps learners absorb the knowledge taught at school. Syariah, (Anisah and Maulidah, 2022) said that the ability to remember or memory is an important component in the process (encoding), storing (storage) and reissuing information (retrieval) in memory. Therefore, teachers must actively increase their creativity, to provide learning media that can create effective learning situations and can improve students' memory, so that it has an effect on improving learning outcomes.

Learning media is very important in the learning process. The use of various media in learning can help avoid monotony in learning and make learning more interesting and diverse. The lack of learning information sources can hinder the achievement

The Effect of Audio-Visual Learning Media on the Memory of Elementary School Students

of learning process goals, for this reason, strategies are needed in the learning process, including by utilising learning media as a tool in delivering it (Firmadani, 2020). To assist in conveying knowledge, information from the subject matter provided to students, the author chose Audiovisual as a medium to assist in the teaching and learning process. The use of technology in learning can support the development of spiritual, intellectual, social, emotional, kinesthetic and other potential aspects of learners (Sista, 2017). The use of Audiovisual as a media solution to help teachers facilitate the delivery of learning materials and make it easier for students to understand the material delivered by the teacher and can help to improve their memory.

By utilising Audio-visual as learning media, it can raise the enthusiasm of students, so that students are more active and can improve memory. However, the reality that occurs in the researcher's place is that some teachers have not utilised Audio-visual as a learning medium, with several reasons such as the lack of knowledge of teachers to access videos and the reluctance to search and prefer to teach as usual, namely conventional by only using books that have been provided from schools and sometimes using makeshift image media. This certainly has an impact on the enthusiasm for learning of students to be low and affects memory which in turn low student learning outcomes. The use of media that is very dominant in the learning process at school certainly causes students' enthusiasm for learning to be low and affects memory.

Several previous studies related to the use of audio visual media including Gabriela (2021), Novita, L., and Vovianty, A (2020), Fridayanti, et al. (2022), Angreiny, et al. (2020) found that the use of audio visual media has a significant effect on student learning outcomes. Previous research focuses more on science subjects and has not examined social studies material. To fill this void, the researcher will examine the use of audio-visual media in social studies subjects at Ruteng V Catholic Elementary School. This research is important to do because it has a contribution for teachers in elementary schools in an effort to utilise various teaching media that will have an impact on the interest and motivation of learning and student learning outcomes.

METHODOLOGY

This study uses quantitative research with experimental research methods. This study aims to determine the effect of audio-visual media on the memory of grade IV SDK Beokina students. Research design that uses one group pretest and posttest. One group pretest and posttest research design where one group is tested twice, namely before treatment (pretest) and after treatment (posttest) with the aim of knowing changes in the group after being given certain treatments. The subjects of this study were fourth grade students of SDK Beokina. Data analysis used prerequisite tests, namely t test, variance test and hypothesis testing.

RESULTS AND DISCUSSION

1. T test

The sample mean comparison test is used to compare the results in the experimental class with the control class to analyse the research data then tested with the t test to ensure there is a difference between the experimental class and the control class. The data is presented in the following auxiliary table from the experimental and control class posttest data in the following table.

Table 1. T-test auxiliary table of experimental class and control class

Learner's serial number	Posttest	
	Experimental class	Control class
1	28	22
2	25	22
3	26	24
4	27	22
5	25	23
6	25	20
7	25	21
8	24	24
9	25	23
10	24	22
11	26	23
X	25,455	22,364
S ²	1,473	1,455

From table 1, it is known that the average and variance are the average of the experimental class = 25.455, the average of the control class = 22.364, the variance of the experimental class = 1.473, and the variance of the control class = 1.455. based on these

The Effect of Audio-Visual Learning Media on the Memory of Elementary School Students

data, the results of the analysis of the calculated t value are $t = 1.340$ then compared with $\alpha = 0.05 = 0.413$. It can be concluded that the calculated t value of 1.340 is greater than the critical value of the 0.05 level = 0.413. So the use of audio-visual media in the learning process of social studies has a difference with the use of media konvensional.

2. Analysis of Variance (ANOVA)

After conducting a mean comparison test followed by analysis of variance, the variance analysis will test the variations between the experimental class and the control class, the total variation and the interaction variation between the two factors and their effect on the dependent variable (students' memory). Hypothesis testing using the F test with calculation steps and assisted with Microsoft Excel as follows.

Table 2. ANOVA auxiliary table

Learning Outcomes	Strategi Pembelajaran		Number of Rows
	Audiovisual	Konvensional	
(B)	(A1)	(A2)	
High (B1)	28	22	
	25	22	
	26	24	
	27	22	
	25	23	
	25	20	
	25	21	
	24	24	
	25	23	
	24	22	
High (B1)	26	23	
n	11	11	22
$\sum X$	280	246	526
$\sum X^2$	7142	5516	12658
Low (B2)	22	20	
	23	21	
	23	26	
	18	22	
	19	19	
	22	23	
	23	21	
	23	24	
	18	19	
	21	23	
Low (B2)	22	23	
n	11	11	22
$\sum X$	234	241	475
$\sum X^2$	5108	5237	10345
N	22	22	44
$\sum X$	514	487	1001
$\sum X^2$	12250	10753	23003
$\sum X$	23,36363636	22,13636364	45,5

Based on the data in table 2, it can be found that the f count is 13.133. This result is greater than the F table when compared to the F table value at a level of 0.05. So it can be concluded as follows: 1) There is a difference in the memory of students who are treated (using audio-visual media) with students who use conventional media as measured through learning outcomes tests. 2) There is a difference in memory between students with high motivation and low motivation as measured by the learning outcomes

The Effect of Audio-Visual Learning Media on the Memory of Elementary School Students

test. 3) There is an interaction between the learning process by using audio-visual media and there is an influence on the memory of students measured through the learning outcomes test.

