



The Effect of the Big Book Media-Based Discovery Learning Model on Class III Students' Learning Outcomes on Theme 7 Technological Development at Agia Sophia Private Elementary School

Rosenda Ita Tarigan, Patri Janson Silaban, Dyan Wulan Sari HS, Antonius Remigius Abi, Irmina Pinem

Universitas Katolik Santo Thomas, Medan, Indonesia

rosendaita@gmail.com, patri.janson.silaban@gmail.com, wulasdyan@gmail.com, antoniusremiabis3@gmail.com, irmina_pinem@uts.ac.id

corresponding author: rosendaita@gmail.com

ABSTRACT

This study seeks the effect of the discovery learning model based on Big Book media on student learning outcomes on theme 7 Technological developments in class III of Agia Sophia Private Elementary School in the academic year 2023/2024. This research used quantitative methods. The sampling technique used purposive sampling and the sample used was 30 students in class III. The research results show that student learning outcomes using the Discovery Learning model based on Big Book media are in the excellent category with an average of 80.3 with a correlation test result of 0.846, which means r_{count} is $0.846 \geq r_{table}$ is 0.367, so H_0 is accepted. Therefore, there is a strong effect between the Discovery Learning model based on Big Book media and the student learning outcomes in theme 7 Technological developments in class III of Agia Sophia Private Elementary School in the academic year 2023/2024. It can be seen from the results of the T-test research where t_{count} $8.403 \geq t_{table}$ 2.048 so H_0 is accepted. This shows a significant positive effect from the Discovery Learning based on Big Book media on student learning outcomes in theme 7 Technological developments in class III of Agia Sophia Private Elementary School in the academic year 2023/2024.

Keywords: discovery learning model, big book media, student learning outcome, elementary school

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INTRODUCTION

The world of education continues to develop and change. There are many things that affect the education system, especially in the present era. Many things affect the education system in schools, one of the targets that must be achieved is none other than learning outcomes. Student learning activities are required to actively participate in the learning process which can be found in the seriousness of students when paying attention to the teacher's explanation, asking questions about things they do not understand. In fulfilling these goals, of course, the first thing that humans want is to get the opportunity to get a quality education. Improving the quality of education is by implementing and improving the quality of education in schools and the needs of society, by following advances in science and technology, learning that supports spiritual, intellectual, social, emotional, kinesthetic aspects that are adjusted to conditions. (Sista, 2017). Improving the quality of education is also closely related to the learning process which should meet the criteria of being interactive, inspiring, fun, active, challenging, motivating, providing space for students to develop their independence. Where in teaching and learning activities there is interaction between teachers and students or reciprocal relationships in educational units. Teachers as one of the components in the teaching and learning process are very important role holders. Teachers are not just conveyors of material, but can be said to guide and direct students to achieve learning outcomes. (Situmorang, 2022). However, in reality, in the field it shows that learning outcomes are still very low, it can be seen that students are less enthusiastic about participating in learning. So far, learning

is still less interesting for students, tends to be boring, so students still have difficulty understanding the material that the teacher conveys. This is evidenced by the lack of enthusiasm of students during learning, some students are seen not paying attention to the teacher when explaining the material, some always ask for permission to go out, and some even disturb friends and chat so that the class is less conducive. Teachers carry out learning not using varied learning models.

Table 1. Daily Test Scores of Grade III Students of Agia Sophia Private Elementary School

No.	Subjects	KK M	Number of Students	Percentage (%)	Completion Statement
1.	Indonesian language	>70	14	40%	Completed
		<70	16	60%	Not Completed
2.	PPKN	>70	13	35%	Completed
		<70	17	65%	Not Completed
Overall			30	100%	Completed

(source: Asmiati Hutasoit, Grade III teacher, Agia Sophia Private Elementary School)

Table 1. shows the minimum passing grade (KKM) in learning Indonesian and PPKN students is 70. It is estimated that the learning outcomes of students in the previous year's learning were 30 students in the subject. In the Indonesian language subject, 16 students or 60% did not complete it, while 14 students or 40% completed it. In the PPKN subject, 13 students or 65% did not complete it and 17 students or 35% completed it.

Another thing is that teachers tend to use conventional learning models and assignments in learning because they consider this method to be the most effective for teachers to use to deliver material to students. The activeness of students is also less apparent in the learning process. Students tend to be passive and only listen to what the teacher teaches, which is still dominant in the teaching and learning process in the classroom (Teacher Centered) so that learning in the classroom is more in one direction. This is a concern where a new learning model is needed so that it can support a much more active learning process

Murtadlo (2019: 2) also argues that the learning model is a form of learning that can be interpreted as a conceptual framework used as a reference or learning activities. Based on the problems above, the researcher offers a Discovery Learning learning model based on Big Book media. By innovating the approach or learning model, it is hoped that the quality of the process and learning outcomes can be improved. Through this Discovery Learning learning model, students are expected to be able to find, identify through their own discoveries directly.

According to Widyastuti, (2022: 111-117). The Discovery Learning model is a model for developing active learning methods by finding out for themselves, investigating for themselves, so that the results obtained will be loyal and long-lasting in memory. Through discovery learning, students can also learn to think analytically and try to solve their own problems through observations or experiments carried out by students. In discovery learning, students are encouraged to learn largely through their own active involvement with concepts and principles, and teachers encourage students to have experiences and conduct experiments that allow them to discover principles for themselves.

Related to that, it is also necessary to use media that can attract students' attention in following the learning process more optimally, namely the Big Book media. Big Book media or in Indonesian is the same as a large book which has the meaning of a reading book that has a large size, writing and pictures. The size of the Big Book media can have various sizes, for example A3, A4, and A5. This Big Book media is an intermediary to convey material to students so that students are able to understand the material presented which involves children's interest quickly because the images it has, contain rhythms that are interesting to children, have large images, there are repeated writings, contain planned vocabulary and some are repeated, have a simple storyline so that it can train students' attraction in following learning. The research aims to determine the influence of the Discovery Learning model based on Big Book media to what extent the Discovery Learning model supported by Big Book media can improve student learning outcomes, particularly on the theme of Technology Development in the third grade of Agia Sophia Private Elementary School.

