

**THE EFFECT OF TRAINING ON LITERACY AND NUMERACY COMPETENCIES OF EDUCATORS
(Case Study of Integrated Contextual Training Model through Quality Reading Books at KKG Cluster VI
Panglima Batur, Pandih Batu District)**

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ABSTRACT

This study aims to analyze the influence of the integrated contextual training model through quality reading books on improving the literacy and numeracy competence of educators in KKG Cluster VI Panglima Batur, Pandih Batu District. Using a quantitative approach with a pre-experimental pretest-posttest design, this study measures the improvement of educators' competencies before and after participating in the training. This study has a sample of 42 educators. Data collection techniques are carried out using tests, as well as data analysis using the paired sample t-test, homogeneity test, and data normality. The results of the analysis showed a significant increase in literacy competence, with an average pretest of 57.40 and a posttest of 97.69, as well as numeracy competence, with an average of 64.40 pretest and a posttest of 98.24. The normality test shows that the data is distributed normally, while the variance homogeneity test indicates the similarity of variance between the data groups. Paired t-test analysis showed significant differences between pretest and posttest in both literacy ($t = 38.819, p < 0.05$) and numeracy ($t = 33.020, p < 0.05$), confirming the effectiveness of the applied training model. These results show that the integration of quality reading books in contextual training is able to improve the understanding and skills of educators in teaching literacy and numeracy more effectively. Therefore, it is recommended that this training model can be applied more widely with ongoing mentoring to ensure optimal impact in classroom learning.

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INTRODUCTIONS

Basic education in Indonesia still faces various challenges in improving students' literacy and numeracy competencies. Based on the results of the Programme for International Student Assessment (PISA) survey, Indonesia shows low achievement in both aspects compared to other countries, which indicates a gap in the quality of learning at the basic education level (OECD, 2019). One of the main factors contributing to low literacy and numeracy

competencies is limited access to quality educational resources, especially in rural and remote areas. The availability of quality reading books and relevant numeracy learning tools is still very limited, so the learning process is less than optimal (Ministry of Education and Culture, 2021). The results of the 2021 National Assessment also show that only 30% of elementary school students are able to achieve the minimum competency in reading literacy, while in the aspect of numeracy the percentage is lower, which is 23% (Pusmenjar, 2021). This condition is further exacerbated by the low availability and utilization of reading books that are in accordance with the level of student development, especially in schools in remote areas (Indonesian Publishers Association, 2022). The lack of quality education resources also exacerbates the gap in learning quality between urban and rural schools, requiring more comprehensive interventions to improve the quality of basic education in Indonesia.

Literacy and numeracy competencies are essential basic skills in the education system, as they function as the main foundation for learning in various fields. Literacy includes not only the ability to read and write, but also the skills to understand, evaluate, and interpret information from various types of texts, both printed and digital (UNESCO, 2020). Good literacy skills contribute to the improvement of students' academic achievement in various subjects, as it allows them to access, process, and communicate information effectively (World Bank, 2021). Meanwhile, numeracy refers to an individual's capacity to understand and apply mathematical concepts in daily life, such as making calculations, interpreting data, and making number-based decisions (Ministry of Education and Culture, 2022). A study conducted by the National Education Research Institute shows that the lack of numeracy skills can have an impact on difficulties in understanding economic, scientific, and technological concepts, which has implications for the competitiveness of Indonesia's human resources at the global level (LPPN, 2021). Improving literacy and numeracy competencies must be a top priority in national education policies so that students have better cognitive skills in facing the challenges of the 21st century.

The quality of education is highly dependent on the competence of educators in delivering material effectively, including in the fields of literacy and numeracy. However, many teachers, especially in remote areas, still face limitations in accessing professional training relevant to their needs. Based on the results of Priyono's research (2020), around 50% of teachers in rural areas feel that they do not have enough skills in teaching literacy and numeracy. One of the main causes of this problem is the lack of sustainable and needs-based training programs for teachers. Many of the trainings provided are general and not specific to the challenges faced by teachers in teaching in the classroom. Limited access to quality reading books and other learning resources also exacerbates this condition, hindering the development of more innovative and interactive teaching methods (Priyono, 2020).

Contextual-based training is a solution that can improve teachers' literacy and numeracy competencies because they are more relevant to real conditions in the field. According to Rahmawati's (2023) research, a training approach that integrates learning materials with local social and cultural conditions can increase the effectiveness of the teaching and learning process. A hands-on practice-oriented training model using resources available in the school environment is able to strengthen teachers' understanding of teaching literacy and numeracy skills to students (Rahmawati, 2023). The use of quality reading books in training has also been proven to improve students' reading skills while enriching the teaching methods used by teachers. Teachers who have access to teaching materials that are appropriate to the curriculum and local context are more likely to be able to design learning strategies that are engaging and effective for their students.

