



The Impact of Song and Picture Media on the Memory Ability of Elementary School Students in Science Subjects

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ABSTRAK

Pembelajaran IPA banyak mengandung konsep-konsep materi yang harus dihapalkan dan dipahami oleh peserta. Hanya saja kenyataan dilapangan menunjukkan bahwa kemampuan daya ingat peserta didik masih tergolong rendah, sehingga peserta didik membutuhkan media yang dapat membantu meningkatkan daya ingatnya. Adapun tujuan dari penelitian ini yakni untuk menganalisis pengaruh media lagu dan gambar terhadap kemampuan daya ingat siswa sekolah dasar pada mata pelajaran IPA. Penelitian ini merupakan penelitian kuantitatif tipe eksperimen semu dengan desain pretes-postest, menggunakan teknik probability sampling sebagai teknik sampling. Populasi dalam penelitian ini yakni seluruh siswa sekolah dasar. Penarikan sampel dilakukan dengan menggunakan teknik teknik probability sampling dan metode random sampling, sehingga didapatkan sampel penelitian yakni siswa kelas V yang berjumlah 30 orang siswa. Pengumpulan data dalam penelitian dilakukan dengan menggunakan metode tes dan observasi. Instrument penelitian yang digunakan yakni berupa posttest dan pretest yang masing-masing terdiri dari 25 pertanyaan pilihan berganda. Selain itu guru diobservasi menggunakan lembar kegiatan guru yang merinci setiap gerakan guru, mulai dari persiapan alat dan bahan hingga penyampaian materi. Data hasil penelitian kemudian dianalisis dengan menggunakan uji Homogenitas Data, uji normalitas data, dan uji hipotesis dengan bantuan aplikasi SPSS (Statistical Product and Service Solution). Hasil analisis penelitian menunjukkan bahwa hasil pretest dan posttest yang mengalami perbedaan nilai rata-rata yaitu untuk nilai pretest adalah 52,53 dan posttest adalah 93,60 yang artinya terdapat pengaruh peningkatan kemampuan daya ingat pada siswa kelas V sekolah dasar setelah menggunakan media lagu dan gambar.

ABSTRACT

Science learning contains many material concepts that must be memorized and understood by participants. It's just that the reality on the ground shows that students' memory abilities are still relatively low, so students need media that can help improve their memory. The purpose of this research is to analyze the effect of song and picture media on the memory ability of elementary school students in science subjects. This research is a quantitative quasi-experimental research with a pretest-posttest design, using probability sampling technique as a sampling technique. The population in this study were all elementary school students. Sampling was carried out using probability sampling techniques and random sampling methods, so that the research sample obtained was 30 students of class V. Data collection in the study was carried out using the test and observation method. The research instrument used is in the form of posttest and pretest, each of which consists of 25 multiple choice questions. In addition, the teacher was observed using a teacher activity sheet that detailed every teacher's movement, from the preparation of tools and materials to the delivery of the material. The research data were then analyzed using the Data Homogeneity test, data normality test, and hypothesis testing with the help of the SPSS (Statistical Product and Service Solution) application. The results of the research analysis showed that the results of the pretest and posttest that experienced differences in the average value, namely the pretest score was 52.53 and the posttest was 93.60, which means that there is an effect of increasing memory ability in fifth grade elementary school students after using the media of songs and pictures.

1. INTRODUCTION

Science (IPA) is one of the subjects taught at the basic education level. Sciences (IPA) is a field of science related to procedures for knowing natural phenomena systematically, which makes Sciences not only about knowledge in the form of principles, concepts, and facts, but becomes discoveries in a process pengetahuan yang berupa prinsip, konsep, dan fakta, tetapi menjadi penemuan dalam suatu proses (Karina et al., 2017; Sayekti, 2016; Wijayama, 2020). Then, science becomes an interesting subject for students, because it relates to the natural surroundings and themselves. The natural surroundings and

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oneself are the main objects in science learning, therefore the learning process is emphasized on providing experiences to develop students' abilities to be able to explore and understand the natural environment scientifically (Dewantara, 2016; Hutaeruk & Simbolon, 2018). Based on this it can be said that the material presented in science is not just facts or knowledge concepts that are understood by students, but a process that is carried out and applied in life (Dwiqi et al., 2020; Kurniawan et al., 2018; Masturah et al., 2018). Science learning in elementary schools is carried out with the aim of cultivating students' thinking skills, working and being scientific as well as acquiring science knowledge, concepts and skills as the foundations for continuing education to a higher level (Ramlawati et al., 2017; Wijayama, 2020; Yunita & Wijayanti, 2017).

