



Effectiveness of RME assisted by story calendar media for elementary school students' mathematical literacy ability

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Abstract. The fact that students mathematical literacy ability are low is behind the need of learning model and media that are oriented toward mathematical literacy ability. This research aimed to determine the effectiveness of RME assisted by story calendar media in improving the mathematical literacy ability of grade VI students of SDN Plumbungan Pati. This research method used a quantitative pre-experimental type with one group pretest-posttest design, with sample is all grade VI students of SDN Plumbungan which totals 25 students. The results of the N-Gain test showed an increase in students mathematical literacy ability in the medium or quite effective category, while the results of the paired sample t test showed a significant difference in the average of the pretest and posttest. It can be concluded that RME assisted by story calendar media is quite effective in improving the mathematical literacy ability of grade VI students of SDN Plumbungan Pati. This research can be used for learning resources, especially the use of model and media that aim to improve students' mathematical

literacy ability. This research recommends that in the implementation of RME assisted by story calendar media, teachers can be more communicative to guide student learning activities. Teachers can also develop story calendar media on other materials, but still take into account the needs of students.

Introduction

Mathematical literacy is one of the domains measured in the Programme for International Student Assessment (PISA) study. Mathematical literacy is the capacity to formulate, apply, and comprehend mathematics in a range of contexts using mathematical logic as well as the utilisation of ideas, methods, information, and instruments to characterise, describe, and forecast a phenomena so as to help individuals to make judgments and decisions in the midst of 21st century society (OECD, 2023a). In summary, mathematical literacy is the capacity to use and utilise math in daily life situations in order to successfully solve problems (Kaize et al., 2024). The results of PISA 2018 and 2022 show a downward trend in the mathematical literacy ability of Indonesian students. Mathematical literacy scores were 379 and 366 respectively (OECD, 2019; OECD, 2023b). Furthermore, this scores is below the average of OECD countries which in PISA 2018 was 487 and PISA 2022 was 472 (OECD, 2019; OECD, 2023b).

The findings of the National Assessment (*AN-Asesmen Nasional*) demonstrate the mathematical literacy ability of Indonesian elementary school students nationwide. The findings of the 2022 AN

(*Asesmen Nasional*) show that the achievement of elementary school students in the AKM (*Asesmen Kompetensi Minimum*) for mathematical literacy or numeracy is in the medium category with 46.67% of students meeting competencies above the minimum (BSKAP, 2023). The findings of the 2023 AN (*Asesmen Nasional*) still show the achievement of the medium category with 62.62% of students meeting competencies above the minimum (BSKAP, 2024).

The results of a preliminary research at SDN Plumbungan in the period of October 14, 2024 – October 16, 2024 show the low mathematical literacy ability of grade VI students. Judging from the results AKM Numeracy Class show an average score of 48.5. In addition, the results of the mid test (*Sumatif Tengah Semester*) of mathematics in the odd semester of 2024/2025 showed that all students did not meet the standar score (*Kriteria Ketercapaian Tujuan Pembelajaran*) of 70. From the analysis of the STS questions, these questions represent aspects of mathematical literacy. Aspects of mathematical literacy include process indicators, content categories, and mathematical context categories (OECD, 2023a). Thus, students have not mastered the process, content, and context of mathematics. In addition, findings from class teacher interviews reinforce the reality of low mathematical literacy ability of grade VI students of SDN Plumbungan. The teacher said that students tend to have difficulty in solving mathematics questions based on contextual problems. They have difficulty understanding problems, identifying information, and converting it into mathematical form. In this case, students not fulfilled the mathematical literacy indicators.

OECD (2023a) explain indicators of mathematical literacy include: 1) recognising the mathematical components of contextual issues, 2) translating contextual problems in mathematical language, 3) creating and putting into practice plans to solve issues, 4) utilising mathematical frameworks, facts, rules, and algorithms to solve issues, 5) interpreting mathematical findings to the problems setting, 6) assessing how sensible mathematical findings are in light of the problems setting. Strengthened with observational findings indicate that the application of mathematics learning in grade VI of SDN Plumbungan generally only relies on lecture method. Such learning results in students becoming unenthusiast. There is very little usage of media and learning model, so the learning process becomes monotonous. There has been no effort from teachers to utilize learning models and media that lead to the fulfillment of students' mathematical literacy ability. Therefore, students' mathematical literacy ability are less supported during the learning process. Considering the issues raised by the preliminary research findings, learning efforts that are oriented to students mathematical literacy ability are needed (Purnadewi & Widana, 2023). One of them is through the application of a learning model whose steps are related to aspects of mathematical literacy (Abidin et al., 2023). The selection of learning models must pay attention to the situation and conditions of the classroom as well as the needs of students (Norlita et al., 2024; Widana et al., 2024).