Priyono's (2020) research also shows that training programs combined with hands-on practical sessions in the classroom can increase teachers' motivation and confidence in teaching. Teachers who receive practice-based training and ongoing mentoring tend to be more adaptive in implementing new learning strategies that suit the characteristics of their students. In addition, the integration of quality reading books in training not only improves students' reading and writing skills, but also helps teachers understand how to apply more effective learning techniques

(Rahmawati, 2023). The development of contextual-based training models that are tailored to the specific needs of teachers in remote areas is a strategic step in improving the quality of education in Indonesia.

The condition of education in Cluster VI Panglima Batur, Pandih Batu District, still faces various challenges that have an impact on the quality of learning, especially in the aspects of literacy and numeracy. Many teachers in the region still apply traditional teacher-centered learning methods and lack an interactive approach based on problem-solving. This is due to the lack of formal training they receive, so that more innovative teaching methods cannot be implemented optimally. In addition, access to quality reading books in schools in this cluster is also very limited, which results in low reading interest and literacy skills of students. Existing school libraries do not have a sufficient collection of books and are in accordance with the level of student development, and are not integrated in the learning process systematically. These limited resources cause students to be less familiar with reading materials that can improve their critical and analytical thinking skills. The lack of contextual numeracy teaching materials also hinders teachers in developing students' understanding of mathematical concepts that are applicable in daily life. Therefore, interventions in the form of increasing access to quality learning resources and contextual-based teacher training are urgent needs to improve literacy and numeracy competencies in the region.

The Government of Indonesia has initiated various programs to improve the competence of educators in the field of literacy and numeracy, one of which is through the National Literacy Movement (GLN). This program aims to instill a literacy culture in the school environment to improve students' reading, writing, and critical thinking skills. However, the implementation of GLN still faces various challenges, especially in less developed areas, such as limited educational resources, lack of access to quality reading materials, and lack of training for educators in implementing effective literacy learning methods (Rahmawati, 2023). In addition to GLN, the government also implements the Computer-Based National Assessment (ANBK) which functions to measure students' literacy and numeracy abilities nationally. The results of the assessment show that the achievement of literacy and numeracy competencies is still far from expectations, especially in areas with limited educational infrastructure, such as Pandih Batu District. Based on data from the Center for Education Assessment, only 30% of elementary school students are able to achieve the minimum competency in reading literacy, while in the aspect of numeracy the percentage is lower, which is 23% (Pusmenjar, 2021). This gap is caused by various factors, such as the lack of continuous training for teachers, the low availability of teaching materials that are in accordance with the curriculum, and the limited support facilities in schools in remote areas (Priyono, 2020). Therefore, a more comprehensive strategy is needed in the implementation of policies to improve educator competence, including the integration of contextual-based training and the use of quality reading books to support the effectiveness of literacy and numeracy learning in elementary schools.

This research contributes to improving the professionalism of educators through the development of contextual-based training models that are more relevant to the needs of teachers in remote areas. Training tailored to field conditions has been shown to be more effective in improving teaching competence, especially in literacy and numeracy (Suryani et al., 2022). In addition, this research also plays a role in providing solutions to the limited access of educators to innovative learning methods, which have been the main obstacles in improving the quality of education in rural areas (Wijayanti & Prasetyo, 2021). This research is expected to contribute to improving the quality of education in Pandih Batu District by strengthening students' literacy and numeracy skills through a more interactive learning strategy based on quality reading books. Studies show that these basic skills have a direct effect on students' academic achievement and their readiness to face more complex learning challenges (Handayani, 2023). With the increase in the capacity of educators to implement more effective learning methods, it is hoped that there will be a significant improvement in student learning outcomes and an improvement in the overall quality of education.

Literature Review

Contextual-Based Training in Improving Educator Competencies

Contextual-based training is a learning approach that relates material to the real conditions faced by educators in teaching practice. This training model is designed to improve the effectiveness of learning by adapting teaching methods to the specific needs of learners and the school environment. According to Rahmawati (2023), contextual-based training provides opportunities for educators to understand and apply more adaptive teaching techniques, especially in literacy and numeracy learning. This approach also allows teachers to develop more applicative teaching skills because they are based on hands-on experience in teaching students in the classroom. A study conducted by Priyono (2020) shows that teachers who take part in contextual-based training are better able to integrate innovative learning strategies in the teaching and learning process, thus having a positive impact on student involvement in learning.

The effectiveness of contextual-based training in improving educator competence is also supported by various studies showing that this model can reduce the gap between theory and practice in the field. Suryani et al. (2022) stated that training based on real conditions in schools can help teachers overcome learning challenges faced daily, including in the delivery of literacy and numeracy materials. In addition, this training is also more relevant than conventional training methods which tend to be theoretical and pay less attention to specific conditions in remote areas (Wijayanti & Prasetyo, 2021). By applying a contextual-based training model, teachers not only gain a better understanding of the concepts of literacy and numeracy, but also have the skills to adapt learning strategies according to the characteristics of students and their school environment.