LITERATURE REVIEW

Discovery Learning Learning Model

Learning in schools certainly has several activities that must be prepared by teachers and recipients of learning to be able to communicate and understand each other about the learning that is delivered, not only that but learning must bring about changes that aim to carry out learning outcomes in student behavior and thinking. Through learning models, teachers can help students to get information, skills, ways of thinking, and express their ideas.

According to Sari HS (2021: 89-98) The Discovery Learning learning model is a series of learning activities that emphasize the process of thinking critically and analytically to find and find answers to a problem in question. The thinking process itself is usually carried out through questions and answers between teachers and students, Discovery Learning is also a learning process that occurs when lessons are not presented with lessons in their final form, but students are expected to organize themselves. Discovery is finding concepts through a series of data or information obtained through observation or experimentation

Lestari (2020: 7), states that the definition of the Discovery Learning learning model is a learning model that encourages students to ask questions and draw conclusions from general principles of practice, examples of experiences. According to Susanto (2021:422-430), the Discovery Learning learning model is a model for developing active learning methods by discovering for themselves, investigating for themselves, so that the results obtained will be loyal and long-lasting in memory, through discovery learning students can also learn to think analytically and try to solve the problems they face themselves. According to Lestari (2022:665-673), the Discovery Learning learning model is a model for developing active student learning methods by discovering for themselves, so that the results obtained will be more durable in memory.

Based on the above understanding, it can be concluded that the Discovery Learning learning model is a learning model that encourages students to ask questions and draw conclusions from general principles of practical examples of experience, active learning methods by discovering for themselves, investigating for themselves, so that the results obtained will be loyal and long-lasting in memory, through discovery learning students can also learn to think analytically and try to solve the problems they face themselves.

Steps for Implementing the Discovery Learning Model

To implement a learning model, the right steps are needed. The following are the steps for implementing the Discovery Learning learning model according to experts. According to Lestari (2020: 38), the steps of the Discovery Learning learning model include:

- 1) Orientation, The teacher provides phenomena related to the material being taught to focus students on the problems being studied. The phenomena presented by the teacher make the teacher aware of the students' abilities.
- 2) Hypothesis Generation, Information regarding the phenomena obtained at the orientation stage is used at the hypothesis generation stage, where students formulate problem hypotheses to achieve the goals of the learning process.
- 3) Hypothesis testing, Proof of the hypothesis is made by students with proof of hypothesis testing or the testing stage, students design and carry out experiments to prove the hypothesis that has been formulated
- 4) Conclusion, The activity at the conclusion stage is to review the hypothesis that has been formulated with the facts that have been obtained from testing the hypothesis. Students decide the facts of the results of the hypothesis testing whether the hypothesis is in accordance with the hypothesis that has been formulated.
- 5) Regulation, This stage is related to the planning, monitoring and evaluation process. To find out the truth of the steps and actions that have been taken by students related to student planning.

According to Lestari (2010:16), several steps that must be taken by teachers are as follows:

- 1) Formulate the problem that will be given to students with sufficient data, the formulation must be clear, avoid statements that cause misinterpretation so that the direction taken by students is not wrong
- 2) Based on the data provided by the teacher, students compile, process, organize, and analyze the data.

- 3) Students compile the contour (forecast) and the results of the analysis they have carried out.
- 4) If deemed necessary, the contour that has been made by the students above is checked by the teacher
- 5) If certainty has been obtained by the truth of the construction, the rebalization of the context should be handed over to students to compile.
- 6) After students determine what they are looking for, the teacher should provide practice questions or additional questions to check whether the findings are correct.

According to Marisya (2020: 218-2198) the Discovery learning model is as follows:

- 1) Stimulation, In this activity, the teacher provides stimulants, which can be in the form of reading, pictures, and stories according to the learning material to be discussed, so that students gain learning experience through reading activities, observing situations or seeing pictures.
- 2) Problem identification (problem statement), At this stage, students are required to find out what problems are faced in learning, they are given the experience to ask, observe, seek information, and try to formulate problems.
- 3) Data collection (data collecting), At this stage, students are given the experience of seeking and collecting information that can be used to find alternative solutions to the problems faced.
- 4) Data processing, Data processing activities will train students to try and explore their conceptual abilities to be applied in real life, so this activity will also train logical and applicative thinking skills.
- 5) Verification, This stage directs students to check the truth and validity of the data processing results, through various activities, including asking friends, discussing, and looking for various relevant sources, and associating them, so that they become a conclusion.
- 6) Generalization, In this activity, students are led to generalize the results of observations carried out during teaching and learning activities, the conclusion is on a similar incident or problem, so that the knowledge is embedded in the students.

Based on several opinions of experts regarding the steps of the Discovery Learning learning model, it can be concluded that the steps of the Discovery Learning learning model according to Marisya (2020: 218-2198). Because these steps can encourage active participation and student learning motivation starting from experience, finding problems, collecting various information, training students to manage or analyze data independently, checking and re-examining the findings regarding the problem, after that students provide conclusions on the information that has been obtained so that with these steps can prioritize independence and creativity.

Strengths and Weaknesses of the Discovery Learning Learning Model

The advantages of the Discovery Learning learning model in learning according to Lestari (2020:22), the application of the Discovery Learning learning model has the following advantages

- 1) Helps students to improve and increase their skills and cognitive processes
- 2) Can improve students' ability to solve problems (problem solving)
- 3) The knowledge obtained through this strategy is very personal and powerful because it strengthens understanding, memory, and transfer.
- 4) This strategy allows students to develop quickly and according to the speed they go through.
- 5) Causes students to direct their own learning activities by involving their minds and self-motivation.
- 6) This strategy can help students strengthen their self-concept, because they gain confidence in working together with others.
- 7) Centered on students and teachers playing an equally active role in expressing ideas.
- 8) Helps students eliminate skepticism (doubt) because it leads to final and certain or definite truths.
- 9) Students will understand basic concepts and ideas better.
- 10) Helping and developing memory and transfer in new learning processes

According to Darsimah (2021:1900-1908) some of the advantages of the discovery learning model

- 1) Students are active in learning activities, because they think and use their abilities to find the final result.
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- 2) Students really understand the learning material, because they experience the process of finding it themselves.
- 3) Finding it yourself can create a sense of satisfaction.
- 4) Students who gain knowledge through the discovery method will be better able to transfer their knowledge to various contexts.
- 5) This model trains students to learn on their own.