3. Hypothesis Testing

Because there is an interaction, the analysis is continued with the post ANOVA test with Tuckey's HSD formula to compare the means with the help of Microsoft Excel. Based on the HSD value, an average comparison between classes can be made with the condition: if the average difference between the compared classes is greater than HSD, then the difference is significant. It is known that the average of group A = 25.455 and group B = 22.182. The test results can be seen in the following table

Table 3. Hypothesis testing

comparison	Average difference	Total	HSD value	Conclusion
A-B	25,455-22,182	3,273	0,7	significant
B-A	22,182-25-445	-3,273	-0,7	not significant

From the data in the table of learning outcomes, the average in group A (experimental class) is higher, it can be concluded that audio-visual media is more effective in improving students' memory compared to conventional media. While the average comparison between classes using audio-visual media obtained significant results because it was greater than the HSD value and classes using conventional media obtained insignificant results.

DISCUSSION

Based on the results of data analysis, it was found that the use of audio-visual media in the experimental class in the learning process had an influence on students' memory. In the t test analysis, it shows that there is a difference between the class that is treated using audio-visual media and the class that uses conventional media, namely the value of t count = 1.340 is greater than the critical t at the 0.05 level, namely = 0.413. The difference is because audiovisual media in the social studies learning process has advantages as explained by Gabriela (2021) that the advantages of audiovisual media are that it provides very clear information, can describe real circumstances, is more realistic, can be repeated as needed. In addition, audio-visual media teaches students to find their own answers to problems through the process of seeing and hearing.

In the analysis (ANOVA) of the three F values (row, column, and interaction) compared to the value of F table = 4.08, F count between rows = 20.321, F count between columns = 5.695, and F count between interactions = 13.133 then F count is greater than F table so it can be concluded as follows:

1. There is a difference in memory between students who are taught using audio-visual media and conventional media.
2. There are differences in learning outcomes between students with high motivation and low motivation.
3. There is an interaction between learning using audio visual media and its effect on memory.

Based on the HSD value in the hypothesis test, an average comparison between the experimental class and the control class is made, namely $A-B = 25.455 - 22.182 = 3.273$, $B-A = 22.182 - 25.455 = -3.273$ compared to the HSD value of 0.7, it is concluded that the average comparison between classes using audio-visual media obtains significant results because it is greater than the HSD value and classes using conventional media get insignificant results because it is smaller than the HSD value. The significant difference in students' memory is influenced by the learning media used by the teacher. One of the adjustment factors related to teaching is the learning method by utilising the right learning media. The selection of appropriate learning methods and media can have a significant impact on the effectiveness of learning (Banani, 2017). Interactive, creative, and motivating learning methods and media can stimulate students to engage in the learning process directly (Purwanti et al., 2014; Masnawati et al., 2022;). Thus the use of learning media needs to be mastered by teachers, so that they can convey learning materials to students properly, and efficiently (Wulandari, et al., 2023: 3929).

The significant research results are inseparable from the teacher's strategy in using audio-visual media that can attract students' attention and generate learning motivation in students, so that learning becomes more meaningful. Appropriate use of learning media can attract attention, increase students' interest and motivation to learn, and make the learning process more interactive and not monotonous, so that students are not bored in the teaching and learning process (Wahyono, 2020., Audie, 2019). This is very helpful for students in remembering material through what they see and hear. The ability to remember or memory is an important component in the process (encoding), storing (storage) and reissuing information (retrieval) in memory (Anisah and Maulidah, 2022). This ability has been proven through different learning outcomes between the experimental and control classes in this study. Thus the use of audio-visual media in learning is feasible to use because it can improve student memory.

The Effect of Audio-Visual Learning Media on the Memory of Elementary School Students

CONCLUSION

The use of audiovisual learning media as one of the solutions to help facilitate teachers in delivering learning materials, as well as helping to make it easier for students to remember and understand the material studied, thus increasing their memory which has an impact on improving learning outcomes. In this study, it was found that there were differences in student learning outcomes in experimental classes with students in conventional classes. The difference is characterized by a significant increase in learning outcomes in the experimental class when compared to the conventional class. The difference in learning outcomes proves that the use of audiovisual learning media is more helpful for students in terms of memory on the material they are learning. These results support some previous research related to the use of audio-visual media in the learning process. Thus the use of audio-visual learning media is feasible to use to improve memory as measured in student learning outcomes. Future researchers are expected to examine the use of audiovisual learning media from different perspectives.

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