Realistic Mathematics Education (RME) is one of the learning models focused towards mathematical literacy ability. RME has an important and beneficial influence on students mathematical literacy ability (Putri et al., 2024). RME is a learning theory in mathematics based on Hans Freudenthal thought that mathematics is a human activity (Catrining & Widana, 2018). Real problems or that can be reached by students imaginations are used as a starting point for learning to come up with mathematical concepts (Hasan, 2023). The RME stages in learning are in the form of leveling which consists of 4 leveling stages, namely the situational stage, the referential stage, the general stage, and the formal stage (Gravemeijer, 1994).

There are several researches on the effectiveness of RME on mathematical literacy ability. Ralmugiz & Kusumawati (2020) found that there was a difference in the average mathematical literacy ability of grade VIII secondary school students before and after the implementation of RME. Sudi et al. (2022) supported that RME caused the mathematical literacy ability of grade VIII secondary school students in the experimental class to be better. Zaki et al. (2024) found that RME was effective on

the mathematical literacy ability of grade VII secondary school students in the experimental class. The shortcomings of some of these researches are that there is still a lack of research on the population at the elementary school level. In addition, efforts to integrate RME with learning media that are really designed to improve students' mathematical literacy ability have not been carried out.

Story calendar media is a media choice that can be integrated with RME to improve mathematical literacy ability. A story calendar is a calendar-shaped media that contains stories in the context of a certain scientific field to help students build their understanding and ability of the material taught (Abidin, 2018). Furthermore, Abidin (2018) stated that the story calendar learning media has the main characteristic, which resembles a wall calendar. This means that the story calendar media at least uses A3 paper size so that it can be read clearly. In addition, the number of pages is between 4-12 pages which in a given context can be adjusted according to needs. Technically, the binding of a story calendar is also similar to a wall calendar so the way to open it is upwards. The composition of the content is adjusted to the scientific context to be taught. For example, the story calendar media can contain stories of contextual problems, key concepts or practical steps for solving problems that can help students build their understanding.

Several studies have proven the benefits of story calendar media in certain scientific fields. In the context of the language field, for example, the story calendar media can be used to improve narrative writing ability (Mustadi & Irvan, 2021). Story calendar media can also be used to strengthen students characters through the stories in it (Rokhmani & Suhardi, 2021). The two researches used story calendar media with two main components, namely the story component and the activity guide. Meanwhile, in the field of Pancasila Education, the story calendar has proven to be feasible in terms of its effectiveness in improving the learning outcomes of elementary school students regarding the history of Pancasila formulation (Aditiyarini et al., 2023). However, in the research, the design of the story calendar media only contains key concepts related to the history of the formulation of Pancasila.

The novelty of the story calendar media in this research emphasizes three important components in it which are designed for each learning material. The first component is a realistic problem story sheet that is adapted to the students' daily context. The second component is an activity guide sheet to help students step in solving problems. The third component is the existence of worksheets to strengthen the mathematical knowledge that students have acquired. The design uses A3 paper and the help of Canva software to create image illustrations. All sheets are made into one with the spiral binding technique so that the final shape resembles a wall calendar. The technique is used in groups so that each group gets a story calendar media to support their learning activities.

Based on the problems that have been described, the question of this research is how is the level of effectiveness of RME assisted by story calendar media to improve students mathematical literacy ability? The hypothesis of this research is that RME assisted by story calendar media is effective in improving students' mathematical literacy ability. The purpose of this research is to determine the effectiveness of RME assisted by story calendar media in improving the mathematical literacy ability of grade VI students of SDN Plumbungan Pati.

Method

This research used a pre-experimental quantitative type with one-group pretest-posttest design. Pre-experimental research only involves experimental groups (Rukminingsih et al., 2020). One group pretest-posttest design involved pretesting and posttesting in one experimental group (Sugiyono, 2023). The way this research was designed is shown in table 1.