Meanwhile, according to Pitri (2018:23) the advantages of the discovery learning model include:

- 1) Helping students to improve and enhance their skills and cognitive processes.
- 2) The knowledge gained through this model is very personal and powerful because of weaknesses in understanding, memory, and transfer.
- 3) Creates a sense of pleasure in students
- 4) This method allows students quickly and at their own pace
- 5) Causes students to direct their own learning activities
- 6) This model strengthens its own concept, because it gains trust, collaborates with others
- 7) Helps students develop healthy knowledge towards final and certain or definite truth

Behind the advantages of Discovery Learning, there are also disadvantages, namely according to Lestari (2020: 28-29)

- 1) Gives rise to the assumption that there must be mental readiness to learn.
- 2) Less efficient when applied to students with a large number of students because students need time to guide students to find theories or other problem solving.
- 3) The discovery learning learning model focuses more on development and understanding or cognitive aspects than skills and effectiveness aspects.

According to Salmi (2019:1-16), the weaknesses of the discovery learning model include:

- 1) Teachers feel they have failed to detect problems and misunderstandings between teachers and students
- 2) Takes up a lot of time
- 3) Takes up the teacher's work
- 4) Not all students are able to make discoveries
- 5) Does not apply to all topics (regarding time, the discovery learning strategy takes longer than expository)

According to Kemilawati, D. (2023:3), the discovery learning model also has an opinion about the weaknesses of the discovery learning model, including the following:

- 1) This method raises the assumption that there is a readiness of the mind to learn
- 2) This method is not efficient for teaching a large number of students.
- 3) The hopes contained in this model can be shattered when faced with students and teachers
- 4) Does not provide opportunities for thinking that will be discovered by students because they have been chosen by the teacher in advance. Based on the opinions of the experts above, it can be seen that learning using the Discovery Learning learning model has advantages, including a fun, interesting and effective learning atmosphere, can arouse creativity and improve psychomotor abilities, and can train students to get used to thinking and expressing opinions and students can solve every problem found by themselves. The weaknesses of the Discovery Learning learning model include taking a long time, especially for students who have weak abilities, so that it guides teachers to be truly able to organize properly so that the weaknesses in this learning model can be minimized. And this model does not apply to every learning.

Media Big Book

One way to make learning more interesting is by implementing one of the learning media, one example of such media is the Big Book media which is an enlarged version of a children's book, usually narrative and considered one of the most effective ways to engage children with print media. According to Marlina (2018:212-242), who stated that the Big Book is a large book with printed text and illustrations that have high visualization for students as the teacher reads the book to all students in the class. Furthermore, Marlina

(2018:533) explains that the Big Book media is one of the media that children like and can be made by the teacher themselves. Meanwhile, Ritonga (2022:4) states that the Big Book is a picture book that is chosen to be enlarged and has special qualities. The special quality here means that the Big Book can quickly involve children's interest because the pictures it has, contain rhythms that are interesting to children, have large pictures, there is repeated writing, contains planned vocabulary and some are repeated. Rahmita (2019:297) that "Big Book allows students to learn to read by memorizing and repeating reading". In one of the newspapers, it is proven that the use of Big Book media is very beneficial for teachers. One of the media that can be used by teachers is to utilize large book media (Big Book). It is called Big Book because its size is much larger than ordinary books. "It is deliberately designed so that students can recognize the alphabet, letters and words more easily". Big Book contains simple sentences and pictures that illustrate the contents of the sentence.

The description above can be concluded that Big Book is a large book with printed text and illustrations that have high visualization, which are liked by children and can be made by the teacher themselves. Big Book media can involve children's interest quickly because the pictures it has, contain rhythms that are interesting to children, have large pictures, are colored, there is writing that is repeated, allows students to learn by memorizing and repeating readings containing planned vocabulary and some are repeated learning. So with the Big Book media, students will find it easier to memorize and remember the learning material taught by the teacher.

Advantages and Disadvantages of Big Book Media

The advantages of Big Book media are because of its large size so that it can overcome the readability of all students in the learning class. According to Anecy (2022: 13-37.), including: (1) providing opportunities for students to be involved in reading material activities in a non-threatening way, (2) allowing all students to see the same writing when the teacher reads the writing, (3) the use of Big Books allows children to work together and collaboratively give meaning to the writing in it, (4) providing opportunities for students who are slow to read, (5) making students like reading, (6) developing all aspects of language, (7) providing social experiences to children in various experiences when children comment on pictures and readings and the contents of the Big Book, (8) can be interspersed with relevant conversations, according to the development of students' experiences and imaginations.

According to Hadian (2018:37) the advantages of Big Book media include: 1) Providing opportunities for students to be involved in reading activities together. 2) Allowing all students to see the same writing when the teacher reads the writing. 3) Allowing students to work together to give meaning to each writing in the Big Book. 4) Providing opportunities for students who are slow readers to recognize writing with the help of teachers and other friends, 5) liked by students, including students who are late readers. By reading the Big Book together, courage and confidence arise in students that they "can" read. 6) Developing all aspects of language. 7) can be interspersed with relevant conversations about the content of learning with students so that learning topics continue to develop according to students' experiences and imaginations.

According to Puspaningrum (2015:175-183), Big Book has several advantages, including: (a) giving students the opportunity to be involved in reading activities in a non-threatening way, (b) allowing all students to see the same writing when the teacher reads the writing, (c) the use of Big Book allows children to work together and collaboratively give meaning to the writing in it, (d) giving opportunities to students who are slow readers, (e) making students like reading, (f) developing all aspects of language, (g) giving children social experiences in various experiences when children comment on the pictures and readings in the Big Book, (h) can be interspersed with relevant conversations, in accordance with the development of students' experiences and imaginations.