Science learning which contains material concepts about nature and oneself also needs to be memorized by students through a process of remembering. The high and low ability to remember students can be seen through the level of memory of students (Annisa et al., 2018; Rohayati, 2018). Memory is defined as a person's ability to receive, store, and process information that has been given (Hasanah et al., 2019; Novianti et al., 2022). The process of remembering is carried out through the stage of giving codes for recalling information when the information is needed (Rochanah, 2021; Yunaili & Riyanto, 2021). A person will be considered to have a good memory if he is able to re-express what he has learned and heard before both orally and in writing (Amiruddin, 2021; Apriliantika et al., 2019; Azhari et al., 2022). Basically everyone has a different level of memory, where this memory can be influenced by hereditary factors, habits, and age. In general, human memory will develop in line with the growth period and will be at the peak of development when an individual has reached adulthood and will slowly decrease with age (Agustin et al., 2021; Andayani et al., 2022; Astuti, 2018). In teaching and learning activities the learning method influences the achievement of students' understanding, and memory is the key to the construction of that understanding.

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Good memory is a student's need to be able to learn optimally because learning outcomes at school are measured based on how capable students are in mastering the material being taught which of course is related to remembering activities so that students who have good memory will be able to take part in learning optimally and get good results (Fitriani & Ifdil, 2018). It's just that the reality on the ground shows that students' memory abilities regarding subject matter are still relatively low. This is in line with the results of observations and interviews that were conducted in class V at SDN 1 Camden. The results of observations and interviews show that students' memory of science material is still relatively low, students tend to easily forget the material given by their teacher. The low memory of students is caused because it is difficult for students to focus on participating in learning activities, this is also accompanied by a lack of use of media that can stimulate students' memory. Problems regarding the low memory of students if left unchecked continuously will certainly have an impact on decreasing student learning outcomes. To be able to overcome these problems, media is needed that can improve students' memory as well as media songs and pictures.

Song is a fun media for conveying information or messages so that children can play while learning by using song (Bella et al., 2021; Hafiz et al., 2021).). Listening to music is a way to get rid of boredom, there is a relationship that music can affect one's learning mood, be it anger, sadness, joy, annoyance, boredom and so on (Desyandri & Putri, 2019; Gusti & Indra Martha Rusmana, 2020; Izzah et al., 2020). This proves that the media of songs can make learning in class more cheerful and fun. Therefore teachers who are good at singing can use singing as an alternative media for students being more enthusiastic about learning (Setia et al., 2018; Sutriyani & Widyatmoko, 2020). Apart from using song, we also can use picture as one of the the media used when learning because it can attract students' requests and attention, thus it can make students more serious when the teacher explains, and can

generate interest in ongoing learning (Sinaga & Simarmata, 2020; Sulfemi & Minati, 2018). By using picture it can help remember and interpret a reading (Siregar, 2017; Umbara et al., 2020; Widodo et al., 2020). Among many media in learning, picture is a media that is often used because students prefer to see pictures rather than writing, especially if the pictures are presented in good quality and clearly can make students more enthusiastic during learning. Based on some of the results of these studies, it can be said that the use of song and image media can significantly increase student concentration and learning outcomes. It's just that in previous research there has been no study that discusses the effect of song and picture media to improve students' memory. So this study focused on this study with the aim of analyzing the effect of song and picture media on the memory abilities of elementary school students in science subjects.

In order to have a good memory for children when learning takes place, media is needed which are authentic and interesting (Novianti et al., 2022). The use of song and picture media in learning is expected to help overcome the problems of students who are difficult to remember lessons. Not being able to remember something or forgetting often happens to someone who is old. When forgetting happens to someone who is young, especially who is still in elementary school, this cannot be taken lightly. Several previous studies have revealed that image media can be used to increase learning concentration for students (Khotimah et al., 2020). The results of previous studies revealed that the use of children's song media can improve student learning outcomes in the science subject for elementary school students (Prananda et al., 2020). The results of subsequent research also revealed a similar thing, that there was an influence of song on mathematics learning outcomes in the properties of flat shapes for grade 5 in elementary school (Sandri, 2018). Based on some of the results of these studies, it can be said that the use of song and picture can significantly increase student concentration and learning outcomes. It's just that in previous research there has been no study that discusses the effect of song and picture media to improve students' memory. Hence, the purpose of this study is analyzing the effect of song and picture media on the memory ability of elementary school students in Science subjects.

