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# THE EFFECT OF PROBLEM SOLVING LEARNING MODEL ON LITERACY AND NUMERACY OF GRADE IV STUDENTS

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**ABSTRACT**

*The effect of problem solving learning model on literacy and numeracy of fourth grade students of SDN 640 Ponnori, Luwu district.This study aims (1) to determine the description of the problem solving learning model in student learning in class IV SDN 640 Ponnori, (2) to determine the description of literacy and numeracy in class IV students of SDN 640 Ponnori, and (3) to determine the effect of the problem solving learning model on literacy and numeracy of students in class IV SDN 640 Ponnori. This type of research is descriptive quantitative research. The method used in this research is Quasy Experiment research . The population in this study were all grade IV students of SDN 640 Ponnori. The sampling technique used saturated sampling. The data collection techniques used were observation, tests, and documentation. The data analysis technique used is descriptive and inferential analysis. The results showed that: 1) The description of the problem solving learning model in student learning in class IV SDN 640 Ponnori is well implemented. This can be seen from the implementation of the aspects observed in the teacher observation sheet using the learning model obtained a score of 86.6% which is included in the high category. 2) The picture of literacy and numeracy of students in class IV SDN 640 Ponnori has increased. The results of the final test conducted obtained a percentage value of 88.68% which is included in the very high category.3) The problem solving learning model affects the literacy and numeracy of fourth grade students of SDN 640 Ponnori. This can be seen from the results of hypothesis testing with a significance value of 0.000 <0.05, meaning that there is an effect of using the problem solving learning model on literacy and numeracy of grade IV students of SDN 640 Ponnori.*

## 1. INTRODUCTION

One of the most essential human needs is education. Education's job is to construct individuals, and those people in turn create their surroundings. All learning experiences that occur in all settings and throughout life and have an impact on personal development are collectively referred to as

education. As long as there is environmental influence, education endures throughout one's life. (Alannasir, 2023)

in accordance with Education Law No. 20 of 2003. In order for students to actively develop their potential for religious spiritual strength, self-control, personality, intelligence, noble character, and skills required by themselves, society, the nation, and the state, education is a deliberate and planned attempt to create a learning environment and learning process.

In order to prepare pupils to be able to play a part in many surroundings in a permanent manner for the future, families, communities, and governments make a fundamental effort through guidance, teaching, and training activities that take place both inside and outside of schools throughout life.

The foundation for learning abilities in a variety of professions is reading. One can expand their knowledge and discover previously undiscovered things via reading. The government and education specialists are working to raise the standard of education in light of this. Through seminars, workshops, and trainings on the outcomes of choosing subject matter and learning strategies for particular fields of study, like science, mathematics, Indonesian language, and others, the government has made numerous attempts to address education.

Indeed, education has emerged as a key component in enhancing Indonesia's human capital to develop the country. By initiating the National Literacy Movement (GLN), which was created by the government, and implementing education through schools through the School Literacy Movement (GLS), the Ministry of Education and Culture has been working since 2016 to create a literacy culture.

Literacy and numeracy skills are defined as the ability of learners to describe information related to numbers or mathematics, then formulate a problem, analyze, and find a solution to the problem. Every primary school student needs a solid foundation in these areas in order to support their ability to participate fully in society, engage in education, and reach their potential.

One subject that can help pupils improve their numeracy abilities is mathematics. The reason mathematics is important is because it helps pupils develop their reasoning skills. Given that there are so many calculations and formulas to learn, it might be claimed that some students find mathematics to be a frightening topic because it demands more sophisticated thinking abilities.

In this instance, the existence of a learning model is inextricably linked to the teaching process. Learning models are described as the methodical processes via which we plan learning activities to accomplish learning goals or approaches. Problem-based learning, or problem solving, is one of the learning methodologies that can be employed by modifying the independent curriculum. This learning style places a high priority on problem-solving in learning exercises to help students develop their ability to reason in order to comprehend the subject more deeply.