In addition to having advantages, Big Book media also has disadvantages, according to Anegy (2022:164), the disadvantages of Big Book media include: (1) Big Book media must be properly maintained so that it is not easily damaged, therefore Big Book media is stored in a large plastic bag so that it is not easily

exposed to dust and is put in a cupboard so that it is not easily damaged, (2) The reading text in the Big Book generally only covers the core part of an event so that the presentation of the material cannot be presented in detail, so the teacher must convey detailed images through questions and answers outside the text to add material that is not yet covered in the Big Book media so that students better understand the material in the Big Book, and (3) because making large Big Book media requires extra time and energy, it is better for the manufacturing process to be carried out well before the Big Book media is used in the learning process. In addition, it can also be used to anticipate errors or deficiencies during the manufacturing process.

According to Husnaini. (2020: 38) the shortcomings of the Big Book learning media are explained as follows: 1) Cannot display audio because the Big Book only displays visuals in the form of images and writing. 2) Cannot display moving images because the Big Book only displays visuals in the form of still or unmoving images and writing. 3) Teachers are limited in displaying images and writing through the Big Book, especially for three-dimensional objects. According to Lidiawati (2018: 64), namely: 1) Cannot display audio because the Big Book only displays visuals in the form of images and writing. 2) Cannot display moving images because the Big Book only displays visuals in the form of still or unmoving images and writing.

Based on the opinions of the experts above, researchers can conclude that the advantages of Big Book media include providing opportunities for students to be involved in reading material activities in a non-threatening way, the use of Big Books allows children to work together and collaboratively give meaning to the writing in it, provide social experiences to children in various experiences when children comment on pictures and readings in the Big Book, can be interspersed with relevant conversations, in accordance with the development of students' experiences and imaginations.

The advantages of Big Book media are because of its large size so that it can overcome the readability of all students in the learning class. According to Anecy (2022: 13-37.), including: (1) providing opportunities for students to be involved in reading material activities in a non-scary way, (2) allowing all students to see the same writing when the teacher reads the writing, (3) the use of Big Book allows children together and by working together to give meaning to the writing in it, (4) providing opportunities for students who are slow to read, (5) making students like to read, (6) developing all aspects of language, (7) providing social experiences to children in various experiences when children comment on pictures and readings and the contents of the Big Book, (8) can be interspersed with relevant conversations, according to the development of students' experiences and imaginations. According to Hadian (2018: 37) the advantages of Big Book media include: 1) Providing opportunities for students to be involved in reading activities together. 2) Allowing all students to see the same writing when the teacher reads the writing. 3) Allows students to work together to give meaning to each writing in the Big Book. 4) Provides an opportunity for students who are slow readers to recognize writing with the help of teachers and other friends, 5) is liked by students, including students who are late readers. By reading the Big Book together, courage and confidence arise in students that they "can" read. 6) Develops all aspects of language. 7) can be interspersed with relevant conversations about the content of learning with students so that learning topics continue to develop according to students' experiences and imaginations.

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generally only covers the core part of an event so that the presentation of the material cannot be presented in detail, so the teacher must convey detailed images through questions and answers outside the text to add material that is not yet covered in the Big Book media so that students better understand the material in the Big Book, and (3) because making large Big Book media requires extra time and energy, it is better for the manufacturing process to be carried out well before the Big Book media is used in the learning process. In addition, it can also be used to anticipate errors or deficiencies during the manufacturing process. According to Husnaini. (2020:38) the disadvantages of Big Book learning media are explained as follows: 1) Cannot display audio because Big Book only displays visuals in the form of images and writing. 2) Cannot display moving images because the Big Book only displays visuals in the form of still or motionless images and writing. 3) Teachers are limited in displaying images and writing through the Big Book, especially for three-dimensional objects. According to Lidiawati (2018:64), namely: 1) Cannot display audio because the Big Book only displays visuals in the form of images and writing. 2) Cannot display moving images because the Big Book only displays visuals in the form of still or motionless images and writing.

Based on the opinions of the experts above, researchers can conclude that the advantages of the Big Book media include being able to provide opportunities for students to be involved in reading material activities in a non-scary way, the use of the Big Book allows children to work together and work together to give meaning to the writing in it, provide social experiences to children in various experiences when children comment on images and readings from the Big Book, can be interspersed with relevant conversations, according to the development of students' experiences and imaginations. Behind the advantages of the Big Book media, there are also disadvantages.

METHOD

Research methods

Sugiyono (2021:6) emphasized that "The research method is interpreted as a scientific way to obtain data with certain goals and uses". The type of research used by the researcher is the experimental method. Sugiyono (2021:107) argues that "The experimental method is a research method used to find the effect of certain treatments on others under controlled conditions". In this study, the researcher intends to test the effect of the independent variable, namely the Discovery Learning learning model (x) on the dependent variable, namely student learning outcomes (Y).

Data Analysis Techniques

Normality Test

Before hypothesis testing is carried out, data normality testing is carried out first. Normality testing is conducting a test on whether the distribution of data to be analyzed is normal. The normality test is carried out on the variables studied, namely the independent variable (X) and the dependent variable (Y). To find out whether the data is normally distributed or not, the researcher used the Kolmogrov-Smirnov Analysis with the help of the SPSS version 22.0 program. The calculation results show that the data is normally distributed if the Asymp. sign value is greater than $0.05 \geq 0.05$. Conversely, if the Asymp. sign value is less than or equal to $0.05 \leq 0.05$, then the data can be said to be not normally distributed. This Asymp. Sign value tests the significance of the Kolmogov-Smirnov test calculation results. The data normality test carried out in this study used the Liliefors test, (Sudjana, 2018: 466) Observation X_1, X_2, \dots, X_n is made into standard numbers Z_1, Z_2, Z_n using the formula $Z_i = \frac{X_i - X}{s}$

- 1) For each of these standard numbers and using the standard normal distribution list, then calculate the probability $F(z_i) = P(Z \geq Z_i)$
- 2) Next, calculate the proportion of Z_1, Z_2, \dots, Z_n which is smaller than or equal to Z_i . If this proportion is expressed by $S(Z_i)$, then $S(Z_i) =$ the number of Z_1, Z_2, \dots, Z_n which $\leq Z_i$
- 3) Calculate the difference $F(Z_i) - S(Z_i)$ then determine the absolute value.

