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The Influence of the Problem-Based Learning Model Based on Song Media on Student Learning Outcomes in Science Learning in Class V Elementary Schools

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ABSTRACT

Students who experience learning difficulties in natural science (science) lessons obtain unsatisfactory learning results and grades that do not fulfil the KKM. Quantitative research method is a research method based on positive philosophy which is used to examine research instruments and quantitative/statistical data analysis, with the aim of testing predetermined hypotheses. In this research, researchers used experimental methods. The student's natural science (science) learning outcomes before being given treatment obtained an average score of 60.46. The normality test result is 0.150, so it can be concluded that the pre-test learning results are normally distributed. The student's natural science (science) learning outcomes after being given treatment obtained an average score of 82.46. The normality test result is 0.094, so it can be concluded that the post-test learning results are normally distributed. This can be proven with a correlation coefficient value of 0.960 which is a very strong interpenetration. The results of the T-test calculation to find out whether the hypothesis is accepted or rejected, the t_{count} 16,830 is greater than t_{table} 1,706, which means that there is an influence of Problem-Based Learning Based on Song Media on student learning outcomes. Thus, Ha is accepted and Ho is rejected.

Keywords*: *student learning outcomes, problem-based learning, song media

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INTRODUCTION

Education is very important for the government in Indonesia to pay attention to. Education in Indonesia shows the quality of human resources available in various schools. Education at school can build character, have the ability to think, have a good personality so that you are able to change the condition of a nation for the better. To realize the function of education in order to achieve the aspired national education goals, it is necessary to involve various elements and components of the nation and one of them is in the field of education, namely teaching staff (teachers). In the educational process, the potential and abilities possessed by students are honed so well that this potential is not hidden but appears on the surface and ultimately becomes reliable and professional human resources. According to Ki Hajar Dewantara, (Firmansyah, 2015: 224) the father of Indonesian national education, education is a cultural effort that aims to provide guidance in life for the growth of the body and soul of children so that within their personal nature and the influence of their environment, they can achieve physical and spiritual progress in a good direction.

Teachers in the world of education are very important in carrying out their duties and functions because the teacher's profession is as an educator, trainer and instructor. Meanwhile, in humanity, teachers make themselves parents at school. To provide motivation and direction to students so that students become more active in learning and in the social sector, teachers place themselves in a place of honor in their environment. Teachers must carry out their duties and functions professionally as educators, teachers and

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trainers, so teachers apply appropriate learning strategies, according to the characteristics of students and the characteristics of natural science subjects.

Student learning outcomes are greatly influenced by the teaching and learning process in which there are factors that determine whether the learning process is smooth or not. Natural science is one of the sciences that is very important in everyday life. All activities in human life cannot be separated from natural science, so natural science is taught since elementary education. Natural science lessons are very important for us to know.

In observations carried out by researchers, some of the students in class VB of SD Negeri 034781 Batang Beruh Sidikalang for science lessons still have no place in the hearts of the students. This is proven by the students' learning outcomes which are still low each semester, especially in learning theme 6 "Heat and its Transfer" . In this situation, students think that science is a lesson that is difficult to understand, so that quite a few students are afraid of learning science and the lack of student enthusiasm results in low students' science learning outcomes. Apart from that, the learning process still uses a teacher-centered learning system using learning models that are not yet varied, the lecture methods and approaches used are still textual. All of this must change and be followed by teachers who are responsible for organizing learning at school. One of these changes is that the learning orientation is teacher-centered and student-centered. All these changes are intended to improve the quality of education, both in terms of process and education.

One of the interesting things that accompanies the change in learning which is all teacher-centred and learner-centred is the discovery and application of innovative, creative and constructive learning models or more precisely in developing and exploring students concretely and independently in the academic and social fields. So it is very important for educators, especially teachers, to understand the material, students and learning methodology in the learning process, especially regarding the selection of modern learning models. Based on observations carried out by researchers with the homeroom teacher as the class teacher, data was obtained on students' grades learning natural sciences in class VB at SD Negeri 034781 Batang Beruh, Dairi Regency, North Sumatra for the 2022/2023 academic year as in table 1.

Table 1. Results of Students' Daily Test Scores in Science Subjects Class VB SDN 034781 Batang Beruh Dairi Regency Academic Year 2022/2023

Number	Mark	Criteria	Amount	Percentage
1.	>70	Complete	7	28%
2	<70	Not Completed	18	72%
Jumlah			**25**	**100%**

(Source: VB Class Teacher Mrs. Vasda W. Boang Manalu, S.Pd.)

Based on the results of observations carried out at SD Negeri 034781 Batang Beruh in class VB which were obtained by researchers based on student grades in science subjects in class VB in the 2022/2023 learning year, with class VB teachers. Seeing that the students' learning outcomes scores still have not reached the Minimum Completion Criteria (KKM), namely 70. Observation results show that 72% or as many as 18 students with scores of 50-69 obtained have not yet completed the KKM, and 28% or as many as 7 students with a score of 70-80 has reached the KKM. This is proven in natural science subjects, students are still less than satisfied with getting grades below the average. The reason the researcher chose the VB class at SDN 034781 Batang Beruh Sidikalang as the research subject was that student motivation and student learning outcomes were not satisfactory, so it was necessary to use good learning models and media and needed special attention.

The factors causing the low learning outcomes of students in science subjects are the lack of interest and motivation for students to learn which is caused by inappropriate learning methods, lack of use of technology in learning, lack of student interaction with learning materials, lack of development of appropriate learning media. student characteristics, as well as the difficulty of the learning material presented.