Model pembelajaran *problem solving* adalah suatu model pembelajaran yang memusatkan pada pengajaran dan keterampilan pemecahan masalah yang di ikuti dengan penguatan keterampilan. Penggunaan model pembelajaran ini melatih siswa menghadapi berbagai masalah baik itu masalah pribadi atau perorangan maupun masalah kelompok untuk dipecahkan sendiri atau secara bersama-sama.

In order to address the learning crisis in Indonesia, curriculum elements are required. This includes addressing the issue of Indonesian students' inability to grasp fundamental literacy and numeracy skills, such as comprehending simple reading and applying fundamental math principles. With the numerous adjustments, it is anticipated that this curriculum will be able to address issues like enhancing Indonesian children's literacy and numeracy abilities.

Through observations at SDN 640 PONNORI, local government regulations require all students to master literacy in the lower grades. Students who have occupied the high grades no longer focus on their literacy in the sense that high grade students focus on improving their learning outcomes in critical thinking, memory development, and creativity in solving problems. However, in this school, student literacy and numeracy are still said to be minimal because in the high grades there are still some students who have not mastered literacy and problem solving. Especially in class IV with 19 students, of these students there are still 5 to 6 students who are not good at reading. In addition to the

reading issue in class IV, students' numeracy is still regarded as being low in this class due to their lack of enthusiasm in studying, particularly when it comes to numeracy, such as arithmetic. Students' enthusiasm for learning and teachers' lack of originality and inventiveness are indicators of this. This is the reason why students comprehend numbers less well. based on the low class's KKM (Minimum Completeness Criteria) of 60 and the high class's KKM of 70 for mathematics. Raising the score is what the class teacher undertakes to ensure that the KKM in math learning is met.

Selecting the appropriate learning model is one way to address the aforementioned issues and enable educators to incorporate an efficient learning process into the classroom. The researcher's approach to issue solving is to use the issue Solving learning model to carry out the learning process. Because the problem solving learning model is known to focus on teaching and problem solving skills, where students are encouraged to think critically and trained to find solutions to problems given by teachers actively, logically, and creatively, researchers made an effort to solve this issue by using it.

## 2. METHODS

This study employs a quantitative methodology. This kind of research is referred to as a quasi-experiment. The fourth-graders at SDN 640 Ponnori are the subject of this study. Ten male and nine female students made up the research sample of 19 that the researchers used. ascertained using the saturation sampling technique. utilizing independent dependent factors and independent dependent variables, where the problem solving learning model is the independent variable and literacy and numeracy are the dependent variables in this study. A group pretest-posttest quasi-experiment design was employed as the research methodology. Tests, documentation, and observation served as the study's data sources. Descriptive statistical analysis and inferential statistical analysis, which are separated into preparatory tests (normality, homogeneity, and hypothesis testing), were the two steps used to examine the data in this study. The Statistical System For Social Science Version 25 was used to test the data analysis method of this study. Based on decision-making, if the significant value is less than 0.05, then H0 is rejected and H1 is accepted; if it is greater than 0.05, then H0 is accepted and H1 is rejected.

## 3. RESULTS AND DISCUSSION

This section will show the findings of the data description of each variable, including the percentage of grade IV students at SDN 640 Ponnori who use the problem solving learning model (X) in their reading (Y1) and numeracy (Y2) classes.

### 1. Gambaran model pembelajaran *problem solving*

An explanation of the findings from teacher observation, which is helpful in determining whether or not the problem-solving learning model is being used in the teaching process. Class IV SDN 640 Ponnori is where this learning procedure seeks to observe learning outcomes.

**Table 3.1 description of teacher observation results**

| | Before using the learning model | After using the learning model |
|---|---|---|
| Acquisition score / maximum score | 35/60 | 52/60 |
| Percentage | 58,3% | 86,6% |
| Qualification | Medium | Very High |

(pictures 1)

(pictures 2)