4) Take the absolute value that is spread (L0) to accept or reject the hypothesis, then compare L0 with the critical value taken from the list, for a real level of ∞ 0.05.

With the criteria: if $L_count \leq L_table$ then the sample is not normally distributed If $L_count \geq L_table$ then the sample is normally distributed.

Correlation Test

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

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}} \dots\dots\dots \text{Arikunto (2012:87)}$$

Information:

- r_{xy} = product moment correlation coefficient
- N = total number of students
- $\sum X$ = Item score
- $\sum Y$ = Total score of all students
- $\sum XY$ = The sum of the results of multiplying the “X” score and the “Y” score.

It can be concluded that if $r_count \geq r_table$, then there is an influence between the independent variable and the dependent variable. Conversely, if $r_count \leq r_table$, then there is no influence between the independent variable and the dependent variable.

Table 2. Interpretation of Correlation Test

Interval of Relationship	Level Coefficient
0.00-0.199	Very Low
0.20-0.399	Low
0.40-0.599	Medium
0.60-0.799	Strong
0.80-1.000	Very Strong

Sumber: Sugiyono, (2021:248)

Hypothesis Testing

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

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \dots\dots\dots \text{Sugiyono (2018:275)}$$

Information:

- r = Correlation Coefficient
- n = Sample

to find out whether the hypothesis is accepted (Ha) then $tcount \geq ttable$ and vice versa $tcount \leq ttable$ then the hypothesis is rejected (Ho).

RESULTS AND DISCUSSION

Grade III Pretest Results

The researcher gave a pretest first to 30 students in grade III before starting the learning to determine the students' abilities. The aim is to determine the students' learning outcomes in learning theme 7 technological

development subtheme 2 development of clothing production technology in grade III of Agia Sophia Private Elementary School.

Table 3. Frequency Distribution of Grade III Pretest Scores

X	F	FX	$X-x - \bar{x}$	X^2	FX^2
32	1	32	-24,16	583,7056	583,7056
40	2	80	-16,16	261,1456	522,2912
48	3	144	-8,16	66,5856	199,7568
52	7	364	-4,16	17,3056	121,1392
56	5	280	-0,16	0,0256	0,128
58	1	58	1,84	3,3856	3,3856
60	2	120	3,84	14,7456	29,4912
64	5	320	7,84	61,4656	307,328
68	1	68	11,84	140,1856	140,1856
70	1	70	13,84	191,5456	191,5456
72	1	72	15,84	250,9056	250,9056
76	1	76	19,84	393,6256	393,6256
696	30	1684		1984,627	2743,488

The calculation results obtained from the pretest data showed that the average result (mean) was 56.16, while the standard deviation was 9.56 and the standard error was 1.77.

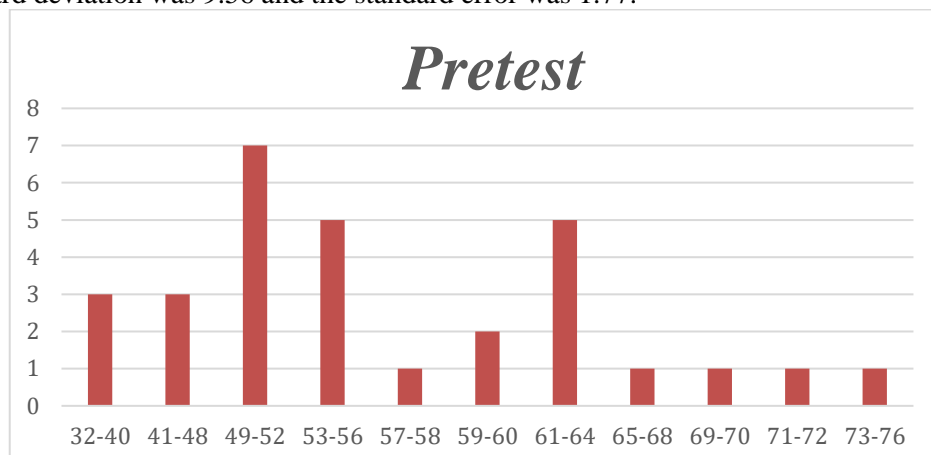


Figure 1. Histogram of Frequency Distribution of Pretest Scores

The results of the test given at the beginning or before a learning model was given were that there were 27 students with scores below the KKM and 3 students with scores above the KKM, so the researcher followed up by providing a treatment, namely by implementing a discovery learning model based on big book media in the class.

Grade IV Posttest Results

After the treatment was given using the Big Book Media-Based Discovery Learning learning model during teaching, the researcher then tested the students' understanding again by giving post-test questions to the students to measure the extent of the positive influence of the Big Book Media-Based Discovery Learning learning model on student learning outcomes in class III. The results of the post-test scores can be seen in the table below:

Table 4. Frequency Distribution of Class III Data

X	F	FX	$X - \bar{x}$	X^2	FX^2
60	1	60	-20,3	412,09	412,09
68	2	136	-12,3	151,29	302,58
70	2	140	-10,3	106,09	212,18
74	1	74	-6,3	39,69	39,69
75	3	225	-5,3	28,09	84,27
76	1	76	-4,3	18,49	18,49
78	1	78	-2,3	5,29	5,29
79	1	79	-1,3	1,69	1,69
80	3	240	-0,3	0,09	0,27
81	1	81	0,7	0,49	0,49
83	2	166	2,7	7,29	14,58
85	3	255	4,7	22,09	66,27
87	3	261	6,7	44,89	134,67
88	1	88	7,7	59,29	59,29
89	2	178	8,7	75,69	151,38
90	1	90	9,7	94,09	94,09
92	2	184	11,7	136,89	273,78
1355	30	2411		1203,53	1871,1

From the calculation results obtained from the posttest data, the average result (mean) is 80.36, while the standard deviation is 7.89 and the standard error result is 1.46.