2. METHOD

This research used a quantitative research, quasi-experimental type, and used randomized control group pretest-posttest design, by all means that this design consisted of a control group and an experimental group, where the first experimental group carried out a pretest (measurements before being given treatment), then continued with posttest (measurement after treatment) to see the difference between after and before treatment. For the control group, the participants did the pretest first, but there was no treatment which was then followed by the posttest. An illustration of the randomized control group pretest-posttest design can be seen in [Table 1](#).

Table 1. Illustration Design of Non Equivalent Control Group

Experiment Class	Pretest	Treatment(X)	Posttest
Control Class	Pretest	Without treatment	Posttest

This research was conducted at SDN 1 Candan, Sambu District, Boyolali Regency. The population of this study was all students of SDN 1 Candan. Sampling in the study was carried out using probability sampling techniques and random sampling methods, the research sample was 30 students fifth grade students. Data collection in the study was carried out using test and observation methods. The research instrument used was in the form of posttest and pretest, each test consist of 25 multiple choice questions. In addition, the teacher was observed using a teacher activity sheet which detailed every teacher's movement, starting from the preparation of tools and materials to the delivered. Furthermore, student activity sheets consist of how students spend time during learning. The test used as a research instrument was previously tested by 30 students at SDN 5 Raja, Arut Selatan District, Kotawaringin Barat Regency, in order to test the validity and reliability of the pretest and posttest questions. The research data were then analyzed using the Data Homogeneity test, data normality test, and hypothesis testing with the help of the SPSS (Statistical Product and Service Solution) application. The hypothesis in this study is hypothesis Ho: There is no effect of the use of song and picture media on the memory abilities of elementary students in science subjects at SDN 1 Candan and hypothesis Ha: There is an effect of using song and picture media on the memory abilities of elementary students in the science lessons at SDN 1 Candan.

3. RESULT AND DISCUSSION

Result

Research on the effect of using song and picture media to improve students' memory was carried out through pretest and posttest, for the control class without treatment using song and picture media and for the experimental class with treatment using song and picture media in learning. As many as 30 students of SDN 1 Camden did the pretest and posttest at the beginning and end of the lesson. The data on student pretest and posttest results can be seen [Tabel 2](#).

Table 2. The Result of Pretest and Posttest in Experimental Class and Control Class

EXPERIMENTAL CLASS				CONTROL CLASS			
No	Name	Pretest Score	Posttest Score	No	Name	Pretest Score	Posttest Score
1	Agung Dwi	52	92	1	Hamidah	32	56
2	Nuru Aini	42	84	2	Khansaa Miftah	44	64
3	Umi Maisyaroh	60	100	3	Ananda Satria	52	72
4	Zafifi	54	92	4	Azzam	44	84
5	Cintya Febriari	36	96	5	Azzahra Uswatun	52	64
6	Fika Nur Alita	56	100	6	Ammar Mubas	48	76
7	Riska Erika	72	100	7	Yumiva Salsabila	60	88
8	Arfian Sekar	36	88	8	Selvia Aulia	68	100
9	Muhammad Azril	42	88	9	Ilyas Abdulloh	40	60
10	Nizam	54	84	10	Aqila Najma	52	80
11	Damar	48	92	11	Zulfan Danifadan	68	76
12	Topa	48	92	12	Zilfa Nur	44	76
13	Lenti	68	100	13	Wenti Tri	72	100
14	Siti Nur Diannti	52	96	14	Sarah	60	92
15	Muhammad Rizky	68	100	15	Dimas Adi	48	72

Experimental Class

By using SPSS, the average (mean) value of the pretest for experimental group is 52,53 with standard deviation is 11,147 and posttest value is 93,60 with standard derivation is 5,816. Then, the earned value of $\text{PretestM} + \text{SD} = 52,53 + 11,147 = 63,67$ (Top/High), $\text{M} - \text{SD} = 52,53 - 11,147 = 41,383$ (middle/medium), 41,383 and below (bottom /low)). Then, the value of $\text{posttest M} + \text{SD} = 93,60 + 5,816 = 99,416$ (Top/High), $\text{M} - \text{SD} = 93,60 - 5,816 = 87,784$ (middle/medium), 87,784 and below (bottom/low). The analysis data is presented in the frequency table of pretest and posttest results as shown [Tabel 3](#).

