Strengthening Literacy and Numeracy Competencies
Based on Local Wisdom for Teachers to Design Contextual Learning

Akhmad Humaidi1, Dina Huriaty2, and Rahidatul Laila Agustina3
1Indonesian Language and Literature Education Study Program, Universitas PGRI Kalimantan, Kalimantan Selatan, Indonesia
2Mathematics Education Study Program, Universitas PGRI Kalimantan, Kalimantan Selatan, Indonesia
3Elementary School Teacher Education Study Program, Universitas PGRI Kalimantan, Kalimantan Selatan, Indonesia
*humaidi@stkipbjm.ac.id

Abstract: Barito Kuala Regency, especially Jejangkit District, lags behind other regions in South Kalimantan regarding human resources. According to the BPS of South Kalimantan Province, the Human Development Index for Barito Kuala Regency is in 13th position out of 14 districts from 2020 to 2022. Education is a strategic aspect of overcoming this problem. Teachers need to receive training on literacy and numeracy learning strategies to improve the quality of human resources, especially students in the younger generation. This community service activity aims to strengthen the literacy and numeracy competencies of elementary school teachers who are members of the Jejangkit District KKG by integrating learning with local wisdom. Local wisdom is contextual so students can more easily understand learning that is close to everyday life. This service activity uses the Participatory Action Research (PAR) method, which consists of five stages, namely to know, to understand, to plan, and to act in the form of On Service Training and On Job Training, as well as to change in the form of In-Service Training activities. This activity involved one trainer and 15 teachers representing 12 elementary schools in the Jejangkit District KKG. A total of 3 teachers from 3 schools also received intensive assistance in practising the material as examples for other participants. The evaluation instrument for this service program uses a questionnaire. Based on the data collected, this activity was successful in providing improvements in literacy and numeracy learning. The average post-test score (81.71) was higher than the pre-test (69.73). The teachers succeeded in designing learning that made students more focused on learning. This activity implies that teachers have succeeded in improving the competence and quality of learning in the classroom, especially literacy and numeracy for their students.

Keyword: local wisdom; literacy; numeration

© 2024 Bubungan Tinggi: Jurnal Pengabdian Masyarakat

Received: 13 October 2023 Accepted: 1 April 2024 Published: 12 July 2024
DOI: https://doi.org/10.20527/btjpm.v6i3.10428

INTRODUCTION
The main objective of this community service activity is to strengthen literacy and numeracy competencies among teachers by utilising various local wisdom within the school environment. Teachers are expected to design learning experiences that can enhance the quality of literacy and numeracy among students in their respective schools without requiring significant costs. Local wisdom is utilised due to its abundance. Additionally, learning will become more contextual, and students will become more focused and better able to understand the taught material.

This objective is motivated by complex issues. The Progress in International Reading Literacy Study in 2015 published research results indicating that students' literacy competencies in understanding reading materials are still below the international standard average (Syar, 2019). Similarly, students' numeracy competencies in Indonesia still need to improve. This is evident from the PISA 2015 and TIMSS 2016 tests, which showed that the mathematics score of 387 is below the average score of 490. Furthermore, the PISA 2018 publication indicated that Indonesian students only scored 379 in mathematics ability, below the OECD average of 489. These various international indicators suggest that the numeracy competencies of Indonesian students still need to be achieved (Wardhani, 2022).

The world has entered the era of the Fourth Industrial Revolution. This era urges all countries to enhance the quality of their education, including Indonesia. Indonesia must design education that can prepare competent and competitive younger generations to face the Fourth Industrial Revolution era. They must solve various increasingly complex problems in the future. Therefore, reading and writing literacy must be incorporated into classroom lessons and within society (Alfin, 2018). Access to other literacy skills is obtained through reading and writing activities. Unfortunately, reading and writing activities conducted in schools as educational institutions are considered unsuccessful in preparing students.

This situation also occurs in South Kalimantan, especially in Barito Kuala Regency. According to the Central Bureau of Statistics of South Kalimantan Province, the Human Development Index of Barito Kuala Regency ranked 13th out of 14 regencies for three years, with 66.22 in 2020, 66.64 in 2021, and 67.37 in 2022 (Badan Pusat Statistik Provinsi Kalimantan Selatan, 2023). This community service activity focuses on Jejangkit District because it has the fewest villages, only 7. This district has no vocational high schools (SMK), only one state high school (SMA), one state junior high school (SMP), and 11 elementary schools (SD).