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Researchers are interested in implementing this song media-based problem based learning model. Researchers hope that students' interest and motivation to learn will increase, students will better understand the material presented, so that science learning in elementary school can be more effective and enjoyable and students will get good learning results. Good. According to Pertiwi, et al (2023:597), problem based learning (PBL) is a learning approach where students are faced with authentic (real) problems so that they are expected to be able to construct their own knowledge, develop high-level skills and inquiry, make students independent, and increase his self-confidence.

According to Husnul, et al (2020:6) the problem based learning model has several advantages including: 1) students are involved in learning activities so that their knowledge is really well absorbed, 2) students are trained to be able to work together with other students, 3) students can obtain problem solving from various sources, 4) Students are encouraged to have the ability to solve problems in real situations, 5) Students have the ability to build their own knowledge through learning activities, 6) Learning focuses on problems so that unrelated material does not need to be studied at that time by students, this reduces the burden on students to memorize or retain information.

Apart from the problem based learning model, adding learning media is a different way to achieve different learning outcomes under different conditions. This means that the choice of learning media must be adjusted to the learning conditions and learning outcomes to be achieved. Learning media is an orderly and systematic way of working to achieve predetermined learning goals. The way learning media works should present a way that is easy to understand, not complicated, easy and long to remember, and provide an encouraging atmosphere for students.

According to Pertiwi, et al (2023:599) song media is an appropriate tool that can be used to arouse students' ideas and interest in thematic learning. Through songs, students will be carried away by their mood in the sound of the words, so it is hoped that students will be able to understand the learning according to the theme of the song that has been determined. Songs as a learning medium have a great influence on students' creative abilities. The use of songs in science learning shows that in learning, teachers use songs that are adapted to the teaching material presented in science learning. Songs as a learning medium have a great influence on students' creative abilities. Teachers can use songs to set the mood, change students' mental states, and support students' learning environment. Not only that, songs (singing) are believed to be able to stimulate imagination and bring out hidden things that are stored within a person so that he or she will remember something. Because essentially everyone, from an early age to an adult, likes to sing. The aim of this research is to improve student learning outcomes on the 6 hot themes and their transfer using song media.

LITERATURE REVIEW

Model Problem Based Learning

Problem based learning (PBL) uses various kinds of intelligence needed to confront real world challenges, the ability to face everything new and existing complexities. The problem based learning model has the characteristics of starting from giving a problem, the problem presented has a real world context, learning in groups, actively formulating the problem, and identifying knowledge gaps, searching for material related to the problem yourself and reporting on the solution to the problem.

According to Husamah, et al (2020:303) problem based learning (PBL) teaches with a focus on solving real problems, a process where students carry out group work, feedback, discussions which can function as a stepping stone for investigations and investigations and final reports. In this way, students are encouraged to be more actively involved in learning material and develop critical thinking skills, a learning approach that presents contextual problems so as to stimulate students to learn. In classes that apply problem-based learning, students work in teams to solve real world problems.

According to Ndraha, et al (2023:7766) stated that the definition of the problem based learning model is a learning model that begins with problems found in a work environment to collect and integrate new knowledge developed by students independently. This model also focuses on student activity in solving

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problems. Students are not only given learning material in one direction as in the application of conventional learning methods. With the problem-based learning model, the learning process is expected to take place naturally in the form of student activities to strengthen problem-solving abilities and increase student independence, so that students are able to formulate, solve and interpret mathematics in various contexts. According to Febrita, et al (2020), the problem based learning model is the use of various types of intelligence needed to confront real world challenges, the ability to face everything new and existing complexities." Based on the opinion above, it can be concluded that problem based learning is a learning model that focuses on problems that exist in the real world as something that must be solved by students in the learning process by building critical thinking abilities and problem solving skills, as well as connecting existing knowledge and concepts from the ongoing lesson material.

According to Husnul (2020:6) problem based learning (PBL) is a learning approach where students are faced with authentic (real) problems so that they are expected to be able to construct their own knowledge, develop high-level skills and inquiry, make students independent, and increase their self-confidence. From several expert opinions, it can be concluded that problem based learning is a learning model that exposes students to real world problems to start learning and is an innovative learning model that can provide active learning conditions for students. Problem based learning aims to develop the curriculum and learning process. In the curriculum, problems are designed that require students to gain important knowledge, make them proficient in solving problems, and have their own learning strategies and the ability to participate in teams.

Steps to the Problem Based Learning Model

Problem based learning is the use of real problems as a means for students to develop knowledge. Problem-based learning is learning that is obtained through a process towards understanding the resolution of a problem. This learning model is focused on the problems presented by the teacher and students solve these problems with all their knowledge and skills from various sources that can be obtained. According to Febrita, et al (2020:1624) the steps for problem based learning are: Orient students to the problem, Organizing students to learn, Guiding individual and group investigations, Develop and present the results of the work, Analyze and evaluate the problem solving process.

Problem-based learning is learning that is obtained through a process towards understanding the resolution of a problem. This problem is encountered first in the learning process. According to Husnul, et al (2020:6) the steps for problem based learning are: Students are given a problem by the teacher (or the problem is revealed from the student's experience, Students conduct discussions in small groups, Students carry out independent studies regarding the problem that must be resolved. They can do this by looking for sources in the surrounding environment, Students return to their original problem based learning group to exchange information, learn from peers, and work together to solve problems., Students present the solutions they found, Students are assisted by the teacher in carrying out evaluations related to all learning activities. This includes the extent of knowledge that students have acquired as well as the role of each student in the group.