Table 1. One Gorup Pretest-Posttest Design

Pretest	Treatment	Posttest
O ₁	X	O ₂

Source: [Sugiyono \(2023\)](#)

O₁ = Pretest is used to measure students' mathematical literacy ability before applying RME assisted by story calendar media. X = Treatment in the form of the application of RME assisted by story calendar media with materials on decomposing and constructing cubes and blocks, spatial visualisation, and location in a gridded system. O₂ = Posttest is used to measure students' mathematical literacy ability after applying RME assisted by story calendar media.

This research was implemented in the 2024/2025 school year at SDN Plumbungan which is located in Gabus district, Pati, Central Java, Indonesia. The population was all grade VI students as many as 25 students. The sampling technique used was saturated sampling so that the sample was 25 grade VI students. Data collection through observation, interviews, documentation, and tests. The tests provided consists of a pretest and a posttest with each consisting of 15 questions. The form of the questions used adopts the usual multiple-choice, complex multiple-choice, matchmaking, short fill-in, and description types.

The research instruments used observation sheets, interview sheets, documentation, and tests. In addition, there were teaching module and story calendar media. The validity of the instrument used a validity of the content. Content validity is a type of logical validity of an instrument based on expert judgment ([Lestari & Yudhanegara, 2018](#)). The validated instruments included pretest and posttest questions, teaching modules, and story calendar media. The validator consisted of 2 expert lecturers and 1 practitioner (class teacher). The assessment resulted from the validators were calculated as a percentage, then categorised as valid based on table 2.

Table 2. Categories of Content Validity

Validity Percentage (%)	Category
0–20	Invalid
21–40	Less valid
41–60	Quite valid
61–80	Valid
81–100	Highly valid

Source: [Asri & Dwiningsih \(2022\)](#)

The data analysis technique used descriptive statistic, N-Gain test, and paired sample t test. SPSS software is used to assist with data analysis procedures. The results of descriptive statistical analysis became a reference to determine the average category of students' mathematical literacy ability before and after the implementation of RME assisted by story calendar media. The average category of mathematical literacy ability followed the provisions in table 3.

Table 3. Categories of Mathematical Literacy Ability

Score	Category
Score $\geq$ 80	High
$60 \leq$ Score $<$ 80	Medium
Score $<$ 60	Low

Source: [Mahiuddin et al. \(2019\)](#)

The N-Gain test is used to see the category of improving students' mathematical literacy ability. The results of the N-Gain test are interpreted as obtaining N-Gain Score and N-Gain Percent following the interpretation of the criteria shown in table 4.

Table 4. Interpretation of N-Gain Criteria

N-Gain Score	Interpretation	N-Gain Percent (%)	Interpretation
$N\text{-Gain} \geq 0.70$	High	> 76	Effective
$0.30 < N\text{-Gain} < 0.70$	Medium	56 – 75	Quite effective
$N\text{-Gain} \leq 0.30$	Low	40 – 55	Less effective
		< 40	Ineffective

Source: [Lestari & Yudhanegara \(2018\)](#)

Before doing the paired sample t test, the data is tested for normality first with the Shapiro-Wilk test. The null hypothesis and the alternative hypothesis of the normality test are H_0 : normally distributed data and H_a : data is not normally distributed. The decision-making provisions if $\text{sig} \leq 0.05$ so H_0 rejected and H_a accepted, if $\text{sig} > 0.05$ so H_0 accepted and H_a rejected.

After meeting the normality requirements, the data was tested with a paired sample t test. The null hypothesis and the alternative hypothesis of the paired sample t test are H_0 : there was no significant difference in the average mathematical literacy ability of students before and after the implementation of RME assisted by story calendar media and H_a : there was a significant difference in the average mathematical literacy ability of students before and after the implementation of RME assisted by story calendar media. The decision-making provisions if $\text{sig} (2\text{-tailed}) \leq 0.05$ so H_0 was rejected and H_a was accepted, if $\text{sig} (2\text{-tailed}) > 0.05$ so H_0 was accepted and H_a was rejected.

Results and Discussion

Pretest and posttest questions, teaching modules, and story calendar media are validated first with content validity techniques based on expert judgement. The outcomes of the validator assessment shown in table 5.