Quality Reading Books for Literacy and Numeracy

Quality reading books have an important role in improving literacy and numeracy competence, especially in providing more systematic references and teaching materials. According to Handayani (2023), the availability of books that are in accordance with the curriculum and learning needs can help teachers understand various teaching methods that are more innovative and effective. In addition, quality reading books can also improve reading and critical thinking skills, which ultimately impacts their ability to convey material to students. A study by Pusmenjar (2021) shows that teachers who have access to quality reading books are better able to develop interesting learning strategies, both in literacy and numeracy aspects. This is because books that are compiled with high academic standards can provide broader insight to educators in designing teaching materials that are more contextual and based on student needs.

In addition to contributing to improving the competence of educators, the use of quality reading books in training also plays a role in enriching learning resources in schools. Research by Wijayanti & Prasetyo (2021) shows that schools with a more diverse collection of reading books tend to have higher literacy and numeracy achievement compared to schools that have limited access to teaching materials. This shows that the integration of quality reading books in teacher training not only has an impact on improving teaching skills, but also provides direct benefits for students in understanding the concepts of literacy and numeracy more deeply. Therefore, it is important for teacher training programs to optimize the use of quality reading books as the main learning resource in increasing the effectiveness of learning in elementary schools.

RESEARCH METHODS

Approaches and Types of Research

This study uses a quantitative approach because it aims to objectively measure the influence of contextual-based training on literacy and numeracy competencies of educators. The quantitative approach allows for statistically

testable numerical data-driven analysis to ensure the effectiveness of the training model applied. The type of research used is pre-experimental with a pretest-posttest design. This method was chosen to test the cause-and-effect relationship between the free variable, namely contextual-based training integrated with quality reading books, and the bound variable, namely the literacy and numeracy competence of educators. In this design, measurements were taken before and after treatment to see the direct impact of the training provided.

Place and Time of Research

This research was conducted in the Teacher Working Group (KKG) of SD Gugus VI Panglima Batur, Pandih Batu District, Pulang Pisau Regency, Central Kalimantan Province. The research period was carried out from January 2025 to March 2025.

Research Variables

This research has two main variables. The independent variable (independent) is a contextual-based training model integrated with quality reading books, which is the main intervention in this study. This model is designed to provide a more applicative learning experience for educators to increase the effectiveness of literacy and numeracy teaching. The dependent variables (bound) in this study are literacy and numeracy competencies of educators. Literacy competence includes the ability to understand, teach, and apply literacy concepts, while numeracy competencies include understanding basic mathematical concepts and their application in learning. The measurement of these variables is carried out through pretest and posttest to find out the changes that occur after the training is given.

Population and Sample

The population in this study is all educators who are members of the KKG of SD Cluster VI Panglima Batur, which is 42 people. The entire population was sampled using saturated sampling techniques, because the number of participants was relatively small and it was possible to carry out a comprehensive intervention. The use of saturated sampling techniques aims to obtain more accurate and representative results for the entire population, so that every educator in this KKG has an equal opportunity to receive training and have the results evaluated. This method also ensures that training interventions can be applied effectively in the environment that is the focus of the research.

Data Collection Techniques

The data in this study was collected through three main techniques, namely tests, observations, and questionnaires. The test is used to measure the level of literacy and numeracy competency of educators before and after training. The test instrument includes questions designed to assess understanding, skills, and the application of literacy and numeracy concepts in learning. Observations were made to see the involvement of participants during training, the use of quality reading books in the learning process, and the interaction between educators and facilitators. In addition, the questionnaire was used to collect additional data regarding the perception, satisfaction, and effectiveness of training from the perspective of the participants. The combination of these three techniques provides more comprehensive data on the impact of training on improving educator competence.

Data Analysis Techniques

Data analysis was carried out by statistical tests using the Kolmogorov-Smirnov normality test and the Levene's test homogeneity test to ensure that the data obtained had an appropriate distribution for further analysis. If the data are normally distributed, the Paired Sample T-Test parametric test is used to measure the significance of differences before and after training. If the data is not normally distributed, then a non-parametric Wilcoxon Signed

Rank Test is used. This statistical test aims to find out the extent to which contextual-based training has a significant influence on literacy and numeracy competencies of educators. With this approach, the research can provide conclusions based on scientific evidence regarding the effectiveness of the training model applied in the KKG Cluster VI Panglima Batur.