According to Rahmadani (2022:4), there are 5 stages that must be implemented in problem based learning, namely: Provide orientation about the problem to students, Organize students to research, Assist with independent and group investigations, Develop and present results, Analyze and evaluate the problem solving process. Based on the three expert opinions above, the researcher chose the steps according to Febrita, et al (2020:1624) problem based learning steps, namely: Orient students to the problem, Organizing students to learn, Guiding individual and group investigations, Develop and present the results of the work, Analyze and evaluate the problem solving process.

Strengths and Weaknesses of the Problem Based Learning Model
Advantages of the Problem Based Learning Model

According to Husnul, et al (2020:10) the problem based learning model has several advantages including: Students are involved in learning activities so that their knowledge is truly absorbed well, Students

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are trained to be able to work together with other students, Students can obtain problem solutions from various sources, Students are encouraged to have the ability to solve problems in real situations, Students have the ability to build their own knowledge through learning activities, Learning focuses on problems so that unrelated material does not need to be studied by students, this reduces the burden on students to memorize or retain information.

According to Septiana, et al (2018: 100) the problem based learning model has several advantages including: Students better understand the concepts being taught, because they themselves discovered the concepts, Involves actively solving problems and demands students' higher thinking skills, Knowledge is embedded based on students' schemata so that learning is more meaningful, Students can feel the benefits of learning because the problems they solve are directly linked to real life, this can increase students' motivation and interest in the material being studied, Make students more independent and mature, able to give aspirations and accept other people's opinions, instilling positive social attitudes among students, Conditioning students in group learning to interact with each other and their friends, so that students can achieve complete learning.

According to Saputra, et al (2020:97) as a problem based learning model it has several advantages, including: Challenges students' abilities and provides satisfaction in discovering new knowledge for students, Increase student motivation and learning activities, Help students transfer student knowledge to understand real world problems, Help students to develop new knowledge and be responsible for their learning. Besides that, problem based learning can encourage students to carry out their own evaluation of both the results and the learning process, Develop students' ability to think critically and develop their ability to adapt to new knowledge, Provide opportunities for students to apply the knowledge they have in the real world, Develop students' interest in continuing to learn even though formal education has ended, Make it easier for students to master the concepts studied in order to solve world problems

From the opinions of the experts above, it can be concluded that by using the learning model, especially using the PBL model, there are benefits or advantages. So, with this problem based learning model students can develop their critical thinking skills through activities in learning activities, by solving problems based on the knowledge they have or by the new knowledge he needs. Because learning will be more meaningful if students are faced with problems and solve their own problems.

Weaknesses of the Problem Based Learning Model

According to Rahmadani (2022:4), the weaknesses of the problem based learning model include: When students have an interest or belief that the problem being studied is difficult to solve, they will feel reluctant to try, The success of learning strategies through problem based learning requires sufficient time for preparation, Without understanding why they are trying to solve the problem being studied, they will not learn what they want to learn. Husnul, et al (2020:11) problem based learning has disadvantages, including: Not all subjects can use problem based learning, because there are several parts where the teacher must play an active role in delivering the material. There will be difficulties in distributing assignments in classes that have a diversity of students.

Priyanti, et al (2023:97), problem based learning also has weaknesses, including: When students have no interest or do not believe that the problem being studied is difficult to solve, then they will feel reluctant to try, For some students, they think that without understanding the material needed to solve the problem, why should they try to solve the problem being studied, then they will learn what they want to learn. From the opinions of the experts above, it can be concluded that using a learning model, especially using a problem based learning model, also has shortcomings, namely that when students do not have interest or do not believe that the problem being studied is difficult to solve, then they will feel reluctant to try, and the learning model problem-based requires a lot of equipment and is quite complicated.

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Instructional Media

Initially, media only functioned as a tool in teaching and learning activities, namely in the form of a means that could provide visual experiences in order to encourage learning motivation, clarify and simplify complex and abstract concepts to become simpler, more concrete and easier to understand. By using media such as pictures, songs, diagrams, graphs, or videos, complex concepts can be explained better, making it easier for students to understand them. Megarani, et al (2023:182) that learning media can be used as an intermediary between teachers and students in understanding learning material so that it is effective and efficient. Based on the opinions presented, it shows that media is a means of conveying information in the learning process. According to Pertiwi, et al (2023:599) learning media is anything that can convey or channel messages from a learning source in a planned manner, resulting in a supportive learning environment where the recipient can carry out the learning process efficiently and effectively. According to Nurritateni (2018:174) explains that learning media are tools that can help the teaching and learning process so that the meaning of the message conveyed becomes clearer and educational or learning goals can be achieved effectively and efficiently.

Based on this expert opinion, it can be concluded that learning media is a tool for conveying messages from the source to the recipient. In this case, it is the process of stimulating students' thoughts, feelings, attention, interests and attention so that the learning process can be established. Based on this statement, it can be concluded that learning media are tools used by teachers as teaching aids. In learning interactions, teachers convey teaching messages in the form of learning materials to students.

The Nature of Song Media

Songs as a learning medium have a great influence on students' creative abilities. Through songs, students can learn to hear and pronounce the target language by referring to the pronunciation of native speakers, increase their vocabulary, while enjoying the music. Songs also create a positive and enjoyable classroom atmosphere so that they can stimulate students to learn and enjoy the learning process.