According to the following data, 58.3% of students who took the pretest and received a medium score of 35/60 were able to use the problem-solving learning model after completing teacher-led activities. In order to observe the outcomes of teacher activity following the implementation of the learning model, two meetings were conducted in class IV SDN 640 Ponnori with a total of 19 students, using the same subjects as before the implementation of the problem solving learning model. The initial therapy session During this meeting, students are divided into four groups and given number cards. The teacher then explains how to use the cards, assigns a task, and gives each group a chance to display the number cards they have been given. This encourages students to be active and interested in the learning process by using number cards that correspond with the learning material. The treatment was administered effectively at the initial meeting. The second session of the problem-solving learning model is then held, during which students are given issues to solve and given the chance to practice solving teacher-provided sample problems in front of the class. Students were highly engaged and more interested in the learning process with number cards that corresponded with the course material during the second meeting after receiving this therapy. Treatment was administered effectively during this second encounter. Additionally, the teacher observation sheet shows that the posttest, which was administered using the problem solving learning paradigm, received a score of 52/60 (very high), with an 86.6% percentage. Class IV pupils at SDN 640 Ponnori can successfully complete the learning process by utilizing the problem-solving learning paradigm.

This study demonstrates that the use of the problem-solving learning model has an impact on the literacy and numeracy of fourth-grade students. The observation sheet before and after the learning model is used demonstrates a notable increase in these skills.

## 2. An overview of class IV SDN 640 Ponnori's reading and numeracy

The pretest and posttest results in mathematics learning provide a description of the literacy and numeracy of SDN 640 Ponnori's grade IV students.

**Table 3.2 description of *pretest* and *posttest* data of fourth grade students of SDN 640 ponnori**

| | *Pretest* result data | *Posttest* result data |
|---|---|---|
| Acquisition score / maximum score | 1.360/19 | 1.685/19 |
| Percentage | 71,58% | 88,68% |
| Qualification | High | Very High |

(pictures 3)

(pictures 4)

Data on the pretest and posttest results for class IV students of SDN 640 Ponnori in mathematics courses show that they scored 1,360/19 on a total of 10 essay topics, which is a high proportion of 71.58%. Despite the high qualities of the pretest results, some pupils cannot be considered complete in the learning process.Students in class IV still have low literacy levels; they struggle to read and write. Researchers claim this because, although students who are not proficient readers are instructed to read for fifteen minutes before beginning their studies, they simply appear perplexed. Researchers aim for the literacy and numeracy process to occur with an integrated and complete strategy during the treatment process, which is intended to improve literacy and numeracy. Students are exposed to a variety of reading materials in the literacy component, including poetry, instructional texts, and folktales, all of which are intended to improve their vocabulary and comprehension. Group discussions that support reading activities assist students in understanding texts and effectively communicating their thoughts. Students also participate in imaginative and educational writing exercises that help them to articulate their ideas in a methodical way

In terms of numeracy, grade IV pupils at SDN 640 Ponnori are taught fundamental mathematical ideas about numbers using improvised media that researchers have offered. Learning numeracy also entails using arithmetic in practical settings, such measuring and computing in daily life. By doing this, students get practical problem-solving abilities in addition to an understanding of mathematical theory. The overall goal of SDN 640 Ponnori's literacy and numeracy integration in the classroom is to provide a solid basis for the academic and cognitive growth of its students.

The researcher administered the pretest and therapy before administering the test once more. Researchers administered the posttest to class IV students at SDN 640 Ponnori in order to assess their growth in reading and numeracy. With a percentage of 88.68% (extremely high), this posttest received a score of 1,685/19 out of 10 essay items.

The pretest and posttest findings show that pupils have significantly improved, with the posttest assessor's KKM score exceeding the criteria for evaluating students' mastery of mathematics. It is evident from the posttest results that class IV SDN 640 Ponnori students are becoming more literate and numerate.

**3. The effect of the *problem solving* learning model on student literacy and numeracy in class IV SDN 640 Ponnori**

Prior to determining the impact of the problem-solving learning model on the reading and numeracy skills of class IV SDN 640 Ponnori students in the T-test, an assumption test—the normality and homogeneity tests—must be conducted.

1. Normality test

The purpose of the normalcy test is to ascertain whether or not the collected data is normally distributed. The pretest and posttest results of the student learning outcomes were used to generate the normality test data.