Table 5. Content Validity Results

Validator	Pretest and Posttest	Category	Teaching Modules	Category	Story Calendar Media	Category
1.	94%	Highly valid	94%	Highly valid	96%	Highly valid
2.	79%	Valid	79%	Valid	96%	Highly valid
3.	94%	Highly valid	92%	Highly valid	95%	Highly valid

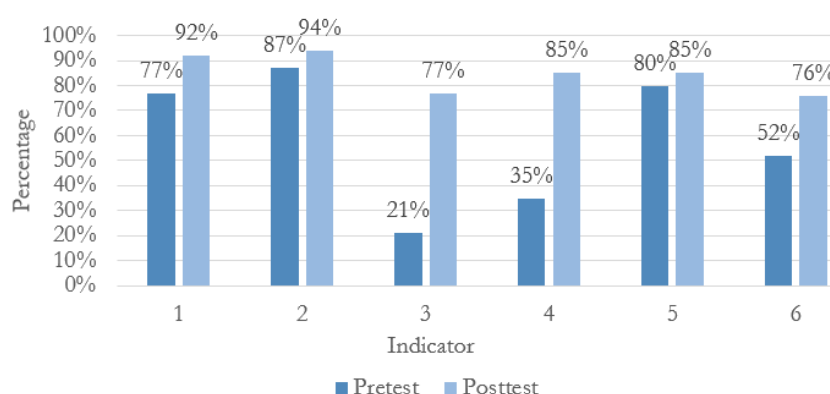
According to table 5, it is evident that validators assessments of pretest and posttest, teaching modules, and story calendar media are very good. Therefore, both pretest and posttest, teaching modules, and story calendar media are valid and workable for use in the process of gathering data.

Data was gathered in the period of February 4, 2025 – February 11, 2025 in grade VI of SDN Plumbungan. It consisted of five meetings with activities: 1) pretest, 2) learning treatment (with RME assisted by story calendar media) on constructing and decomposing cubes and blocks, 3) learning treatment on spatial visualisation material, 4) learning treatment on location material in gridded system, and 5) posttest. The findings of descriptive statistics of pretest and posttest mathematical literacy are displayed in table 6.

Table 6. Descriptive Statistics of Pretest and Posttest Mathematical Literacy

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	25	36	88	61.80	15.843
Posttest	25	67	97	85.24	9.324
Valid N (listwise)	25				

According to table 6, the average mathematical literacy ability of students in the pretest was 61.80 in the medium category, while in the posttest it was 85.24 in the high category. It was seen that the average mathematical literacy ability of students improved after learning using RME assisted by story calendar media. RME assisted by story calendar media succeeded in increasing the average mathematical literacy ability of students by 23.44 from the pretest of 61.80 to the posttest of 85.24. An increase also occurred on the percentage of each mathematical literacy ability indicators accomplishment. The increase in the achievement of each indicator of mathematical literacy ability can be seen in image 1.

**Image 1.** Percentage of Achievement of Mathematical Literacy Indicators

Using image 1, it is evident that the achievement of each indicator has increased. Indicators 3 and 4 experienced the highest increase in achievement among other indicators. Indicator 3 increased by 56% from 21% in pretest to 77% in posttest, and indicator 4 increased by 50% from 35% in pretest to 85% in posttest. Thus, it can be interpreted that RME assisted story calendar media is able to help students meet the indicators of mathematical literacy ability, especially in indicators 3 and 4, namely creating and putting into practice plans to solve issues and utilizing mathematical frameworks, facts, rules, and algorithms to solve issues.

The analysis of the data of the pretest and posttest results was continued with the N-Gain test. It begins by calculating the N-Gain Score and N-Gain Percent of each student. Furthermore, it is analyzed descriptively so that the findings of the N-Gain test are as displays in table 7.

Table 7. N-Gain Test Findings

	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	25	.14	.92	.6160	.18182
NGain_Percent	25	14	92	61.60	18.182
Valid N (listwise)	25				

According to table 7, The minimum N-Gain Score is 0.14 or the N-Gain Percent is 14%, while the maximum N-Gain Score is 0.92 or in the N-Gain Percent is 92%. The average N-Gain Score

of 0.6160 indicates an increase in the mathematical literacy ability of students in the medium category. Meanwhile, the average N-Gain Percent of 61.60% shows that the treatment in the form of learning using RME assisted by story calendar media is quite effective on students' mathematical literacy ability. It can be said that RME assisted by story calendar media is has a positive impact on students' mathematical literacy ability because able to improve students' mathematical literacy ability in the category of medium or quite effective improvement.