RESEARCH RESULTS

Respondent Characteristics

The characteristics of the respondents in this study play an important role in providing an initial overview of the social and demographic conditions of the Posyandu cadres who are the subject of the research. Understanding the characteristics of respondents, such as age, employment status, education level, and number of children, can be helpful in analyzing how these factors affect the acceptance and effectiveness of the Sahabat KB program. The data collected in this study reflect a variety of characteristics that can contribute to their understanding of family planning (KB) programs as well as participation in reproductive health counseling in the community. The following is the distribution of respondent characteristics in this study.

Table 1, Distribution of Respondent Characteristics (n = 50)

Characteristics	Category	Quantity (n)	Percentage (%)
Age (Years)	20 – 25	10	20.0
	26 – 30	15	30.0
	31 – 35	12	24.0
	36 – 40	8	16.0
	41 – 45	5	10.0
Employment Status	Housewives	30	60.0
	Formal Workers	12	24.0
	Informal Workers	8	16.0
Final Education	SD	5	10.0
	SMP	10	20.0
	SMA	20	40.0
	College	15	30.0
Number of Children	1 Child	15	30.0
	2 Children	20	40.0
	≥3 Child	15	30.0

RESEARCH RESULTS

The characteristics of the respondents in this study included gender, teacher position (classroom teacher and subject teacher), and village origin. This data provides an overview of the distribution of educators in KKG Cluster VI Panglima Batur based on their role in learning and where they work.

Table 1, Distribution of Respondents by Gender, Teacher Position, and Village Origin

Category	Male (f)	Female (f)	Total (f)	Percentage (%)
Teacher Position				
Classroom Teacher	5	22	27	64,3%
Subject Teacher	4	6	10	23,8%
Principal	3	0	3	7,1%
Acting Principal	1	1	2	4,8%
Origin of the Village				
Belanti Siam	7	18	25	59,5%
Gadabung	4	9	13	31,0%
Garantung	1	1	2	4,8%
Total	12	30	42	100%

Based on the data in Table 1, the majority of educators in KKG Cluster VI Panglima Batur are women, with a total of 30 people (71.4%), while male teachers amount to 12 people (28.6%). In terms of position, classroom teachers dominate with 27 people (64.3%), which shows that the majority of educators are responsible for teaching various subjects at the elementary level. In addition, there are 10 subject teachers (23.8%), which include tutors in fields of study such as Islamic Religious Education and English. Principals and Acting Principals numbered 3 and 2 people respectively (11.9% overall), indicating that some educators also held managerial roles in their schools. In terms of the distribution of the original village, most of the teachers came from Belanti Siam with a total of 25 people (59.5%), followed by Gadabung with 13 people (31.0%), and Garantung with 2 people (4.8%). This shows that most of the teachers in this study teach in villages that have a fairly high population of primary schools. The distribution of educators based on villages can be considered in planning the distribution of educators so that each village has an adequate number of teachers in accordance with local education needs.

The Effect of Training on Educator Literacy Competency (Pretest-Posttest)

Literacy skills are fundamental skills that educators must possess to improve the quality of learning. In an effort to improve literacy competence, training based on an integrated contextual model is carried out through quality reading books. This study examines the impact of training on improving educator literacy in KKG Cluster VI Panglima Batur, Pandih Batu District. The results of the analysis of pretest and posttest data showed a significant increase in literacy competence after participating in the training. Here is a comparison of the scores before and after the training:

Table 2, Comparison of Educators' Literacy Competency Scores Before and After Training

Shoes	Literacy Competencies	Score Range	Pretes		Postest	
			Number (People)	Percentage	Number (People)	Percentage
1	Very Low	20-40	0	0%	0	0%
2	Low	41-60	12	29%	0	0%
3	Enough	61-80	30	71%	0	0%
4	Tall	81-100	0	0%	42	76%

Total	42	100%	42	76%
Average	57.40			97.69
Lowest	45.00			96.00
Highest	79.00			100.00
Standard Deviation	6.54			1.14
Gain (difference)			40.29	

The results of the study show that the training provided has a significant impact on improving educators' literacy competencies. Before the training, the majority of participants were in the moderate (71%) and low (29%) categories, with an average score of 57.40. After the training, all participants reached the high category (100%) with an average score that increased dramatically to 97.69. There are no more participants who are in the low or sufficient category. This increase can also be seen from the lowest score which rose from 45.00 to 96.00, as well as the standard deviation which decreased from 6.54 to 1.14, indicating that the posttest results were more even and consistent. The gain value of 40.29 further strengthens the evidence of the effectiveness of training in improving educator literacy. This indicates that the contextual training model based on quality reading books is able to improve better comprehension, reading skills, and text analysis for educators in KKG Cluster VI Panglima Batur, Pandih Batu District.