According to Apriyanti (2020:82) songs are a type of literary work in oral form. Songs consist of a series of words called lyrics. Songs (singing) are the result of works of art relating sound art and language art, as works of sound art involve the melody and color of the singer's voice. Songs (singing) are the result of works of art relating sound art and language art as works of sound art involving the melody and color of the singer's voice. According to Niawati (2021:6-7) the meaning of songs is a rhythmic variety of speaking, singing, reading and so on. Meanwhile, song lyrics are an arrangement of a series of words that sound, song lyrics are not as easy as composing a composition, but can be obtained from various inspirations. According to Pertiwi, et al (2023:599) teachers can use songs to set the mood, change students' mental states, and support students' learning environment. Songs also help students work better and remember more. Through songs and varied learning activities, educators can foster children's interest in learning more happily and actively, and can even make it easier for children to understand the teaching material presented. Children are made happy, not bored, and interested in participating in the learning process.

Thus, singing is an activity that children really like. In general, singing for children functions more as a play activity than as a learning activity or conveying messages. Singing can provide satisfaction, joy and happiness for children so that it can encourage children to study harder. By singing, a child will more quickly learn, master and practice the teaching material presented by the educator. Apart from that, children's abilities in listening, singing and creativity can be trained through this activity.

From the opinions of the experts above, it can be concluded that songs are literary works that have a variety of sounds and rhythms, consisting of a series of words called lyrics. Songs are the result of a relationship between sound art and language art that involves melody and the singer's voice. Songs can be used in four aspects of learning activities, namely listening, reading, speaking and writing in order to create a positive and enjoyable classroom atmosphere so that it can stimulate students to learn and enjoy the learning process.

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Benefits of Song Learning Media

It is hoped that the use of song media can be an alternative learning media that prioritizes creativity, time management, and student self-evaluation. In the opinion of Ilmi, et al (2021:675) the benefits of song media in learning are improving students' memory, creating a feeling of calm and joy when studying, anxiety and discomfort in learning will disappear, making it easier for students to understand the learning material. Through song media as a learning medium in elementary schools (SD) which is given by educators when teaching. The material provided through song media can help students work on questions and understand the material being studied, thereby improving student learning outcomes. The following are the benefits of song media in the opinion of Eris, et al (2018: 143) as a means of relaxation by neutralizing heart rate and brain waves, fostering interest and strengthening the attraction of learning, creating a more humane and enjoyable learning process, as a donkey bridge in remembering learning material, building retention and touching students' emotions and aesthetic sense, the process of internalizing the values contained in learning materials, encouraging students' learning motivation.

Then according to Arofaturrohman, et al (2023:19) the benefits of songs as a learning medium are that they can overcome limitations of space, time, energy and sensory power, create enthusiasm for learning, more direct interaction between students and learning resources, as a means of relaxation by neutralizing heart rate and brain waves, foster interest and strengthen memory, the process of internalizing the values contained in learning material. Based on the opinions of the experts above, it can be concluded that from the several benefits described above, there are still many other benefits related to songs as a learning medium. It is hoped that efforts to benefit song media can become an alternative learning media, which prioritizes creativity in time management, as well as independent evaluation of students. By using songs as a learning medium. In song media, teachers can make more precise assessments or evaluations. The use of songs as an effective learning evaluation medium can be achieved if the teacher pays attention to the needs, shortcomings and differences of students. Song media helps the continuity of the learning evaluation or assessment process.

Advantages and Disadvantages of Song Media

Song media as a learning medium is considered fun because it uses creative elements such as singing with friends and teachers in the teaching and learning process, this makes students interested and enthusiastic. This song media certainly has several advantages which can certainly support the success of the learning process. The advantages and disadvantages of song media according to Arofaturrohman, et al (2023:20) are that the advantages of song media in the learning process are that it attracts students' interest and learning motivation, is easy to remember and improves students' memory, improves language pronunciation and intonation, entertains and commemorates, improves skills. cognitive, providing a pleasant classroom atmosphere.

According to Arofaturrohman, et al (2023:20), the weaknesses of song media include limited subject matter that can be learned through songs, limited target language, requiring students' tastes and interests to match the music genre used, difficulties in assessing students' understanding. In conclusion, song media has several advantages in the learning process, such as increasing interest and motivation to learn, easy to remember, entertainment, and improving students' language skills, as well as providing a pleasant classroom atmosphere. However, song media also has disadvantages, such as limited subject matter that can be studied, limited target language, and difficulties in assessing students' understanding. Therefore, the use of song media must be part of a diverse learning approach and not be the only method used in class, but can be combined with various aids or other learning methods.

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METHOD

Research design

Design is a structure and plan that is prepared in such a way as to get answers to problems in research. According to Sugiyono (2018), research design is a scientific way to produce data with specific purposes and uses. The research design used in this research contains two variables, namely the independent variable and the dependent variable. Plans or designs are structures and plans that are arranged in such a way as to obtain answers to research problems. This design can be described as follows: The design used by researchers in this research is the One group pre test – post test design research design.

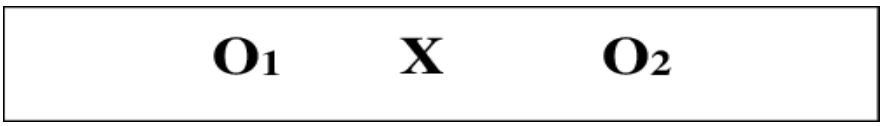

Figure 1. Research Design Plan

Description:
O1 = Pre-test before treatment
X = Treatment
O2 = Post-test after treatment

Data analysis technique

Data analysis is obtained after data from all respondents or other data sources are collected. The data analysis technique in quantitative research is by using statistics. Sugiyono (2016) believes that activities in data analysis are grouping data based on variables from all respondents, presenting data for each variable studied, carrying out calculations to answer the problem formulation, and carrying out calculations to test the hypotheses that have been proposed.