Primary education is crucial for improving human resources quality in this area. Based on data from the Ministry of Education, Culture, Research, and Technology, Jejangkit Barito Kuala District has 11 schools: SDN Cahaya Baru, SDN Sampurna 1, SDN Sampurna 2, SDN Bahandang 1, SDN Bahandang 2, SDN Jejangkit Muara 1, SDN Jejangkit Muara 2, SDN Jejangkit Pasar, SDN Jejangkit Barat 1, SDN Jejangkit Barat 2, and SDN Jejangkit Timur. This district has 655 students divided into 64 classes with 72 teachers.

Elementary school teachers regularly meet monthly in Teacher Working Groups (KKG) to discuss various current issues. These meetings provide an opportunity for elementary school teachers to obtain information related to new policies and curricula and personal development opportunities to improve the quality of teaching.

Interview and observation results from the community service team regarding elementary school level
education in the KKG of Jejangkit District, Barito Kuala Regency, indicate that implementing literacy and numeracy has yet to reach the expected quality. The causes include various factors such as ineffective teaching processes, inadequate facilities and infrastructure, limited teaching materials availability, and lack of literacy and numeracy materials. As a result, literacy and numeracy teaching conducted by teachers is limited to using printed teaching materials. Students only do tasks according to textbook instructions and memorise formulas without accompanying familiar visual media for student understanding. In contrast, teachers could utilise local wisdom around the school, which is easier for students to understand. Consequently, teachers' teaching models to improve literacy and numeracy are still conventional and less engaging for elementary school students.

Reading and writing encompass knowledge and skills to find, understand, and process information to analyse and develop potential and understanding to participate socially. The chances of achieving a better quality of life will increase when reading ability becomes a habit for children. Reading habits can also form children's characters (Rohman, 2017). Sufficient materials are crucial to support literacy in reading and writing. Contextual learning can be achieved through the availability of literacy teaching materials suitable for the local cultural context (Mboka et al., 2021).

The values contained in the curriculum must be translated and elaborated by teachers. Furthermore, these values must be transformed into learning activities for students to achieve the curriculum objectives (Kusmiarti & Hamzah, 2019). Mentoring and training to raise awareness and literacy and numeracy skills among teachers, which currently need to be improved, have not yielded optimal results. Teachers still believe that only Indonesian language teachers are responsible for literacy competencies and only Mathematics teachers are responsible for numeracy competencies. Additionally, schools must optimally utilise local wisdom in their surroundings to develop their students' literacy and numeracy skills (Alfin, 2018).

The solution to addressing these issues through this community service activity is to strengthen the literacy and numeracy competencies of elementary school teachers in Jejangkit District through literacy and numeracy mentoring based on local wisdom for teachers who are members of the KKG. This mentoring will provide insights into literacy, numeracy, and practical teaching strategies. Teachers will also be guided in designing and implementing them in their classrooms. This activity encourages teachers to integrate local wisdom into teaching so students can more easily understand the material because all learning elements are closely related to their daily lives.

METHOD
The service method used in this activity is Participatory Action Research (PAR). This approach aims to solve problems and meet the practical needs of the community. The PAR work cycle in this activity includes five stages: knowing (to know), understanding (to understand), planning (to plan), acting (to act), and changing (to change). The cycle of service activities can be observed in Figure 1 (Afandi et al., 2022).

![Figure 1 Service activity cycle](image-url)
Know stage (to know), the community service team blended with the District KKG of Jejagkit to get acquainted with the teachers. Understanding stage, the team gathered information to understand the main problems of the teacher group. Planning stage, the community service team devised problem-solving solutions suitable for the conditions of the teachers in schools. In the acting stage, the team takes action to solve problems. The community service team designs two main activities at this stage: On-service Training and On Job Training. At this stage, the team presents literacy-based material based on local wisdom involving teachers who are members of the District KKG of Jejagkit. Furthermore, the team provided intensive and continuous assistance to representative participants in their respective schools to provide advice and improvements to ensure literacy-based learning based on local wisdom. The changing stage was carried out in the form of reflection. This action assesses the success and shortcomings of all service activities towards the changes and goals to be achieved (Rahmat & Mirnawati, 2020).

On-Service Training
This activity consisted of providing material to participants through lectures from speakers supplemented by discussions and question-and-answer sessions. The participants are teachers of the KKG of Jejagkit District, Barito Kuala Regency. Participants received material exposure regarding literacy and numeracy competencies integrated with local wisdom. This material enriched the knowledge of teachers as partners.

The material presentation took up to 120 minutes. This activity was carried out on Saturday, August 26, 2023, in the auditorium of the Coordinator Office of the Education Field Region of Jejagkit District. The material presentation was delivered by education practitioners, namely Arif Rahman Prasetyo, regarding the urgency of literacy and numeracy competencies and their integration with Banjar local wisdom available in Barito Kuala through lectures and supported by PowerPoint presentations. The speakers also provided examples based on practical experiences of literacy and numeracy learning based on local wisdom.