**Table 3.3 results of the normality test of *pre-test* and *post-test* data for class IV SDN 640 Ponnori.**

| Data Normality | Kolmogrov Smirnov | Description |
|---|---|---|
| Pre test | 0,020 | 0,020 ≥ 0,05<br>p-Value ≥ α normal |
| Post test | 0,068 | 0,068 ≥ 0,05<br>p-Value ≥ α normal |

(pictures 5)

(pictures 6)

The pre-test and post-test results for class IV pupils at SDN 640 Ponnori are generally distributed, as the table above demonstrates. The normality test findings showed that the "p-value (sig)" was more than 0.05. Therefore, it can be said that the data collected by SDN 640 Ponnori class IV pupils is normally distributed.

2. Homogeneity test

To find out if the data from the sample class is homogeneous, the homogeneity test is used. Pretest and posttest data will be used to test for homogeneity.

**Table 3.4 *pretest* and *posttest* homogeneity test results of class IV SDN 640**

| Data | Sig | Description |
|---|---|---|
| *Pretest* and *posttest* | 0,21 > 0,05 | Homogeny |

3. Hypothesis testing

The statistical package for social science (SPSS) 25 was used to test the pre-test and post-test outcomes in order to conduct this analysis. If the sig value is present, the condition is considered significant. <0.05 (2-tailed). The purpose of this analysis is to ascertain how pre-test and post-test results differ in terms of learning outcomes. The outcomes of the pre-test and post-test scores are as follows.

**Tabel 3.5 hasil nilai pre test dan nilai post test siswa kelas IV SDN 640 Ponnori.**

| Data | T | Df | Sig.(2-tailed) | Description |
|---|---|---|---|---|
| ***Pretest* and *posttest*** | 4.859 | 18 | 0,000 | 0,00 < 0,05 |

According to the above table, the T count is 4.859 and the T table is 1.753 (the T table is included in the attachment), indicating that the value of 0.00 <0.05. There is a known substantial difference between the learning results of the posttest after utilizing the Problem Solving learning model and the pretest scores before using the model. The following conclusions about the hypothesis test results can be drawn from the data:
Sig<0.05 / T count> T table = then an influence is present.
0.0 <0.05 out of 4,859 > 1,753 indicates an effect.
$H_1$: The literacy and numeracy of grade IV students at SDN 640 Ponnori are impacted by posttest results following the implementation of the Problem Solving learning paradigm. (accepted since 4,859 > 1,753 0.000 < 0.05)

a. **Descriptive statistical results**

1. Descriptive results of *pretest* data

The following is a description of the pretest data, which is the outcome of the learning test taken by grade IV students at SDN 640 Ponnori before to the application of the problem solving learning model, following the implementation of the study's results activities:

**Table 3.6 descriptive results of *pre-test* data class IV SDN 640 Ponnori**

| Statistics | | |
|---|---|---|
| pretest | | |
| N | Valid | 19 |
| | Missing | 0 |
| Mean | | 71.58 |
| Median | | 70.00 |
| Mode | | 70 |
| Std. Deviation | | 5.284 |
| Variance | | 27.924 |
| Range | | 15 |
| Minimum | | 65 |
| Maximum | | 80 |
| Sum | | 1360 |

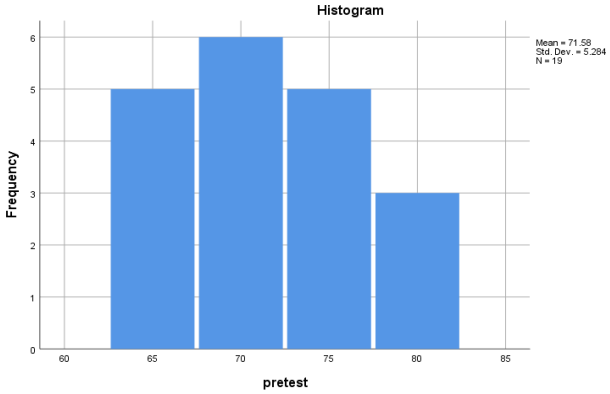
Table 3.6 shows the distribution of pretest results among fourth grade students at SDN 640 Ponnori, ranging from a minimum score of 65 to a maximum score of 80 with a range of 15 points, a mode of 70, and a median of 70.00. The mean or average value of student pretest learning outcomes is 71.58 from an ideal score of 100, which may be attained by students in the high category, with a standard deviation of 5.28.