Data analysis continued with a normality test using Shapiro-Wilk because of the small number of samples. The goal is to find out the normality of pretest and posttest results. Table 8 displays the findings of the pretest and posttest normality test.

Table 8. Pretest and Posttest Normality Test Findings

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.109	25	.200*	.943	25	.170
Posttest	.170	25	.061	.920	25	.052

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

According the table 8, the significance value of the Shapiro-Wilk test on pretest data is $0.170 > 0.05$ so that the pretest data is normally distributed. Meanwhile, the significance value of the posttest data was $0.052 > 0.05$ so that the posttest data was normally distributed.

The findings of the pretest and posttest have met the criteria of data normality so that it is possible to use the paired sample t test. The goal is to find out the difference in the average mathematical literacy ability of students before and after the learning treatment with RME assisted by story calendar media. Table 9 displays the findings of the paired sample t test.

Table 9. Paired Sample t-test Findings

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
					Lower	Upper		
Pair 1	Pretest - Posttest	-23.440	10.397	2.079	-27.732	-19.148	-11.273	.000

According the table 9, the paired sample t test showed an average difference of 23.44. The significance can be reviewed from the sig (2-tailed) of $0.000 \leq 0.05$ so that it is H_0 rejected and H_a accepted. Thus, it can be decided that there is a significant difference in the average mathematical literacy ability of students before and after the implementation of RME assisted by story calendar media.

Based on the presentation of the results of data analysis, RME assisted by story calendar media improves students' mathematical literacy ability. Average pretest and posttest an increase of 23.44. In line with the findings of the research by [Lubis \(2023\)](#) that the mathematical literacy ability of elementary school students become better after learning with RME. Improvements also occur in every indicator of mathematical literacy.

The findings in this research demonstrates that indicators 3 and 4 have the highest increase in achievement compared to other indicators. This is the impact of RME intervention assisted by

story calendar media. These results are consistent with previous research, [Irham \(2020\)](#) found that RME offers advantages influence on students mathematical literacy ability. Additionally, [Abidin et al. \(2023\)](#) asserted that the learning model whose steps are related to the aspect of mathematical literacy can improve students mathematical literacy ability. The existence of activity guides on the story calendar media is an advantage that can help students take steps in solving realistic problems through mathematical planning, mathematical calculations, and more structured image modeling. [Ningtyas \(2019\)](#) claimed that the existence of the right learning media can help student activities to achieve their learning goals. The story calendar media motivates students to be more participatory during learning. High motivation allows students to analyse problems and apply the right calculations to find answers ([Amelia et al., 2023](#)).

The statistical findings in this research show that RME assisted by story calendar media has a favorable role on enhancement of students' mathematical literacy ability. It can be seen from the results of the average N-Gain Score of 0.6160 or in N-Gain Percent of 61.60%. This shows the level of effectiveness of RME assisted by story calendar media to improve students' mathematical literacy ability is in the medium or quite effective category. In addition, paired sample t test with sig (2-tailed) of $0.000 \leq 0.05$ indicates there is a significant difference in the average mathematical literacy ability of students before and after the implementation of RME assisted by story calendar media. These findings are consistent with previous research by [Ayunis & Dorisno \(2022\)](#) which found that RME makes students mathematical literacy abilities better. [Lusiana et al. \(2024\)](#) also found that RME was quite effective on students' mathematical literacy ability.

The overall results are inseparable from learning activities that integrate RME and story calendar media. Learning activities that integrate RME and story calendar media in this research have been proven to improve students' mathematical literacy ability. The learning activities in each material through RME are assisted by story calendar media using iceberg as seen in image 2, image 3, and image 4.