The Effect of Training on Educators' Numeracy Competency (Pretest-Postest)

Numeracy skills are an important aspect in increasing learning effectiveness, especially in teaching mathematical concepts and logic. To improve the numeracy competence of educators, training based on a contextual model that is integrated through quality reading books is carried out. This study examines the impact of training on improving the numeracy competence of educators in KKG Cluster VI Panglima Batur, Pandih Batu District. The results of the analysis of pretest and posttest scores showed a significant increase after training. Here is a comparison of the scores before and after the training:

Table 3, Comparison of Educators' Numeracy Competency Scores Before and After Training

Shoes	Numeracy Competence	Score Range	Pretes		Postest	
			Number (People)	Percentage	Number (People)	Percentage
1	Very Low	20-40	0	0%	0	0%
2	Low	41-60	8	15%	0	0%
3	Enough	61-80	34	62%	0	0%
4	Tall	81-100	0	0%	42	76%
	Total		42	76%	42	76%
	Average			64.40		98.24
	Lowest			52.00		96.00
	Highest			79.00		100.00
	Standard Deviation			6.15		1.19

Gain (difference)	33.83
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The statistical results showed an increase in the average score from 64.40 in the pretest to 98.24 in the posttest, with a gain of 33.83. The lowest score also increased from 52.00 to 96.00, while the highest score reached 100.00 after training. The standard deviation, which was initially 6.15, decreased to 1.19, indicating that the posttest results were more uniform than the pretest. Based on these results, contextual training based on quality reading books has been proven to be effective in improving educators' numeracy competence. There were no more participants in the low or sufficient category after the training, with all participants making it to the high category. This improvement shows that the training approach used is able to significantly improve the understanding and application of numeracy concepts.

Normality Test of Literacy and Numeracy Competency of Educators

The normality test is carried out to find out whether the pretest and posttest data on literacy and numeracy competencies of educators are distributed normally. The test was carried out using the One-Sample Kolmogorov-Smirnov Test with the following results:

Table 4, Results of the One-Sample Normality Test Kolmogorov-Smirnov Test

Variabel	Mean	Hours of deviation	Test Statistic	Asymp. Sig. (2-tailed)
Literacy Pretest	43	57.6047	6.59776	0.129
Pretest Numerasi	43	64.2791	6.13082	0.100
Posttest Literacy	42	97.6905	1.13671	0.204
Posttest Numerasi	42	98.2381	1.18547	0.168

Based on the results of the normality test, the value of Asymp. The sig. (2-tailed) for all variables is greater than 0.05, which means that the pretest and posttest data for literacy and numeracy competency are normally distributed. Thus, it can be concluded that the data meet the normality assumptions and can be used for further parametric statistical analysis.

Homogeneity Test of Literacy and Numeracy Competency of Educators

The variance homogeneity test is carried out using Levene's Test to ensure that the variance of pretest and posttest data on literacy and numeracy competencies is homogeneous. The test results are presented in the following table:

Table 5, Results of the Variance Test of Literacy and Numeracy Competency

Competence	Levene Statistic	df	df2	Sig. (p-value)
Literacy	0.843	4	37	0.507
Numeracy	1.544	4	37	0.210

Based on the results of the Levene's Test, the significance value (Sig.) for literacy (0.507) and numeracy (0.210) is greater than 0.05, so it can be concluded that the variance of the two data is homogeneous. This shows that

the pretest and posttest data on literacy and numeracy competencies have enough variance similarities for further statistical analysis.

Paired Sample T-Test for Educator Literacy Competency

To determine the effectiveness of training in improving educators' literacy competence, a Paired Sample T-Test was conducted on pretest and posttest scores. The test aims to see if there is a significant difference between the results before and after the training. If the p-value is less than 0.05, then it can be concluded that training has a significant impact on improving literacy competence. The results of the Paired Sample T-Test are presented in the following table:

Table 6, Results of the Paired Sample T-Test for Literacy Competency

Test Pairs	Mean Difference	Hours of deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Posttest Literacy - Pretest Literacy	40.29	6.73	1.04	38.82	41	0.000

The results of the analysis showed that there was a very significant increase in the literacy competence of educators after participating in the training, with an average score difference of 40.29. A p-value of 0.000 (< 0.05) indicates that the difference between the pretest and the posttest is statistically significant. In addition, the high t-value (38.82) indicates that this difference is not a coincidence, but rather a real effect of the training given. This significant improvement shows that an integrated contextual training model through quality reading books is effective in improving educators' literacy skills. With an average posttest score that is close to the maximum score, it can be concluded that the trainees managed to understand and implement the material provided. This supports the importance of training methods that are contextual-based and relevant to the needs of educators in improving the quality of learning in the classroom.

Paired Sample T-Test for Educators' Numeracy Competency

To measure the effectiveness of training in improving educators' numeracy competence, a Paired Sample T-Test was conducted on pretest and posttest scores. The test aims to find out if there is a significant difference between the score before and after training. If the p-value is less than 0.05, then it can be concluded that training has a significant effect on improving numeracy competence.