A pre-test frequency distribution table can be created using the findings of descriptive computations of the aforementioned data. The following is the pre-test frequency table derived from the material mastery level instrument's research findings:

| No. | intervals | Frequency | Percentage | Category |
|---|---|---|---|---|
| 1 | 0-34 | 0 | 0% | Very low |

| | | | | |
|---|---|---|---|---|
| 2 | 35-54 | 0 | 0% | Low |
| 3 | 55-64 | 0 | 0% | Medium |
| 4 | 65-84 | 19 | 100% | High |
| 5 | 85-100 | 0 | 0% | Very High |
| | **Amoun** | 19 | 100% | |

**Figure 3.1 Frequency distribution histogram of pre-test learning outcomes**




The frequency distribution of pre-test learning outcomes with interval scores 0-34 as many as 0 students, 35-54 as many as 0 students, 55-64 as many as 0 students, 65-84 as many as 19 students, and 85-100 as many as 0 students can be observed in the above histogram table.

2. Description of posttest data results

Post-test results on student learning outcomes from class IV SDN 640 Ponnori after the problem-solving learning model was implemented are compared to the pre-test results from before the problem-solving learning model was implemented. Based on the findings of the class processing instrument research, the post-test learning outcomes frequency distribution table looks like this.

**Table 3.7 description of *post-test* data results of class IV SDN 640 ponnori**

| **Statistics** | | |
|---|---|---|
| postest | | |
| N | Valid | 19 |
| | Missing | 0 |
| Mean | | 88.68 |
| Median | | 90.00 |
| Mode | | 90 |
| Std. Deviation | | 8.473 |
| Variance | | 71.784 |
| Range | | 25 |
| Minimum | | 75 |
| Maximum | | 100 |
| Sum | | 1685 |

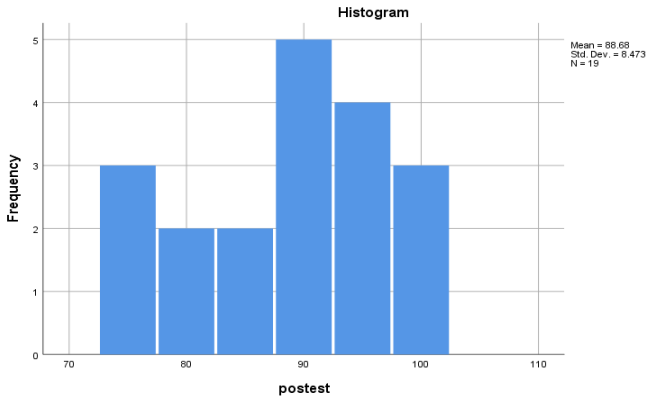
It is evident from table 4.7 that students in the very high category got an average score of 88.68 out of a possible 100 on the posttest learning outcomes. These data show that the posttest

learning outcomes in class IV SDN 640 Ponnori ranged from a minimum score of 75 to a maximum score of 100 with a range of 25, a mode of 90, and a median of 90.00. The standard deviation is 8.47.

A frequency distribution table can be created using the findings of the descriptive computation of the aforementioned data. According to the material mastery level instrument's research findings, the post-test learning outcomes' frequency distribution table looks like this:

| No. | Interval | Frequency | Percentage | Category |
|---|---|---|---|---|
| 1 | 0-34 | 0 | 0% | Very low |
| 2 | 35-54 | 0 | 0% | Low |
| 3 | 55-64 | 0 | 0% | Medium |
| 4 | 65-84 | 3 | 15,79% | High |
| 5 | 85-100 | 16 | 84,21% | Very High |
| | **amount** | 19 | 100% | |

**Figure 3.2 Frequency distribution histogram of post-test learning outcomes**




The frequency distribution of learning outcomes with interval scores of 0-34 with 0 students, 35-54 with 0 students, 55-64 with 0 students, 65-84 with 3 students, and 85-100 with 16 students is evident from the above histogram table.