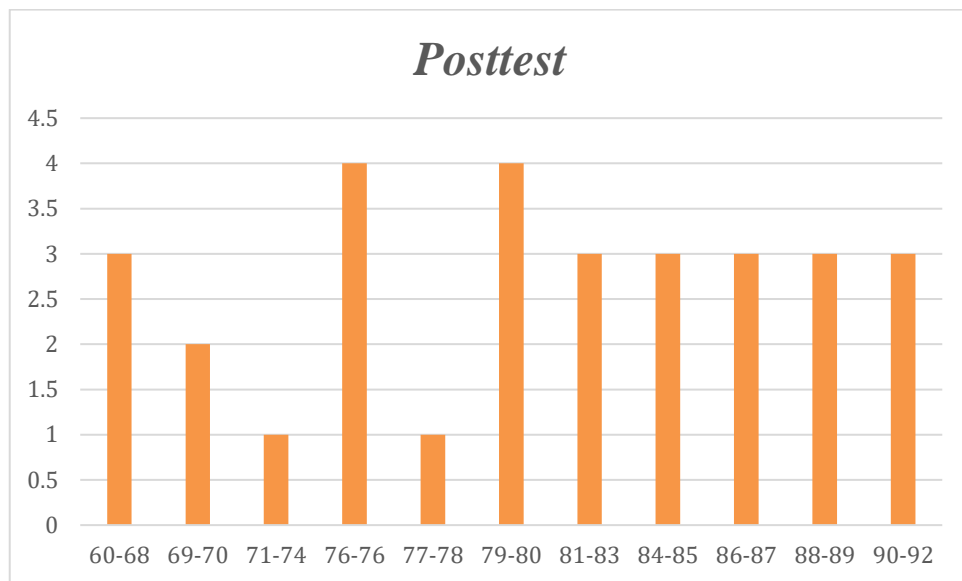


Figure 2. Histogram of Frequency Distribution of Posttest Results

After being given treatment to students in grade III of Agia Sophia Private Elementary School according to the material that has been provided, the results of the provision of the model can be seen from the data above. Based on these data, it is known that there was an increase in student grades after being given treatment from before the treatment was given. This increase can be seen in the diagram below:

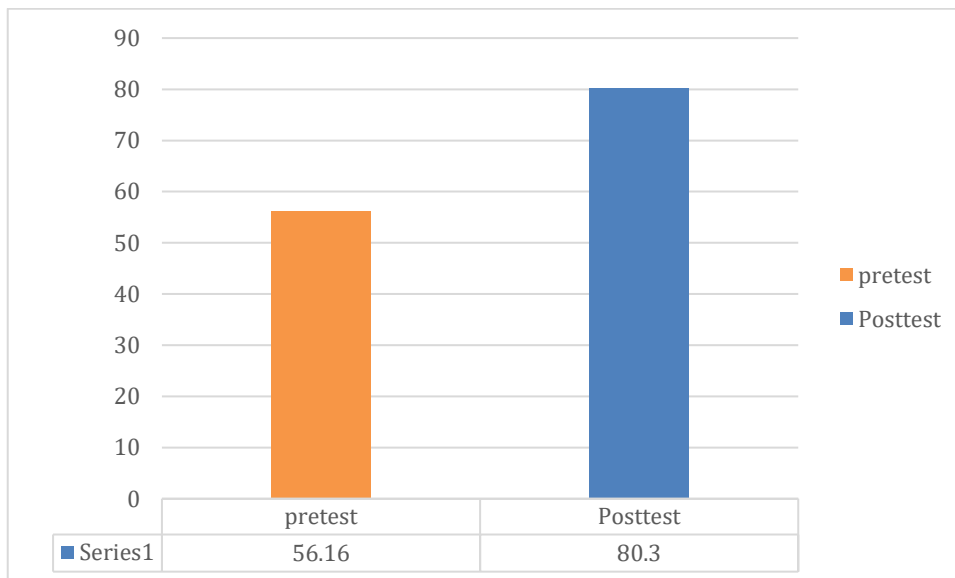


Figure 3. Diagram of Pretest and Posttest Average Values

From Figure 4.3 above, it can be seen that the learning outcomes of grade III students before being given treatment using the Big Book Media-Based Discovery Learning model, the average value is 56.16, while after being given learning treatment using the Big Book Media-Based Discovery Learning model, students get an average value of 80.3. So it can be concluded that there is an increase in the average value after being given treatment to students. The assessment criteria for the average pretest and posttest can be seen in the table below:

Table 5. Assessment Criteria

Assessment criteria	Description
80-100	Very Good
70-79	Good
60-69	Fair
50-59	Poor
0-59	Failed

Based on table 5, it can be concluded that the average value obtained during the pretest was 56.16 with a less category. While the average value of the posttest after the treatment was obtained was 80.3 with a very good category.

Class III Questionnaire Results

At the end of the learning, after the Posttest is given, the researcher will then provide a questionnaire on the Discovery Learning learning model based on Big Book media which aims to see the teacher's activities during teaching while using the Discovery Learning learning model based on Big Book media. The results of the questionnaire can be seen in the table below:

Table 6. Distribution of Frequency Results of Questionnaire Values for Discovery Learning Model Based on Big Book Media

X	F	FX	$X - \bar{x}$	X^2	FX^2
60	2	120	-18,3	334,89	669,78
65	1	65	-13,3	176,89	176,89
70	2	140	-8,3	68,89	137,78
72	2	144	-6,3	39,69	79,38
74	1	74	-4,3	18,49	18,49
75	4	300	-3,3	10,89	43,56
78	1	78	-0,3	0,09	0,09
80	7	560	1,7	2,89	20,23
82	1	82	3,7	13,69	13,69
84	1	84	5,7	32,49	32,49
85	4	340	6,7	44,89	179,56
88	1	88	9,7	94,09	94,09
90	1	90	11,7	136,89	136,89
92	1	92	13,7	187,69	187,69
94	1	94	15,7	246,49	246,49
1189	30	2351		1408,95	2037,1