Table 7, Results of the Paired Sample T-Test of Numeracy Competency

Test Pairs	Mean Difference	Hours of deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Posttest Numerasi - Pretest Numerasi	33.83	6.64	1.02	33.02	41	0.000

Based on the results of the analysis, there was a significant increase in the numeracy competence of educators after participating in the training, with an average score difference of 33.83. The t-test score of 33.02 indicates a very strong difference between the pretest and the posttest. In addition, a p-value of 0.000 (< 0.05) indicates that this

increase did not occur by chance, but was the result of a training intervention. These results show that an integrated contextual training model through quality reading books is effective in improving educators' numeracy skills. With this significant increase, it is hoped that educators can be more competent in teaching the concept of numeracy to students, so that learning becomes more meaningful and applicative.

Discussion

The results of the study showed a significant increase in literacy and numeracy competencies of educators after participating in quality reading book-based training. The average literacy score in the pretest of 57.40 increased to 97.69 in the posttest. The average numeracy score increased from 64.40 in the pretest to 98.24 in the posttest. This significant improvement shows that the integrated contextual training model is able to have a positive impact on strengthening educators' competencies in understanding and applying literacy and numeracy skills in learning. The normality test with the One-Sample Kolmogorov-Smirnov Test method showed that the pretest and posttest data were normally distributed with significance values above 0.05 on almost all variables. The variance homogeneity test using Levene's Test also showed that the data had homogeneous variance, which indicated that the competency improvement that occurred could be further studied statistically. These results corroborate the validity of the analysis conducted and strengthen the conclusion that the training provided actually contributes to improving the competence of educators.

The results of the Paired Sample T-Test show a significant difference between pretest and posttest scores, both in literacy and numeracy aspects. The average difference in literacy score reached 40.29 with a p-value of 0.000, while the average difference in numeracy score was 33.83 with a p-value of 0.000. These values show that training has a very significant impact on improving educator competence. The quality reading book-based training used in this study has proven to be effective in improving the cognitive skills of educators, especially in the aspects of literacy and numeracy which are the main foundations in teaching at the primary education level. The improvement of literacy and numeracy competencies of educators is not only influenced by the training methods applied, but also by the active involvement of participants in the learning process. The contextual approach in the training allows participants to connect the material with real experiences in the classroom, so that the understanding of the concepts of literacy and numeracy becomes more in-depth. Active participation in discussion, reflection, and direct application of the material in relevant learning scenarios accelerates the improvement of competencies measured through posttests.

The effectiveness of the training in improving literacy and numeracy competencies was also supported by the low standard deviation in the posttest, which showed that the improvement occurred evenly among the participants. The standard deviation in the literacy posttest was 1.14 and in the numeracy posttest was 1.19 indicating that almost all participants achieved a high level of competence after training. This corroborates that the training model used in this study is able to provide consistent results in improving the quality of educator teaching. Significant improvements in educators' literacy and numeracy competencies have far-reaching implications for the quality of learning in schools. Better literacy competencies allow educators to present learning materials more effectively, while improved numeracy strengthens students' understanding of essential mathematical concepts. The application of a contextual training model based on quality reading books can be used as a strategy to improve the professionalism of educators in supporting students' academic achievements, especially in facing increasingly complex curriculum challenges.

An integrated contextual training model through quality reading books has significant potential in improving educators' literacy and numeracy competencies. This approach focuses on real-world experience and the relevance of the material to classroom learning practices, allowing educators to understand and apply the concepts of literacy and numeracy more deeply. Research shows that the use of quality reading books as a learning resource can enrich content related to literacy and numeracy, so that educators not only gain theoretical understanding, but also practical skills in teaching (Prihatini & Sugiarti, 2022; , Rahmawati, 2023). An integrated learning context allows educators to relate

the material to the real-life situations faced by learners. This is in line with findings that show that contextual approaches in learning, such as problem-based models, can improve students' understanding of the concepts being taught (Zakiah et al., 2019; , Rejemiati et al., 2022). By engaging educators in discussions, case studies, and simulations, these trainings create a more meaningful and applicative learning experience, which in turn can improve their teaching skills (Agusdianita, 2023).

Interaction between educators in learning communities, such as Teacher Working Groups (KKGs), also contributes to the exchange of best practices that can improve teaching skills. The reflective process carried out after each training session allows educators to identify the challenges faced and find more effective learning strategies (Sulisfianti & Handayani, 2023; , Nissa & Kurniawan, 2020). This approach supports continuous professional development, where educators can learn from each other's experiences and apply new knowledge in their local contexts (Kurniawati & Hadi, 2021).