**DISCUSSION**

The impact of the Problem Solving learning model on the reading and numeracy skills of SDN 640 Ponnori's grade IV pupils throughout the 2024–2025 academic year is investigated in this study. The same competency criteria, fundamental competencies, and resources were used for the research, which took place from July 29 to August 16, 2024. One group pretest and posttest (one group pretest-posttest design) were employed in the investigation. What is meant by a quasi-experiment in research.

This research design was selected because grade IV students at SDN 640 Ponnori will receive treatment from researchers utilizing the Problem Solving learning model. Nineteen fourth-grade children made up the study's sample. By taking into account the outcomes of the students' pretests and posttests, the sampling strategy employed the Saturated Sampling approach. The problem formulation for this study is:

An overview of the problem solving learning model in class IV students of SDN 640 ponnori through learning carried out from before using the learning model to conducting treatment with this

problem solving learning model, the results of students' literacy and numeracy learning experienced a significant increase in percentage value. Where before using the problem solving learning model had a percentage value of 58.3% (medium) after doing the pretest test. The percentage value of using this problem solving learning model increased after taking the posttest test with a percentage value of 86.6% (very high).

There are only a few steps involved in implementing this problem-solving learning model; numerous experts describe how the Problem-Based Learning Strategy is applied. The six steps of the Problem-Based Learning Strategy, which was subsequently dubbed the problem solving approach, were described by American education expert John Dewey. These steps are as follows: a) Formulating the problem: Students identify the problem that has to be solved in this step. b). Analyzing the problem: In this step, students examine the topic critically from a variety of perspectivesc). Creating hypotheses: In this step, students use their knowledge to create a variety of potential answers. d). Gathering data, which is the student's method of locating and characterizing the information required to address the issue. e). Hypothesis testing, which involves the actions or conclusions that the student takes in order to determine if the suggested hypothesis is accepted or rejected. f). Developing recommendations for problem-solving, including the actions taken by the student to outline suggestions that can be made in light of the outcomes of hypothesis testing and the formulation of conclusions. (Nilakumalasari, Ni Made Asih, 2021; Desak Putu Eka)

This is demonstrated by the results of teacher observations conducted prior to the implementation of the problem solving learning model, which obtained a score of 36/60 (medium), with a percentage of 58.3%, and the results of the teacher observation sheet conducted following the implementation of the problem solving learning model, which obtained a score of 52/60 (very high), with a percentage of 86.6%, following the completion of the posttest. According to the percentage value before and after implementing the problem-solving learning approach, grade IV students at SDN 640 Ponnori have improved their reading and numeracy skills.

The pretest and posttest results provide a summary of the literacy and numeracy of SDN 640 Ponnori's class IV students. The original test, or pretest, had a high qualification percentage of 71.58%. According to the class IV pupils' initial exam results, some kids have yet to achieve the KKM score. Through two sessions of treatment, researchers used a problem-solving learning approach to help students become more proficient in reading and numeracy. The purpose of this treatment is to enhance the outcomes of previous basic tests. Additionally, the researcher administered a posttest or final test following the treatment to assess the improvement in learning outcomes and gauge the rise in literacy and numeracy among fourth-grade students at SDN 640 Ponnori. The results of the final test showed that 88.68% of the students had very high qualifications. These fourth-grade kids' final exam, which included 19 responders, yielded results that were in line with the predefined KKM values. Following the implementation of the problem-solving learning methodology, grade IV students' literacy and numeracy abilities improved.

The capacity to read and write is known as literacy. Since literacy is the first skill that every person needs to have in order to exist in the future, its growth is extremely significant. (Ikhsan Abdul Asis & Yani Fitriani, 2019).

Understanding other fundamental literacies, including science literacy, numeracy literacy, digital literacy, cultural and civic literacy, and financial literacy, can begin with the ability to read. This assertion is consistent with the Minister of Culture and Education's (2017) viewpoint. Numeracy literacy is one of the fundamental literacy skills that can be used in elementary school instruction. (Khakima, Lilis Nurul, 2021).