Table 3. Frequency of Experimental Class Pretest and Posttest Results

Test	Interval Value	Category	Frequency	Percentage (%)
Pretest	$X \geq 63,67$	Top/High	4	26,66%
	$41,383 \leq X < 63,67$	Middle/Medium	9	60%
	$X < 41,383$	Bottom/Low	2	13,33%
	Total		15	100%
Posttest	$X \geq 99,416$	Top/High	5	33%
	$87,784 \leq X < 99,416$	Middle/Medium	8	53,33%
	$X < 87,784$	Bottom/Low	2	13,33%
	Total		15	100%

Based on the statistics presented, it can be determined that the pretest value of the experimental class places four students in the high category (26.66%), nine students in the medium category (60%), and two students in the low category (26.66%). In addition, there were 5 students in the high category (33%), 8 students in the medium category (53.33%), and 2 students in the low category (13.33%) based on the posttest results from the experimental class.

Control Class

By using SPSS, the average (mean) value of the pretest for the experimental group is 52.27 with a standard deviation of 11.361 then for the posttest value is 77.33 with a standard deviation of 13.579. Furthermore, the Pretest value is obtained with $M + SD = 52.27 + 11.361 = 63.631$ (Top/High), $M - SD = 52.27 - 11.361 = 40.90$ (Middle/Medium), 40.90 and below (Bottom /Low) . As well as posttest value data with $M + SD = 77.33 + 13.579 = 90.909$ (Top/High), $M - SD = 77.33 - 13.579 = 63.751$ (Middle/Medium), and 63.751 and below (Bottom/Low). The analysis data is then presented in the frequency table of pretest and posttest results as shown in [Tabel 4](#).

Tabel 4. Frequency of Control Class Pretest Results

Test	Interval Value	Category	Frequency	Percentage (%)
Pretest	$X \geq 63,631$	Atas/Tinggi	3	20%
	$40,90 \leq X < 63,631$	Tengah/Sedang	10	66,66%
	$X < 40,90$	Bawah/Rendah	2	13,33%
	Total		15	100%
Posttest	$X \geq 90,909$	Atas/Tinggi	3	20%
	$63,751 \leq X < 90,909$	Tengah/Sedang	10	66,66%
	$X < 63,751$	Bawah/Rendah	2	13,33%
	Total		15	100%

Based on the statistics presented, it can be determined that the pretest and posttest scores of the control class place three students in the high category (20%), ten students in the medium category (66.66%), and two students in the low category (13.33%).

Test of Homogeneity and Normality Pretest

The normality test was carried out to find out whether the data used were normally distributed or not so as to determine whether the research could be continued or not. If the data is not normally distributed then a non-parametric test is performed. The data in this normality test uses the results from the pretest-posttest. The normality test was carried out on the pretest-posttest with or without song and picture media. If the calculated significance level has a value greater than $\alpha = 0.05$ using SPSS, it can be said that the data is normally distributed. The findings of the normality test performed on each research variable are presented in [Tabel 5](#).

Table 5. Summary of Normality Test

Variable	Sig.	Description
Pretest (Experimental Group)	0,200	Normal
Pretest (Control Group)	0,200	Normal
Posttest (Experimental Group)	0,118	Normal
Posttest (Control Group)	0,200	Normal

Each pretest-posttest value in the experimental and control groups has a significance value greater than 0.05 at ($p > 0.05$), indicating that the variables in both groups are normally distributed. Then to find out if the sample used comes from the same variance and if there is no significant difference from one another determined by the homogeneity of variance test. To compare the largest variance with the lowest variance, the F Levene statistic test was carried out. The variance is said to be homogeneous if the F-count value $<$ F-table value at the significance level $\alpha = 0.05$. By using SPSS, the results of the data variant homogeneity test were obtained, which can be seen in [Tabel 6](#)

Table 6. Summary of Variance Homogeneity Test Results

Group	Sig.	Description
Pretest Score	0,89	(Homogen)
Posttest Score	0,13	(Homogen)

According to the statistics presented above, the level of significance for the pretest-posttest data is greater than 0.05 ($p > 0.05$), so it fulfills the requirements for the t-test because the pretest-posttest data are comparable. The next stage after the necessary tests are carried out is to use a t-test to find out whether the use of song and picture media affects the ability to remember science material in fifth-grade elementary school children. The data from the t-test analysis results can be seen in [Tabel 7](#).