On-Job Training
On-Job training consisted of practising various theories presented in previous activities, namely integrating local wisdom in literacy and numeracy learning. Participant representatives were asked to practice the material in their respective schools. In this activity, the community service team accompanied three schools by observing and providing input regarding the practices carried out by the participants. Teachers received intensive guidance on integrating local wisdom with literacy and numeracy learning from the opening, core activities to the closing of the learning. Based on the community service team’s improvement suggestions, teachers revise the learning activities until literacy and numeracy learning can be integrated with local wisdom. The community service team provided scheduled mentoring to teachers from three schools: SDN Cahaya Baru, SDN Jejagkit Muara 2, and SDN Jejagkit Timur. However, the service team also conducts intensive discussions and communication with teachers outside the practice schedule.

In-Service Training
In-service training consisted of activities that involved reflecting on the practices that had been carried out. The activities included evaluating the development of teacher skills in implementing material on integrating local wisdom in literacy and numeracy learning and the obstacles
This activity involves primary school teachers who are members of the KKG of Jejangkit District. The District has 72 teachers from 11 primary schools; however, participants in this activity represent each school with 15 teachers.

The community service team also sampled three teachers who were accompanied to practice the presented material. This sampling was done using the purposive sampling technique, which considers the representation of each area.

Data to evaluate this community service program were collected through a questionnaire consisting of 10 questions. Each question represents one sub-indicator. The data collection instrument uses the following indicators:

1. **Indicator: Literacy**
   - a. Literacy skills
   - b. Student literacy enthusiasm
   - c. Utilisation of literacy materials with local wisdom
   - d. Utilisation of literacy media with local wisdom
   - e. Handling of literacy skills improvement

2. **Indicator: Numeracy**
   - a. Numeracy skills
   - b. Student numeracy enthusiasm
   - c. Utilisation of numeracy materials with local wisdom
   - d. Utilisation of numeracy media with local wisdom
   - e. Handling of numeracy skills improvement

Data analysis was done by calculating the average of the obtained data, then comparing the post-test and pre-test results to see the achievement of each established indicator. The comparison of this data shows the achievement of the implemented community service program. The activity is considered successful if it meets the following status in Table 1.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher literacy competence based on local wisdom</td>
<td>≤50</td>
</tr>
<tr>
<td>Teacher numeracy competence based on local wisdom</td>
<td>≤50</td>
</tr>
</tbody>
</table>

**RESULTS AND DISCUSSION**

**Knowing/To Know**

The main problem in this community service activity is teachers' weak literacy and numeracy competence. Strengthening literacy and numeracy is crucial for improving the quality of human resources to face the era of the Fourth Industrial Revolution. Barito Kuala Regency, especially Jejangkit District, lags behind other areas in South Kalimantan regarding human resources (Badan Pusat Statistik Provinsi Kalimantan Selatan, 2023). The government and relevant parties, especially the KKG of Jejangkit District, can help primary school teachers strengthen literacy and numeracy competencies. The solution to this problem is integrating literacy and numeracy activities with the local wisdom of the Banjar community, making learning more contextual and engaging (Khasanah & Putri, 2021).

Teachers must recognise students' characteristics and guide learning to be more dynamic. Local wisdom in this activity is directed to be more contextual, current, and engaging to stimulate students' curiosity. Limitations in facilities and infrastructure can be anticipated because local wisdom materials can utilise the environment around schools and students' residences. Strengthening literacy and numeracy in this community service activity includes training for primary school teachers who are members of the KKG of Jejangkit District, mathematics learning based on local wisdom, instilling a love for reading and counting activities for students, and
providing experiences that nurture their imagination (Perdana & Suswandari, 2021).

**Understanding/ To Understand**

The most common problem regarding numeracy is that Mathematics seems easier and more exciting now because of its hierarchical and abstract nature (Rafiah et al., 2023). Therefore, mathematics teachers must be creative in solving various obstacles students face so that further learning no longer occurs (Saleh et al., 2017). Students will be directed to understand numeracy material; teachers can create numeracy problems by modifying various local wisdom potentials around them so that teachers can explain numeracy issues more specifically (Ernawati et al., 2023). Numeracy competence in primary schools is very important because this competence is closely related to quantitative information and forms of symbols, numbers, and geometry (Wardhani, 2022).

Problem the literacy aspect: low literacy culture not only occurs in students but is also experienced by teachers, as seen from the culture of writing by teachers who are less accustomed to writing their thoughts in scientific works. The habit of teachers writing so far is minimal. The fact shows that some teachers cannot write, starting from mass media to writing scientific papers for promotion, which is their respective obligation. As a result, teachers generally cannot undergo promotion because of unfulfilled academic publications (Ranti et al., 2021). Teachers must possess this skill because it is an important profession in determining the success of learning. They are required to educate students to be prepared to face the era of the Fourth Industrial Revolution.