According to Baharuddin et al. (2021), numeracy abilities are the capacity to use, comprehend, and evaluate mathematics in many contexts in order to resolve issues in daily life. The Minimum Competency Assessment (AKM), which is administered to primary and secondary school pupils every year, includes numeracy abilities as one of its metrics.(Rika Mulyati Mustika Sari & Azra Farzana Sukaryo, 2024) p. 462

According to research in class IV SDN 640, Ponnori claims that learning using a problem-solving learning model influences learning outcomes in literacy and numeracy in mathematics subjects. This is in line with the explanation above that literacy and numeracy are the foundational learning skills that students must possess in order to be applied in everyday life. A test consisting of ten description questions with mathematics subjects and the theme of reading and writing small numbers up to 10,000 and figuring out and using the place value of small numbers up to 10,000 was used to describe the problem solving learning model after the research was completed. At meeting 1, the test received a score of 26/52, or 50%. It was determined that the problem solving learning model had not been successfully used because the outcomes at meeting 1 did not make use of it. The next step is to increase reading and numeracy. Students are able to comprehend the material presented when the problem solving learning model is used to treat them. This treatment involves giving them instructional materials about numerical quantities up to 10,000. Additionally, posttesting students' learning of mathematics after utilizing the problem solving learning model yielded a score of 44/52, representing 84.6% of the implementation of the learning process on the literacy and numeracy of grade IV students at SDN 640 Ponnori. Students who were taught using the problem-solving learning model showed superior learning results in reading and numeracy than those who were not taught using the approach.

The findings of hypothesis testing or T tests utilizing statistical analysis for social science SPSS version 25 show how the problem solving learning approach affected the literacy and numeracy of fourth grade pupils at SDN 640 Ponnori. If the computed T value exceeds the T table and the significance value is less than 0.05, it is considered that there is an influence.

The ability to comprehend quantitative data and use mathematical knowledge represented by numbers and symbols to solve real-world situations is known as numeracy literacy. The AKM (Minimum Completeness Assessment) is a test that the government administers. Students' numeracy literacy skills are evaluated with an exam in the AKM evaluation.

Students will thus become accustomed to handling challenges associated with daily life through the use of the problem-based learning approach, which includes the problem solving model. Nurcahyandi, Zulfikar Rafi, et al. (2022).

Additionally, the learning process that takes place in the field employing a problem-solving learning paradigm, where students are more involved in the learning process, demonstrates this.

The data analysis results demonstrate that the problem solving learning model has an impact on the literacy and numeracy of grade IV students at SDN 640 Ponnori. A sig value (2-tailed) <0.05 indicates that H0 is rejected and H1 is accepted, indicating that the problem solving learning model has an impact on literacy and numeracy.

## 4. CONCLUSIONS AND SUGGESTIONS

### Conclusion

The teacher observation sheet utilizing the problem-solving learning paradigm provides an overview of the reading and numeracy outcomes of the fourth-grade pupils at SDN 640 Ponnori. This is demonstrated by how engaged the students were in the learning process and how well the teacher observation sheet's components were implemented utilizing the problem-solving learning model, which earned an 86.6% score—in the very high category.

The results of the mathematical learning assessment after completing the pretest show that the class IV students of SDN 640 Ponnori have a good level of literacy and numeracy, as seen by their 1,360/19 score on the 10 description questions, which includes a percentage of 71.58. Complete the second test, the posttest, using the problem-solving learning model after completing the pretest. This is demonstrated by the posttest results, which fall into the extremely high category with a score of 1,658/19 out of 10 questions and a percentage of 88.68%.

The literacy and numeracy skills of grade IV pupils at SDN 640 Ponnori are impacted by the use of the problem-solving learning approach. The sig value illustrates this. The problem solving learning model is appropriate for usage to enhance literacy and numeracy learning outcomes because it

is known that there is a significant difference between learning results before and after applying it (2-tailed) <0.05.

**Suggestions**

As feedback, schools should think about including problem-solving learning materials into the curriculum as a way to help children who struggle with math. This will make learning more enjoyable and productive.

The findings of this study should serve as a basis for reflection for future researchers who wish to do similar research in order to enhance future studies.

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