The effectiveness of this training model is also supported by the principle of scaffolding, where educators are given gradual guidance until they achieve an independent understanding of literacy and numeracy. This approach ensures that each educator can develop according to his or her level of understanding, with support from facilitators and peers (Rahman et al., 2023; , Paillin, 2024). The quality reading books used in the training provide concrete examples of how literacy and numeracy strategies can be integrated in various subjects, so that educators can be more flexible in applying methods that are in accordance with the learning context in their respective schools (Rahmawati, 2023). With a combination of an experience-based approach, reflective discussions, and the use of quality learning resources, this training is able to have a significant impact in improving educators' literacy and numeracy competencies in an ongoing manner. This is in line with research showing that problem-based learning models and contextual approaches can improve students' learning outcomes and critical thinking skills (Rejemiati et al., 2022; , Ngadha, 2024). Therefore, the implementation of this integrated contextual training model is very important to improve the quality of education and competence of educators in Indonesia.

CONCLUSION

The Integrated Contextual Training Model Through Quality Reading Books has proven to be effective in improving educators' literacy and numeracy competencies. The results showed a significant increase in pretest and posttest scores, indicating that this training was able to provide a deeper understanding and improve educators' skills in teaching literacy and numeracy. The contextual approach used in the training allows participants to understand concepts more applicatively and relevant to the learning situation in the classroom. The integration of quality reading books as the main source of learning also plays a role in enriching the learning experience, so that educators are more skilled in adapting literacy-based teaching strategies and numeracy.

Suggestion

The implementation of this training model needs to be expanded to various teacher working groups at the regional and national levels so that the benefits can be felt by more educators. The development of teaching materials based on quality reading books also needs to be adjusted to the specific needs of each level of education to be more relevant to the applicable curriculum. In addition, post-training assistance needs to be carried out to ensure that the implementation of literacy and numeracy strategies that have been learned is truly implemented in the learning process. Periodic evaluation of the effectiveness of training is also needed to improve the quality of the program and adjust it to the development of educational needs in the field.

REFERENCES

- Agusdianita, N. (2023). Model pembelajaran problem based-learning (pbl) berbasis etnomatematika dalam meningkatkan hasil belajar mahasiswa. *Social Humanities and Educational Studies (Shes) Conference Series*, 6(3). <https://doi.org/10.20961/shes.v6i3.82317>
- Asosiasi Penerbit Indonesia. (2022). *Ketersediaan Buku Bacaan Bermutu di Sekolah Dasar: Analisis dan Tantangan Implementasi*. Jakarta: Penerbit Nasional.
- Handayani, R. (2023). Strategi Peningkatan Literasi dan Numerasi di Sekolah Dasar: Sebuah Evaluasi Program Pelatihan Guru. *Jurnal Pendidikan Berkelanjutan*, 10(1), 55-68.
- Handayani, R. (2023). Strategi Peningkatan Literasi dan Numerasi di Sekolah Dasar: Sebuah Evaluasi Program Pelatihan Guru. *Jurnal Pendidikan Berkelanjutan*, 10(1), 55-68.
- Handayani, S. (2023). Model pembelajaran problem based learning pada materi kerjasama dalam berbagai bidang kehidupan mata pelajaran pendidikan pancasila dan kewarganegaraan mts al fajar teluk kiri. *JURIBMAS*, 2(2), 217-222. <https://doi.org/10.62712/juribmas.v2i2.130>
- Kemendikbudristek. (2021). *Laporan Hasil Asesmen Nasional Tahun 2021*. Pusat Asesmen dan Pembelajaran, Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Kemendikbudristek. (2022). *Evaluasi Program Literasi dan Numerasi di Sekolah Dasar*. Pusat Asesmen dan Pembelajaran, Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Kurniawati, R. and Hadi, F. (2021). Pelatihan pengembangan instrumen evaluasi berbasis hots untuk guru sekolah dasar. *Jurnal Altifani Penelitian Dan Pengabdian Kepada Masyarakat*, 1(4), 267-276. <https://doi.org/10.25008/altifani.v1i4.182>
- LPPN. (2021). *Kajian Kompetensi Numerasi dan Dampaknya terhadap Pendidikan Nasional*. Lembaga Penelitian Pendidikan Nasional.
- Ngadha, C. (2024). Penerapan model problem based learning dalam meningkatkan kemampuan berpikir kreatif matematika siswa. *Polinomial Jurnal Pendidikan Matematika*, 3(2), 114-122. <https://doi.org/10.56916/jp.v3i2.923>
- Nissa, I. and Kurniawan, A. (2020). Efektivitas pembelajaran berbasis masalah dengan bermain peran terhadap peningkatan hasil belajar mahasiswa. *Jurnal Kiprah*, 8(2), 66-77. <https://doi.org/10.31629/kiprah.v8i2.2079>
- OECD. (2019). *PISA 2018 Results: What Students Know and Can Do (Volume I)*. Organisation for Economic Cooperation and Development.
- Paillin, B. (2024). Pengembangan keterampilan berpikir kritis dan solusi masalah matematika melalui problem based learning. *Jurnal Cendekia Jurnal Pendidikan Matematika*, 8(2), 1225-1242. <https://doi.org/10.31004/cendekia.v8i2.3199>
- Prihatini, A. and Sugiarti, S. (2022). Pembelajaran multiliterasi: implementasinya dalam pelatihan pengembangan model pembelajaran guru sma di malang. *Pengabdianmu Jurnal Ilmiah Pengabdian Kepada Masyarakat*, 7(4), 486-494. <https://doi.org/10.33084/pengabdianmu.v7i4.2900>
- Priyono. (2020). Analisis Kompetensi Guru dalam Pembelajaran Literasi dan Numerasi di Daerah Pedesaan. *Jurnal Pendidikan Dasar*, 15(2), 75-89.
- Priyono. (2020). Analisis Kompetensi Guru dalam Pembelajaran Literasi dan Numerasi di Daerah Pedesaan. *Jurnal Pendidikan Dasar*, 15(2), 75-89.
- Pusmenjar. (2021). *Hasil Asesmen Kompetensi Minimum dan Implikasinya terhadap Kebijakan Pendidikan di Indonesia*. Pusat Penilaian Pendidikan, Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Pusmenjar. (2021). *Hasil Asesmen Kompetensi Minimum dan Implikasinya terhadap Kebijakan Pendidikan di Indonesia*. Pusat Penilaian Pendidikan, Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.