Correlation Test

To determine whether or not there is an influence between the independent variable and the dependent variable. With the Product moment correlation formula, namely:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Information :
r_xy = product moment correlation coefficient
N = total number of students
∑ X= Item score
∑ Y = Total score of all students
∑ XY = The number of products between the score "X" and the score "Y"

It can be concluded that if r_(count)≥r_(table) then there is an influence between the independent variable and the dependent variable. On the other hand, if r_(count)≤ r_(table) then there is no influence between the independent variable and the dependent variable.

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Hypothesis testing

To find out whether X has a significant influence on variable Y, test the hypothesis using the t-test as follows:

$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$

Information:

r = Correlation Coefficient

n = sample

To find out whether the hypothesis is accepted (Ha) then tcount ≥ ttable and vice versa tcount ≤ ttable then the hypothesis is rejected (Ho). The hypothesis is accepted if tcount ≥ ttable, conversely if tcount ≤ ttable then the hypothesis is rejected with an error rate of 5%.

RESULTS AND DISCUSSION

Class V Pretest Results

In the VA control class with 28 students, the researcher first distributed questions or pretests before starting learning, the aim was to determine the students' abilities before taking action. The results that have been carried out show that the learning outcomes of students are said to be insufficient. This can be seen from the students' pretest scores in table 2 below:

Table 2. Frequency Distribution of Pretest Data

X	F	FX	$x-\bar{x}$	$(x-\bar{x})^2$	$F(x-\bar{x})^2$
40	2	80	19,52	381,03	762,06
43	1	43	-17,48	305,55	305,55
46	3	138	-14,48	209,67	629,01
50	1	50	-10,48	109,83	109,83
53	2	106	-7,48	55,95	111,9
56	3	168	-4,48	20,07	60,21
60	3	180	-0,48	0,23	0,69
63	4	252	2,52	6,35	25,4
66	1	66	5,52	30,47	30,47
70	1	70	9,52	90,63	90,63
73	2	146	12,52	156,75	313,5
76	3	228	15,52	240,87	722,61
83	2	166	22,52	507,15	1.014,3
Jumlah	**∑F=28**	**∑FX= 1693**	**∑ $x-\bar{x}$ =32,76**	**∑ $(x-\bar{x})^2$= 2.114,56**	**∑ $F(x-\bar{x})^2$= 4.176,16**

Based on the results of calculations obtained from the pretest in the control class, it can be concluded that the average pretest score is 60.48, while the standard deviation results are 12.21 and the standard error is 2.05.

Table 3. Distribution of Pretest Score Presentation

Mark	Frequency	Percentage	Information
40-50	7	25%	Not enough
51-60	8	28%	Enough
61-70	6	21%	Good
71-80	5	17%	Good
81-90	2	9%	Very good
Amount	**28**	**100%**	

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Based on the frequency table for the VA class pretest scores, the highest score was 83 and the lowest score was 40. The average score (mean) was 60.48. Students who got grades 40-50 were 25%, grades 51-60 were 28%, grades 61-70 were 21%, grades 71-80 were 17%, and grades 81-90 were 9%.

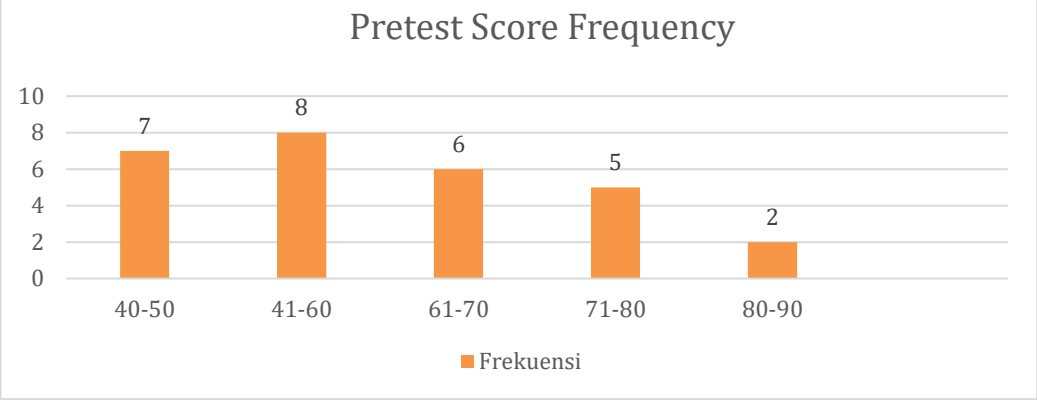

Figure 2. Histogram of Frequency Distribution of VA Pretest Scores

Based on the data above, it can be seen that the Pretest scores of students with 7 respondents getting a score of 40-50 with a presentation of 25%, 8 respondents getting a score of 51-60 with a presentation of 28%, 6 respondents getting a score of 61-70 with a presentation of 21%, 5 respondents got a score of 71-80 with a percentage of 17%, and 2 respondents got a score of 80-90 with a percentage of 9%.

Class V Posttest Results

Table 4. Frequency Distribution of Posttest Data

X	F	FX	$x-\bar{x}$	$(x-\bar{x})^2$	$F(x-\bar{x})^2$
66	1	66	-16,46	270,94	270,94
70	1	70	-12,46	155,24	155,24
73	2	146	-9,46	89,49	178,98
76	2	152	-6,46	41,73	83,46
80	6	480	-2,46	6,05	36,3
83	4	332	0,54	0,29	1,16
86	2	172	3,54	12,54	25,08
90	6	540	7,54	56,86	341,16
93	2	186	10,54	111,09	222,18
Amount	**$\sum F=26$**	**$\sum FX=2144$**	**$\sum x-\bar{x}= -25,14$**	**$\sum (x-\bar{x})^2= 744,24$**	**$\sum F(x-\bar{x})^2= 1.314,5$**

Based on the results of calculations obtained from the posttest in the experimental class, it can be concluded that the average value (mean) is 82.46, while the standard deviation results are 7.11 and the standard error is 1.42.