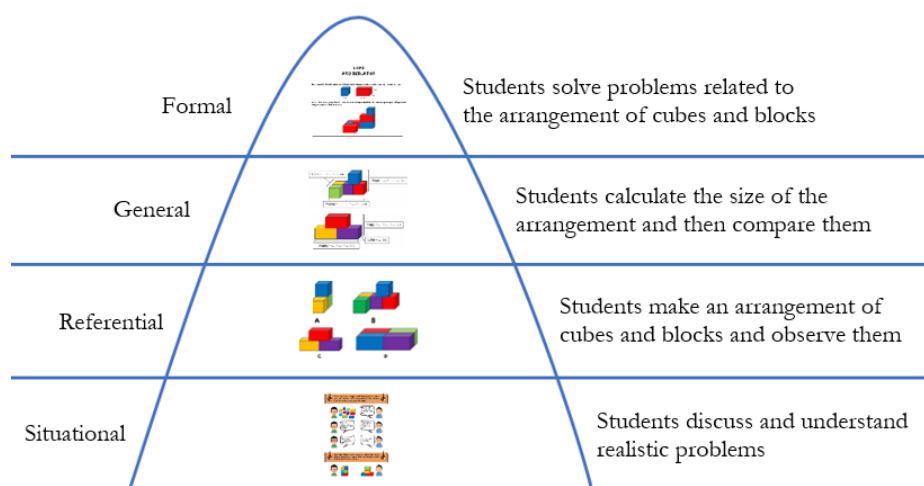


Image 2. Learning Activities on Constructing and Decomposing Cubes and Blocks

Based on image 2, the learning of constructing and decomposing cubes and blocks carried out in groups. Learning starts from the situational stage by giving students with realistic problem in the story calendar media related to the arrangement of cubes and blocks. Students discuss realistic problems with their groups while teacher act as triggers by asking questions about what mathematical aspects students know from the realistic problem. In the referential stage, through the activity guide in the story calendar media, students are directed to make an arrangement of cubes and blocks and then observe them. At the general stage, students are involved in more

complex mathematical modeling. Through the activity guide in the story calendar media, students calculate the length, width, and height of several cube and block arrangements and compare them. At the formal stage, through worksheets in the story calendar media, students are directed to solve problems related to constructing and decomposing cubes and blocks. At this stage, students are also guided to make presentations and class discussions.

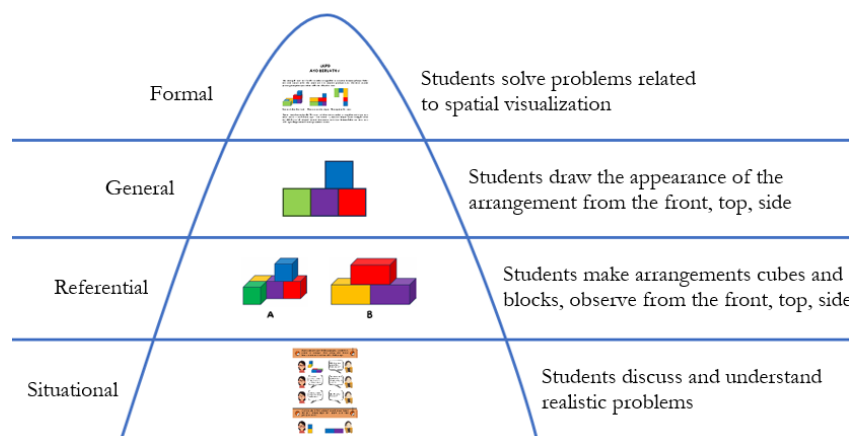


Image 3. Learning Activities on Spatial Visualisation Material

Based on image 3, the learning of spatial visualisation material carried out in groups. Learning starts from the situational stage by giving students with realistic problem in the story calendar media related to spatial visualisation. Students discuss realistic problems with their groups while teacher act as triggers by asking questions about what mathematical aspects students know from the realistic problem. In the referential stage, through the activity guide in the story calendar media, students are directed to make an arrangement of cubes and blocks and then observe them from the front, top, and side. At the general stage, students are involved in more complex mathematical modeling. Through the activity guide in the story calendar media, students make pictures of the appearance of the arrangement of cubes and blocks from the top, front, and side. At the formal stage, through worksheets in the story calendar media, students are directed to solve problems related to spatial visualisation material. At this stage, students are also guided to make presentations and class discussions.