- Rahman, A., Suharyat, Y., Ilwandri, I., Santosa, T., Sofianora, A., Gunawan, R., ... & Putra, R. (2023). Meta-analisis : pengaruh pendekatan stem berbasis etnosains terhadap kemampuan pemecahan masalah dan berpikir kreatif siswa. *Innovative Journal of Social Science Research*, 3(2), 2111-2125.
<https://doi.org/10.31004/innovative.v3i2.545>
- Rahmawati, A. (2023). Model Pelatihan Kontekstual dalam Meningkatkan Kompetensi Literasi dan Numerasi Pendidik di Sekolah Dasar. *Jurnal Inovasi Pendidikan*, 22(1), 45-60.
- Rahmawati, A. (2023). Model Pelatihan Kontekstual dalam Meningkatkan Kompetensi Literasi dan Numerasi Pendidik di Sekolah Dasar. *Jurnal Inovasi Pendidikan*, 22(1), 45-60.
- Rahmawati, I. (2023). Kemampuan literasi matematika mahasiswa pendidikan guru sekolah dasar berbasis pmri. *Elementary School Journal PGSD Fip Unimed*, 13(2), 152-167. <https://doi.org/10.24114/esjgsd.v13i2.43197>
- Rejemiati, R., Nawir, M., & Basri, B. (2022). Model pembelajaran berbasis masalah (pmb) terhadap penguasaan konsep ips dan kemampuan memecahkan masalah. *Briliant Jurnal Riset Dan Konseptual*, 7(4), 946.
<https://doi.org/10.28926/briliant.v7i4.1044>
- Suryani, D., Subekti, R., & Hidayat, M. (2022). Pelatihan Kontekstual dan Implikasinya terhadap Kompetensi Guru dalam Pengajaran Numerasi. *Jurnal Inovasi Pembelajaran*, 8(2), 112-125.
- Suryani, D., Subekti, R., & Hidayat, M. (2022). Pelatihan Kontekstual dan Implikasinya terhadap Kompetensi Guru dalam Pengajaran Numerasi. *Jurnal Inovasi Pembelajaran*, 8(2), 112-125.
- UNESCO. (2020). *Global Education Monitoring Report: Literacy and Numeracy Challenges in Developing Countries*. United Nations Educational, Scientific and Cultural Organization.
- Wijayanti, A., & Prasetyo, T. (2021). Kesenjangan Kompetensi Pendidik di Daerah Terpencil: Studi Kasus Program Pengembangan Guru Berkelanjutan. *Jurnal Ilmu Pendidikan*, 19(3), 87-99.
- Wijayanti, A., & Prasetyo, T. (2021). Kesenjangan Kompetensi Pendidik di Daerah Terpencil: Studi Kasus Program Pengembangan Guru Berkelanjutan. *Jurnal Ilmu Pendidikan*, 19(3), 87-99.
- World Bank. (2021). *Strengthening Foundational Literacy and Numeracy: Policy Recommendations for Developing Nations*. Washington, DC: The World Bank.
- Zakiah, N., Sunaryo, Y., & Amam, A. (2019). Implementasi pendekatan kontekstual pada model pembelajaran berbasis masalah berdasarkan langkah-langkah polya. *Teorema Teori Dan Riset Matematika*, 4(2), 111.
<https://doi.org/10.25157/teorema.v4i2.2706>