Table 5. Distribution of Posttest Score Presentation

Mark	Frequency	Percentage	Information
66-70	2	8%	Enough
71-75	2	8%	Good
76-80	8	30%	Good
81-85	4	16%	Very good
86-90	8	30%	Very good
91-95	2	8%	Very good
Amount	**26**	**100%**	

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Based on the frequency table of posttest scores for class VB, the highest score was 93 and the lowest score was 66. The average score (mean) was 82.46. Students who get a score of 66-70 by 8%, a score of 71-75 by 8%, a score of 76-80 by 30%, a score of 81-85 by 16%, a score of 86-90 by 30% and a score of 91-95 by 8 %.

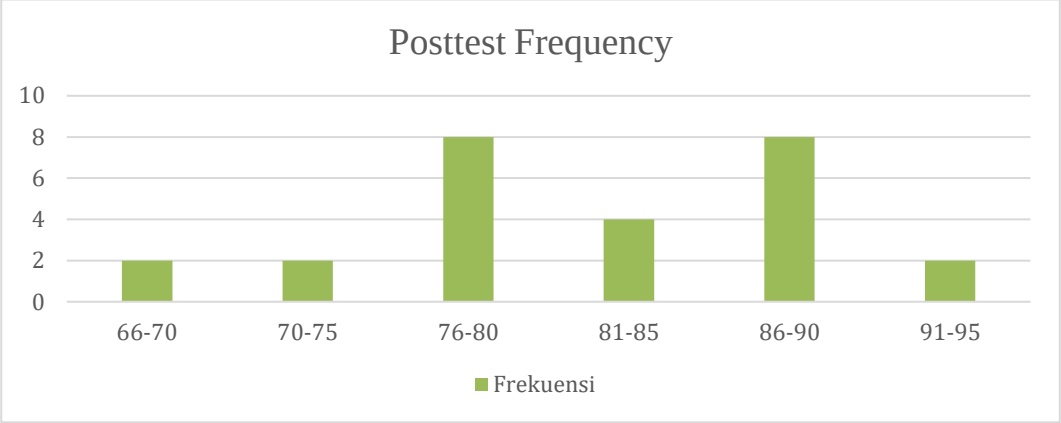

Figure 3. Histogram of Frequency Distribution of Posttest Scores

Based on the data above, it can be seen that the Posttest scores of students with 2 respondents getting a score of 66-70 with a presentation of 8%, 2 respondents getting a score of 71-75 with a presentation of 8%, 8 respondents getting a score of 76-80 with a presentation of 30%, 4 respondents got a score of 81-85 with a percentage of 16%, 8 respondents got a score of 86-90 with a percentage of 30% and 2 respondents got a score of 91-95 with a percentage of 8%.

The results of the posttest scores show an increase in the learning completeness of class V students. This result can be seen from the posttest score which is higher than the pretest score. Where the average posttest value is 82.46 while the average pretest value is 60.48. For more details, you can see the average pretest and posttest scores in the diagram below.

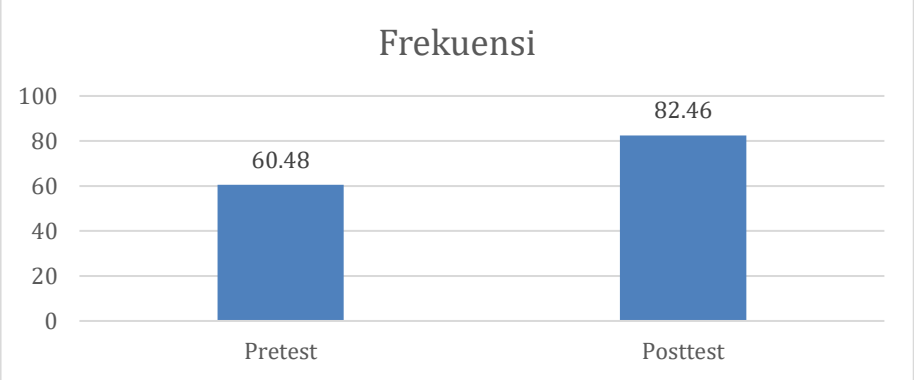

Figure 4. Diagram of Pretest and Posttest Average Scores

Based on the diagram above, it can be seen that the average posttest score for student learning outcomes is higher than the average pretest score before being given action on multiplication material.

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Table 6. Assessment Criteria

Assessment criteria	Information
80-100	Very good
70-79	Good
60-69	Enough
50-59	Not enough
0-49	Very less

Based on the table above, it can be concluded that the average value obtained was 82.46 in the very good category.

Class V Questionnaire Results

At the end of the lesson, the researcher gave a questionnaire to the students. This aims to determine the level of success and how the students are after being given an action through a problem based learning model based on song media.