Table 7. Summary of T-test Results

	Paired Differences					t	df	Significance	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				One-Sided p	Two-Sided p
				Lower	Upper				
Experimental Class Pretest-Posttest Value	-41,067	8,481	2,190	-45,763	-36,370	-18,754	14	0,000	0,000

Because the calculated value of the pretest-posttest in the experimental group is lower than the significance level of 5% ($0.000 < 0.05$), so the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted, meaning that there is an influence of song media and picture media on students' ability memory of elementary school students in science subjects at SDN 1 Camden. Furthermore, the average value is used to observe the increase in students' memory skills through the media of songs and pictures. Students who were taught using songs and pictures got an average of 93.60 while students who were taught without using songs and pictures got 77.33. The average value of learning with song and picture media is higher than learning without song and picture media ($93.60 > 77.33$). The average value using song and picture media at the pretest was 52.53 and at the posttest, it was 93.60. While the average value without using song and picture media in the pretest was 52.26 and in the posttest, it was 77.33. Therefore, when compared to learning with song and picture media, affects students' memory ability more compared to those without using song and picture media.

Discussion

Based on the results of data analysis obtained three main findings in this study. The first finding shows that the experimental group with learning using song and picture media and the control group without using song and picture media obtained an average posttest result of 93.60 and 77.33, respectively, which, if you look at the experimental group, is superior to the control group. These results then show that the use of song and image media can make students feel interested when learning takes place and it is easier to recall the material presented (Magdalena et al., 2021; Usmadi, 2020). In addition, the use of song and picture media can increase the average student score and have a positive effect on students' abilities because media images can affect students' memory improvement, and are able to create a fun learning atmosphere, encourage learning motivation, attract and make students interested in learning, and as a tool to make it easier to remember material (Anisah & Maulidah, 2022; Wiwik Murdiati, 2020).

The second finding shows that the significance obtained from the SPSS calculation on the posttest results of the experimental and control groups shows a smaller value compared to the significance level value ($0.000 < 0.05$) meaning that the alternative hypothesis (H_a) is accepted, namely that there is an influence of song media and pictures on power ability. students' memory of maple science at SDN 1 Camden, while hypothesis no (H_0) is not accepted. These results then show that song and picture media are very suitable to be used to improve students' memory. This is because songs and pictures have fun characteristics and easily stick in students' memories (Desyandri & Putri, 2019; Gusti & Indra Martha Rusmana, 2020; Izzah et al., 2020). Listening to music is a way to get rid of boredom, there is a connection that music can affect one's learning mood, be it anger, sadness, joy, annoyance, boredom, and so on (Bella et al., 2021; Hafiz et al., 2021; Izzah et al., 2020). Furthermore, the use of picture in the learning process will be able to help concretize the teaching material provided by the teacher. Media that has these characteristics will certainly greatly assist the science learning process which tends to contain a lot of material and concepts (Sinaga & Simarmata, 2020; Sulfemi & Minati, 2018).

The results obtained in this study are in line with the results of previous research which also revealed that media images can be used to increase learning concentration in children (Khotimah et al., 2020). The results of other studies revealed that the use of children's song media can improve student learning outcomes in the science subject for elementary school students (Prananda et al., 2020). The results of subsequent research also revealed a similar thing, namely that there was an influence of song media on mathematics learning outcomes in the properties of flat shapes for grade 5 elementary school (Sandri, 2018). Therefore, based on the research results which are then supported by the results of previous research, it can be said that the use of song and image media can significantly increase students' concentration and learning outcomes.

4. CONCLUSION

Based on the results of the research analysis and discussion, it can be interpreted that there is an influence of song and picture media on the memory abilities of elementary school students in science subjects as seen from the mean scores of the post-test results for the experimental and control groups, respectively, 93.60 and 77.33.

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