Based on the table above, the total is 2351 with an average of 78.3 with the highest value being 94 and the lowest value being 60. The frequency distribution of data on the results of the Discovery Learning learning model questionnaire for grade III students can be seen below:

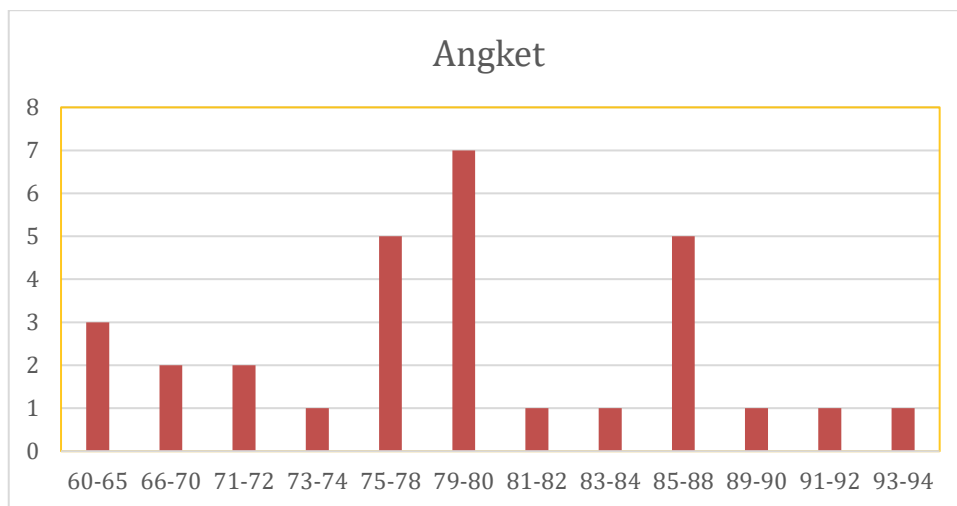


Figure 4. Histogram of Frequency Distribution of Questionnaire Results

Based on the frequency distribution table of the results of the class III questionnaire, the highest value was 94 and the lowest value was 60 with an average (mean) of 78.3.

Data Analysis Test

Normality Test

The normality test is used to determine whether the data from the study is normally distributed or not. And to determine whether the data from the posttest of the learning outcomes of grade III students of Agia

Sophia Private Elementary School are normally distributed or not, calculations are carried out using SPSS. The significance level (sig) of 5% is as follows:

1. Significance value (sig) < 0.05 non-normal distribution
2. Significance value (sig) > 0.05 normal distribution

With normality testing using the Test Of Normality test. The following can be seen below the results of the Lilliefors Test calculation using SPSS Version 22.

Table 7. Questionnaire Normality Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
VAR00001	.135	30	.168	.971	30	.573

The significance level value used by the researcher is a significance level of 5% or 0.05. Based on the results of the study above, the significance value of class III is 0.168 > 0.161, so according to the decision making in the Lilliefors normality test, it can be concluded that the results of the class III questionnaire are normally distributed.

Table 8. Normality Test of Learning Outcomes

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Hasil Belajar	.118	30	.200*	.956	30	.241

The significance level value used by the researcher is a significance level of 5% or 0.05. Based on the results of the study above, the significance value of class III is 0.200 > 0.161, so according to the decision making in the Lilliefors normality test, it can be concluded that the posttest data of class III is normally distributed.

Data Processing Techniques

Correlation Coefficient Test

The correlation coefficient test is used to determine whether there is an influence between the independent variable (X) and the dependent variable (Y), and the requirement for the correlation coefficient test is to see the calculated $r > r$ table with the product moment correlation formula. Researchers work on the correlation coefficient test manually using Microsoft Excel and using SPSS Version 22.

Table 9. Correlation Coefficient Test

		Discovery Learning	Learning outcomes
Discovery Learning	Pearson Correlation	1	.846**
	Sig. (2-tailed)		.000
	N	30	30
Learning outcomes	Pearson Correlation	.846**	1
	Sig. (2-tailed)	.000	
	N	30	30

From the table above shows that the correlation coefficient value is 0.846. If $r_{count} > r_{table}$, then there is an influence between the independent variable and the dependent variable. From the table above the correlation coefficient value is 0.846 > 0.361. This means that there is a positive correlation between the Discovery Learning Model and student learning outcomes.

Table 10. Correlation Coefficient Interval

Coefficient Results	Information
0,00-0,199	Very low
0,20-0,399	Low
0,40-0,599	Medium
0,60-0,799	Strong
0,80-1,00	Very strong

Research Hypothesis Testing (t-Test)

After the data is stated to be normally distributed and the sample is from the same population, then the hypothesis can be tested using the t-test. To test the hypothesis, this study uses the t-test. The proposed hypothesis is:

1. Ha: There is an influence of the Discovery Learning model on student learning outcomes.
2. Ho: There is no influence of the Discovery Learning Model on student learning outcomes.

The hypothesis criteria are accepted (Ha) if $t_{count} > t_{table}$ and rejected (Ho) if $t_{count} < t_{table}$. The following is a table of the results of the t-test hypothesis calculation as follows:

The following will present a table of the results of the hypothesis testing with the help of the SPSS program ver 22 as follows:

Table 11. Hypothesis Test (t-Test)

	Model	Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	16.812	7.605		2.211	.035
	Discovery Learning	.811	.097	.846	8.403	.000

Based on the calculation of the hypothesis test (t-test) with SPSS Version 22, it can be seen that the standard error is 0.097, beta 0.846, the t-test result is 8.403 and the significance is 0.000. To find out whether there is an influence, the significant results obtained can be seen $0.000 < 0.05$. The result of the t-test calculation from SPSS ver 22 is 8.403. To find out whether the hypothesis is accepted or rejected, $t_{count} > t_{table}$, namely $8.403 > 2.048$, which means that there is an influence of the discovery Learning model on student learning outcomes.