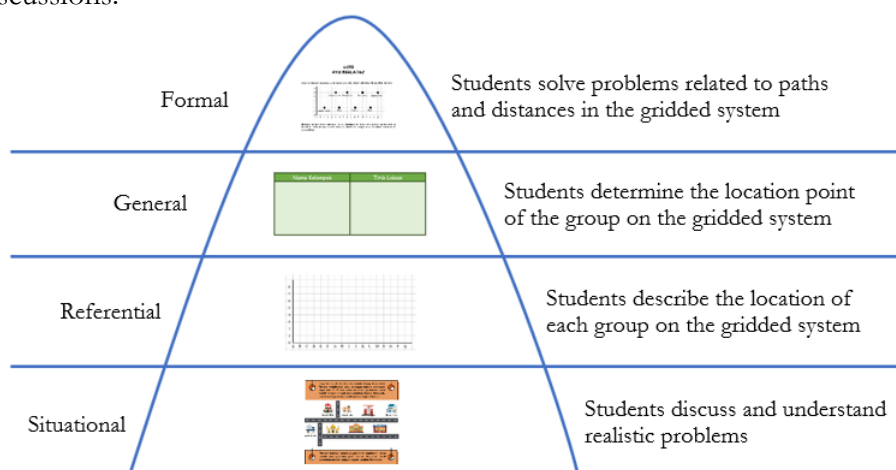


Image 4. Learning Activities on Location Material in Gridded Systems

Based on image 4, the learning of location material in gridded system carried out in groups. Learning starts from the situational stage by giving students with realistic problem in the story

calendar media related to location material in gridded system. In the referential stage, through the activity guide in the story calendar media, students are directed to observe the position of each group in the classroom and then describe it on a gridded system. At the general stage, students are involved in more complex mathematical modeling. Through the activity guide in the story calendar media, students determine the location point of each group on a gridded system with writing rules (letters, numbers), for example: Group 1 = (A, 2). At the formal stage, through worksheets in the story calendar media, students are directed to solve problems related to location material in the gridded system, namely determining paths and distances. At this stage, students are also guided to make presentations and class discussions.

The integration of RME with story calendar media as has been done in this research is able to meet the demands of learning oriented towards mathematical literacy ability. Students are active in their groups and can understand the math material they are studying well. This is because the story calendar media has a design that includes illustrations and narratives in order to make it easier students understanding of the subject matter being taught and understand how the learning flow is carried out. According to [Maulida et al. \(2024\)](#), studentss can better comprehend abstract information with the help of appropriate learning media. Additionally, RME syntax or stages make students become more mathematically literate ([Irham, 2020](#)).

At the situational stage, students are given realistic problems as a starting point for learning. The starting point of realistic problems can improves students comprehension of abstract mathematics material during the learning process ([Setyawan & Wijaya, 2022](#)). During learning, students can understand the realistic problems presented in the story calendar media well. Students are also able to identify the mathematical aspects of these realistic problems. Students actively express their opinions on the mathematical aspects they know from the realistic problems presented in the story calendar media.

At the referential stage, students engage in simple mathematical modeling. Simple mathematical modeling ability are the basis for students to be able to organize appropriate strategies for the problem-solving process ([Istiqomah et al., 2021](#)). At this stage, students are directed to translate realistic problems into mathematical language through the activity guide on the story calendar media. Students are able to arrange cubes and blocks and then observe them, know what the arrangement of cubes and blocks looks like from a certain side, and are able to describe the location of an object in a gridded system. Students are able to work with their groups during this simple mathematical modeling process.

At the general stage, students engage in more complex mathematical modeling for problem solving. The general stage in RME encourages students to create more abstract mathematical modeling that leads to realistic problem solving ([Rangkuti, 2019](#)). At this stage, students are directed to design strategies and use mathematical measures to solve problems through the activity guide on the story calendar media. Students actively exchange opinions with their group friends. This makes students are logically able to compare the length, width, and height of several cubes and block arrangements, make precise spatial visualisation s, and determine location points with appropriate writing rules using (letters, numbers) on a gridded system. Similarly, [Windari & Amir \(2024\)](#) explain that RME influences students logical reasoning in making modeling for problem solving. [Widana \(2021\)](#) claimed that RME can enhance students' capacity to solve problems.