Table 7. Frequency Distribution of Questionnaire Scores for Problem Based Learning Models Based on Song Media

X	F	FX	R	$x-\bar{x}$	$(x-\bar{x})^2$	$F(x-\bar{x})^2$
79	2	158	86,53	-7,53	56,7009	113,402
80	3	240	86,53	-6,53	42,6409	127,923
83	2	166	86,53	-3,53	12,4609	24,9218
86	5	430	86,53	-0,53	0,2809	1,4045
88	5	440	86,53	1,47	2,1609	10,8045
90	7	630	86,53	3,47	12,0409	84,2863
93	2	186	86,53	6,47	41,8609	83,7218
599	26	2250	605,71	-6,71	168,146	446,463

Based on the results of calculations obtained from the questionnaire, it can be concluded that the average value (mean) is 86.53, while the standard deviation results are 4.14 and the standard error is 0.828. Based on data processing, it is known that the questionnaire scores were 7 respondents who got 79-83, which was 26.92%, 10 respondents got 84-88, which was 38.46%, 9 respondents got 89-93, which was 34.62%.

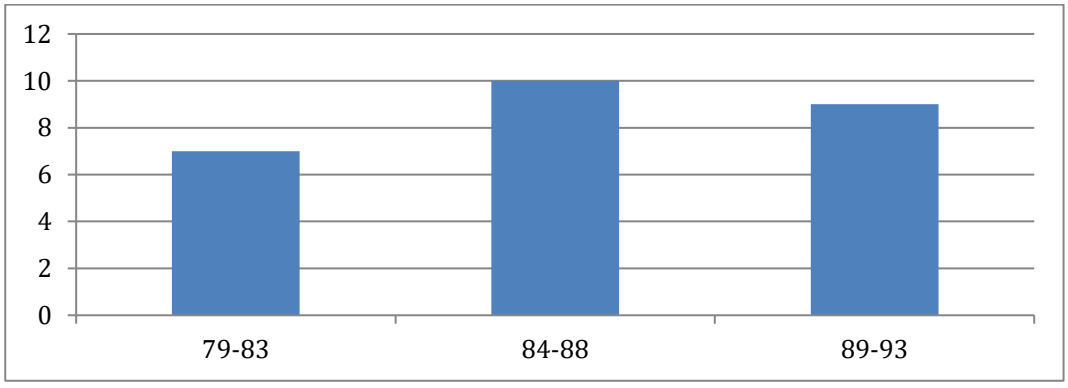

Figure 5. Histogram of Frequency Distribution of Questionnaire Scores

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Based on the frequency distribution table of the VB class questionnaire results, the highest score was 93 and the lowest score was 79.

Testing Requirements Analysis

Correlation Coefficient Test

The correlation coefficient test is used to determine whether there is an influence between the independent variable (X) on the related variable (Y), and the correlation coefficient test requirement is to calculate rcount ≥ rtable using the product moment correlation formula. To see the influence of the two variables, you can compare rcount and rtable. From the manual calculation above, it can be seen that the correlation value is 0.960. Meanwhile, the calculation of the correlation coefficient test with the help of SPSS Version 25 is as follows:

Table 8. Correlations

		Problem Based Learning Model Based on Song Media	Learning outcomes
Problem Based Learning Model Based on Song Media	Pearson Correlation	1	.960**
	Sig. (2-tailed)		.000
	N	26	26
Learning outcomes	Pearson Correlation	.960**	1
	Sig. (2-tailed)	.000	
			26

The table above shows that the correlation coefficient value is 0.960 if rcount ≥ rtable. 0.960 ≥ 0.388. So there is a very strong correlation influence between the problem based thinking model based on song media. It can be concluded that 96% of the influence of problem based learning methods based on song media and 4% of the influence of other factors on the learning outcomes of class V students at SD Negeri 034781 Batang Beruh Sidikalang. This can be seen from the table.

Table 9. Interpretation

Number	Interval Coefficient	Relationship Level
1	0,00-0,199	Very low
2	0,20-0,399	Low
3	0,40-0,599	Currently
4	0,60-0,7999	Strong
5	0,80-1,000	Very strong

Hypothesis testing

After the data is declared to be normally distributed and the samples are from the same population, then hypothesis testing is carried out using the "t test" statistic used to test the hypothesis is the t-test. The hypothesis proposed is:

Ha: There is a research objective on the influence of the Problem Based Learning Model Based on Song Media on Student Learning Outcomes in Science Learning in Class V of State Elementary School 034781 Batang Beruh Sidikalang

Ho: There is no influence of the problem based learning model based on song media on student learning outcomes in science learning in class V of SD Negeri 034781 Batang Beruh Sidikalang

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The t-test criteria can be said to be significant if the p value is smaller than 0.05. And the hypothesis is accepted (Ha) if $t_{count} \geq t_{table}$ (Ho), if t_{count} is smaller than t_{table} or $t_{count} \leq t_{table}$. Based on data processing in SPSS, it is known that the hypothesis is accepted (Ha), so $t_{count} \geq t_{table}$ tcount value 16,830 and t_{table} 1.706. The tcount value is 16,830 ≥ t_{table} 1.706.

Table 10. Hipotesis

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-60.109	8.481		-7.088	.000
	Problem Based Learning Model Based on Song Media	1.647	.098	.960	16.830	.000

Based on the data processing in the formula above, it is known that the hypothesis is accepted (Ha), then tcount ≥ ttable tcount value 16,830 and ttable 1.706. The t_{count} value is 16,830 ≥ t_{table} 1.706.

Discussion of Research Results

The aim of this research is to determine the effect of the problem based learning model based on song media on student learning outcomes in science learning in class V of SD Negeri 034781 Batang Beruh Sidikalang for the 2023/2024 academic year. Analysis of research implementation is needed to explain the level of success of learning using the problem based learning model based on song media. Results of testing the validity of the question instrument on 23 students with a total of 60 questions. Of the 60 question instruments tested, 51 question instruments were declared valid. The results of the reliability trial using SPSS ver 25 obtained an instrument reliability index of 0.956. From the results of these data calculations, it can be concluded that the instrument used is reliable because it has a very strong category reliability index.