Discussion of Findings

Discovery Learning is based on the theory of Jerome Bruner (1961), which states that active learning and independent discovery help students build new knowledge based on their own experiences. Students are engaged to discover concepts, principles, or relationships through structured exploration. The Big Book Media-based Discovery Learning model provides students with the opportunity to independently explore concepts in Theme 7, Subtheme on Technological Development. The Big Book media supports this exploration process by providing visual elements and engaging stories, helping students understand the material more deeply. Richard E. Mayer (2001) in the Cognitive Theory of Multimedia Learning explains that learning using a combination of visual (images) and verbal (text) elements can enhance student understanding. The Big Book Media, with clear text and large illustrations, facilitates student engagement both visually and verbally. The Big Book Media is used to facilitate Discovery Learning. Students find it easier to understand concepts through the combination of text and images, which aids in the processing of information in students' working memory. The validity of the instrument, as explained by Anastasi and Urbina (1997), measures the extent to which the test tool truly measures the intended concept. In this study, validity was calculated using SPSS, resulting in 25 out of 40 questions being valid for the test and questionnaire. Reliability, which was calculated using the KR-20 formula by Kuder and Richardson (1937),

indicates the consistency of measurement results. The reliability index of the test instrument is 0.950 and the questionnaire is 0.958, both of which fall into the very high category, indicating that the instruments used are highly reliable.

According to Benjamin Bloom (1956) in the Taxonomy of Educational Objectives, effective learning must include improvements in three main domains: cognitive, affective, and psychomotor. The average pretest score of the students was 56.16, indicating that the students had not yet met the Minimum Completeness Criteria. (KKM). After being treated with the Discovery Learning model based on Big Book Media, the average posttest score increased to 80.3, with 90% of students achieving scores above the Minimum Completeness Criteria (KKM). This improvement indicates the effectiveness of the learning model. Based on the Kolmogorov-Smirnov and Shapiro-Wilk tests, data is considered normal if the significance value is greater than 0.05. This study shows that the data is normally distributed ($p > 0.05$), allowing for further statistical analysis. Guilford (1956) explains that the correlation coefficient r in the range of 0.80–1.00 indicates a very strong relationship. In this study, the correlation value $r = 0.846$, indicates a significant relationship between the Discovery Learning model based on Big Book Media and students' learning outcomes.

The hypothesis test using the t-test shows that $t_{hitung} = 8.403$ is greater than $t_{tabel} = 2.048$, with a significance level of $p = 0.000 < 0.05$. This indicates a significant influence of the Discovery Learning model based on Big Book Media on students' learning outcomes. Robert Gagné (1985) in Conditions of Learning states that the success of learning can be measured through significant changes in students' abilities. The increase in average scores from pretest to posttest indicates that this model can positively influence students' learning outcomes, including critical thinking skills and conceptual understanding. This research shows that the application of Discovery Learning based on Big Book Media supports various educational theories, such as: Discovery Learning (Bruner) which encourages active learning, Cognitive Theory of Multimedia Learning (Mayer) which emphasizes the importance of visualization and verbalization in learning, Taxonomy of Educational Objectives (Bloom) for measuring learning outcome improvements, Inferential Statistics (Guilford and Cohen) to prove significant relationships and influences between the learning model and learning outcomes. Thus, this learning model can be recommended to improve student learning outcomes, especially at the elementary school level.

CONCLUSIONS AND RECOMMENDATION

Conclusions

Based on the results of the discussion of the research on the influence of the Discovery Learning learning model based on Big Book media on student learning outcomes on theme 7 Technological development with sub-theme 2 Development of clothing production technology in Class III of Agia Sophia Private Elementary School in the 2023/2024 Academic Year, several conclusions can be drawn. The process of implementing learning using the Discovery Learning learning model based on Big Book media on theme 7 technological development sub-theme 2 development of clothing production technology learning 6 in the 2023/2024 academic year can be categorized as very good because it can be seen from the results of the first pre-test score which was categorized as very low then learning outcomes increased after being given the Discovery Learning model treatment based on Big Book media and giving a post-test so that learning outcomes increased.

Application of the Discovery Learning learning model based on Big Book media on student learning outcomes on theme 7 technological development with sub-theme development of clothing production technology by giving a pre-test before giving treatment to class III students. The pretest results of students in class III have an average value of 56.16 where there are 3 students who have completed with a percentage of 10% and 27 students who have not completed with a percentage of 90%. By using the Discovery Learning learning model Based on Big Book Media, the posttest learning outcomes of students increased with an

average value of 80.3 and there are 27 students who have completed with a percentage of 90% and there are 3 students who have not completed with a percentage of 10%.

There is an influence of the Discovery Learning learning model Based on Big Book Media on student learning outcomes in the theme 7 Technological Development with subtheme 2 development of clothing production technology in class III of Agia Sophia Private Elementary School. It can be seen from the average pretest score of students 56.16 and the average posttest score of students 80.3. Based on the results of the hypothesis test (t-test) with a t_{count} value $\geq t_{table}$, namely $8.403 \geq 2.048$ at a significant level of $0.000 < 0.05$. The data can show that H_a is accepted, namely that there is an influence between the Big Book Media-Based Discovery Learning model (X) and student learning outcomes (Y).

Recommendation

Based on the results of the research conducted by the researcher, suggestions can be put forward that can build learning success in schools. Principal, Develop or train teachers to be skilled in using various learning models/approaches. The Discovery Learning learning model Based on Big Book Media should be one of the efforts to implement the learning model in the school. In addition, the teaching facilities and systems in the classroom should be given more attention in order to improve the quality of teaching, especially in Theme 7 Technological Development Subtheme 2 Development of clothing production technology

Teachers, Should be able to understand the learning difficulties experienced by students. This is done to facilitate the provision of appropriate assistance and guidance according to the location of the student's difficulties, so that students who experience learning difficulties get clear direction so that they can improve their learning outcomes, Consider the use of the Discovery Learning learning model Based on Big Book Media as one way to deliver learning materials to students, and apply it to other lessons that are in accordance with the material to be taught. Students, To interact more in learning activities so that they have social skills in working together, being responsible and respecting the opinions of others. For Readers, It is expected that readers will use this research as a reference in conducting research related to this research. Further Researchers, Further researchers are expected to continue their research using the make a match learning model in learning so that better learning outcomes are obtained than previous researchers.

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