At the formal stage, students are involved in formalizing their proficiency in mathematics. At this stage, students are instructed to interpret and assess the outcomes of their mathematical answers in relation to the problems context. Students are also directed to strengthen the mathematical knowledge that has been gained through contextual question exercise on the worksheets. Students

confidently use the mathematical knowledge they have acquired to finish a worksheet. Students actively work on the contextual question exercise on the worksheet carefully and earnestly. In line with the statement [Nisa & Arliani \(2023\)](#) that students mathematical literacy ability are influenced by self-confidence. Students can also communicate the mathematical ideas they use during class presentations and discussions and are capable of reacting to the results of other groups work. Students also dare to ask and answer questions during class discussions. According to the statement [Palinussa et al. \(2021\)](#) that RME can sharpen students' mathematical communication.

The description above shows that RME assisted by story calendar media can create a learning atmosphere that supports the enhancement of students' mathematical literacy ability. According to the statement [Muhaimin et al. \(2024\)](#) that external factors such as the learning process affect students mathematical literacy ability. RME assisted by story calendar media facilitates students' comprehension of the content they have learned, involve students in problem-solving, and makes students more active and confident during learning. Consistent with the statement that RME facilitates students comprehension of ideas in mathematics ([Fahrudhin et al., 2018](#)), improves problem-solving ability ([Nugraheni & Marsigit, 2021](#)), and affect the increase in student motivation ([Fauzi et al., 2024](#)). The selection of story calendar media to support the implementation of RME has been appropriate so that it can support upgrades students mathematical literacy ability. In line with the statement, [Farihah \(2021\)](#) asserted that the accuracy of the selection of learning media allows information, messages, or materials to be conveyed effectively and efficiently.

Based on overall results, learning activities with RME assisted by story calendar media has succeeded in improving students' mathematical literacy ability in each indicator. There are several shortcomings that occur during the learning process such as some students who do not want to contribute to their group, lack of confidence, and lack of understanding of how the learning procedure is carried out. This causes the increase in mathematical literacy ability in some of these students to be less than optimal individually. The shortcomings that occur during the learning process demand the importance of the role of teachers so that RME learning assisted story calendar media can improve students' mathematical literacy ability more optimally. This is because during learning students still need to be given more detailed guidance and direction. The strategy that can be used is for teachers to be more communicative. The communicative role of teachers is for example by giving instructions to students on how to participate in discussions and triggering students to express their understanding by giving them questions ([Halimah, 2020](#)). In addition, learning must empower students and provide open opportunities for students to think, engage in activities in finding and developing mathematical ideas, namely by viewing that students are not learning objects but learning subjects so that they can improve their mathematical literacy ability ([Marlina, 2021](#)).

Thus, the results of this research can be used for learning resources, especially the use of model and media that aim to improve students' mathematical literacy ability. However, it should be noted that the design of the story calendar media needs to be adjusted to the needs of the subject matter to be taught. The use of story calendar media requires consideration of the suitability between the material and the students class level with realistic problem designs, activity guides, and worksheets. This is certainly a challenge for teachers' creativity and sensitivity to the needs of their students. In addition, it is necessary to note the limitations of this research because small population dan there is no control class so that it is very possible that the increase in mathematical literacy ability is also influenced by other variables during learning. Other variables such as teachers teaching skills and students psychological factors are very likely to influence during the learning process.

Conclusion

Based on the result and discussion that have been described, it can be seen the level of effectiveness of RME assisted by story calendar media to improve students' mathematical literacy ability is in the medium or quite effective category. This is based on the results of the N-Gain test which showed an N-Gain Score of 0.6160 or in N-Gain Percent of 61.60%. In addition, there are significant differences in students' mathematical literacy ability before and after the implementation of RME assisted by story calendar media. This is based on the results of the paired sample t test which shows sig (2-tailed) of $0.000 \leq 0.05$. Thus, it can be concluded that RME assisted by story calendar media is quite effective in improving the mathematical literacy ability of grade VI students of SDN Plumbungan Pati. This research can be used for learning resources, especially the use of model and media that aim to improve students' mathematical literacy ability. This research recommends that in the implementation of RME assisted by story calendar media, teachers can be more communicative to guide student learning activities. Teachers can also develop story calendar media on other materials, but still take into account the needs of students. In addition, due to the limitations of this research that does not involve a control class, it is hoped that there will be amore comprehensive research on other variables that may affect the improvement of students' mathematical literacy ability in RME-based learning.

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