The sample in this study was 52 students, where the researcher took two classes as research samples, namely class V A, totaling 28 students, as the control class using the lecture method learning model and V B, totaling 26 students, as the experimental class using the problem based learning (PBL) learning model.) directly using song media, the material taught in this research is heat and its transfer. To collect data, the researcher held 4 teaching meetings each in the experimental class and 2 times in the control class, 1 meeting for the pretest in the control class to see the students' initial knowledge and at the end 1 meeting for the posttest in the experimental class which aims to see learning outcomes after students are given different treatment.

The science learning outcomes of students in the control class or before being given treatment obtained an average score of 60.46 with a standard deviation of 12.21. The normality test results show 0.150, so it can be concluded that the pretest learning results are normally distributed, because the significance level obtained is greater than 0.173. The science learning results of students in the experimental class or after being given treatment obtained an average score of 82.46 with a standard deviation of 7.11. The normality test results show 0.094, so it can be concluded that the posttest learning results are normally distributed, because the Ltable obtained is greater than 0.173.

And you can see the difference in the final results of the two classes that the experimental class is superior to the control class, this is because the experimental class was treated using a problem based learning (PBL) learning model based on song media while the control class was only given direct learning using the lecture method. So by using a problem based learning (PBL) learning model based on song media, it can improve learning outcomes because students are presented with practical problems as a reference for student learning, so students carry out the process of learning activities from concrete problems.

The problem based learning (PBL) questionnaire based on song media obtained an average value of 86.53 with a standard deviation of 4.14. By testing the correlation coefficient of the problem based learning model based on song media and the learning outcomes of VB experimental class students with a correlation coefficient value of 0.960, there is a strong correlation influence between the problem based learning model

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based on song media and learning outcomes. It can be concluded that 96% have the influence of the problem based learning model and 4% have the influence of other factors, namely the learning outcomes of Class V students at SD Negeri 034781 Batang Beruh Sidikalang.

Based on the t-test carried out with the help of Microsoft Excel, the aim is to see the differences in student learning outcomes between those given treatment using a problem based learning model based on song media. If the t value is 16,830 with a significance of 0.000, which is less than 0.05, the t-test table concludes that "There is a significant influence of the Problem Based Learning Model Based on Song Media on Class V Science Learning Outcomes at State Elementary School 034781 Batang Beruh for the 2023/2024 Academic Year ". Based on the results of observations during the research, it was found that apart from the influence shown by the average learning outcomes being better, learning using a problem based learning model based on song media also made the learning atmosphere enjoyable. During the learning process there were some students who daydreamed or felt bored, all the students were very enthusiastic and enjoyed participating in the learning. At the end of the activity, when the students provide new conclusions, the teacher refines the opinions that the students have given, almost all of the students have understood the learning that has been carried out.

CONCLUSIONS AND RECOMMENDATION

Based on the discussion in this chapter, the researcher outlines the conclusions drawn up based on research activities regarding the influence of the Problem Based Learning Model Based on Song Media on Student Learning Outcomes in Science Learning in Class V of SD Negeri 034781 Batang Beruh Sidikalang, Academic Year 2023/2024. The process of implementing the Problem Based Learning Model Based on Song Media on Student Learning Outcomes in Science Learning in Class V of SD Negeri 034781 Batang Beruh Sidikalang is to give a Pre-Test and Post-test to respondents, the test is given with 30 questions each. Before being given treatment, the researcher gave a Pre-Test to determine the extent of students' knowledge regarding the material Heat and its Transfer. After getting the Pre-Test results, the researcher gave treatment to the students using the Problem Based Learning Model Based on Song Media, after giving the treatment the researcher gave a Post-test, this was done so that the researcher knew the extent of the students' abilities after being given the treatment. This can be seen from the average pre-test score of students of 60.46 which is in the low category, while the average post-test score is 82.46 which is in the very good category.

The influence of the Problem Based Learning Model based on Song Media on Student Learning Outcomes in Science Learning in Class V, hot material and its transfer at SD Negeri 034781 Batang Beruh Sidikalang. The results of the t-test calculation to find out whether the hypothesis is accepted or rejected, tcount ≥ttable, namely 7.806 ≥ 2.007, which means that there is an influence of Problem Based Learning Based on Song Media on student learning outcomes. Thus Ha is accepted and Ho is rejected. This research shows that student learning outcomes using Problem Based Learning Based on Song Media are more effective than ordinary learning. Therefore, in improving student learning outcomes, it is necessary to utilize learning models that can focus students' attention, especially on heat material and its transfer, one of which is the Problem Based Learning model based on Song Media presented by the researcher.

Based on research conducted by researchers at SD Negeri 034781 Batang Beruh Sidikalang, the suggestions put forward by researchers from the results of this research are as follows: For schools, it is hoped that teachers and students will improve the quality of learning by using the Song Media-Based Problem Based Learning learning method at SD Negeri 034781 Batang Beruh Sidikalang. For teachers, learning must be carried out using a variety of learning methods in order to create a teaching and learning process that does not tend to be boring, for example teachers create ice breakers so that students do not get bored, do not get sleepy, and train students' concentration during the learning process. For students, by using a problem based learning model based on song media, students are expected to play an active role in learning, so that the material studied can be understood well and learning becomes more enjoyable.

For Universitas Katolik Santo Thomas researchers, the next step is to conduct research on things that have not been achieved optimally in using the problem based learning model to improve student learning

outcomes in science subjects by using learning media. This is done so that the atmosphere of the learning process in the classroom can run smoothly. and conducive so that schools can produce the best and highest quality graduates

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