**Planning/ To Plan**

The community service team's solution offered to strengthen literacy and numeracy competencies for primary school teachers in Jejangkit District is training activities in the form of strengthening literacy and numeracy competencies based on local wisdom for teachers in the KKG of Jejangkit District. The Jejangkit area in Barito Kuala has many local pearls of wisdom that are useful in fulfilling various basic needs for living as well as the moral standards of society. However, various values of local wisdom are only understood by certain communities, such as community leaders or parents and have not yet been developed in the formal education sector. Whereas local wisdom is the knowledge and perspective of society in the form of ideas, activities, or physical works to fulfill life needs and solve various daily problems (Indrianti et al., 2017). Integration of local wisdom in learning activities can help teachers and students form structured and logical thinking frameworks and solve real-world problems in the education sector that continue to change (Sirait et al., 2022).

The appropriate Read Write Count learning alternatives for students in Jejangkit District integrate literacy and numeracy with local wisdom because this area has uniqueness and characteristics compared to other areas in South Kalimantan. Local wisdom is contextual, so students can understand reading more easily because it is close to their daily activities (Syar, 2019). The potential of local wisdom owned by Jejangkit District is worthy of being taught from the early stages of education so that students are more familiar with customs and understand the values of their place of origin. Thus, they will preserve it by inheriting it as their identity (Wardhani, 2022). Students will find it easier to learn literacy and numeracy because they get
learning experiences suitable for their environment.

Mentoring to improve reading, writing, and counting competencies is carried out through a series of training. Teachers are equipped with materials on basic literacy and numeracy concepts supplemented with modules containing examples of local wisdom integration taken from daily life. In addition, materials on basic numeracy are also presented aimed at equipping teachers to encourage students to use numeracy skills in solving everyday problems, not just understanding the basic concepts (Riyadi, 2022).

The local wisdom of South Kalimantan is very rich and can be used as a theme in learning activities (Adrian & Agustina, 2020). Learning materials display content and adapt to the age of learners so that logical thinking also adapts to students' cognitive level manifested in the choice of vocabulary and readability (Syar, 2019).

Acting/ To Act
The community service team initially mapped the Literacy and Numeracy conditions of students based on local wisdom. The team distributed a 10-question pre-test at the beginning of the activity and post-tests at the end of the activity to the 15 participants present. The data obtained from the distributed questionnaires are as follows in Figure 1.

The data in Figure 2 indicates that the community service activities carried out were quite successful. This can be seen from the increase in test post-scores compared to pre-test scores. The average pre-test score at the beginning of the activity was 69.73, while the test post-score at the end was 81.71. Thus, there was an improvement during the activity with scores above 80.

On-Service Training
This activity was conducted by teachers in the KKG of Jejangkit District. There were 15 participants from 11 schools, each represented by 1 to 2 teachers.

The speakers for this activity were accomplished teachers in literacy and numeracy. The speakers delivered material on literacy and numeracy based on local wisdom covering the following main topics:
1) Basic concepts of literacy and numeracy
2) Use of local wisdom materials in teaching
3) Examples of literacy and numeracy teaching practices based on local wisdom

The speakers delivered the material in a PowerPoint presentation with 67 slides for all participants. Documentation of On-Service Training activities in the district coordinator's office hall is shown in Figure 3.

The service team provided various facilities to each participant, including a
Goodie Bag containing seminar participant supplies and literacy and numeracy modules based on local wisdom.

In this activity, teachers gained insights into literacy and numeracy. Conceptually, teachers received a reinforcement of their literacy and numeracy competencies. Participants were also encouraged to practice their understanding through assignments the service team gave to design learning modules based on local wisdom. The program achievement indicators were successfully achieved, especially in the first sub-indicator, literacy and numeracy skills. In the questionnaire distributed during the pre-test, the average achievement score for the literacy sub-indicator was 70, while for the numeracy sub-indicator, it was 67.14. This data indicates that, at the initial stage of the program, the participants had successfully attained literacy and numeracy skills above the standard set by the service team, which is ≤50.

On Job Training
In this section, teachers practised the material presented in previous activities in their respective schools. The service team will assist three sample schools, SDN Jejangkit Muara 1, SDN Jejangkit Muara 2, and SDN Sampurna 1. The list of participants who undergo intensive handling is as follows in Table 2.

Table 2 Intensive training participants

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rini</td>
<td>SDN Jejangkit Muara 1</td>
</tr>
<tr>
<td>Nor Baiti</td>
<td>SDN Jejangkit Muara 2</td>
</tr>
<tr>
<td>Heni</td>
<td>SDN Sampurna 1</td>
</tr>
<tr>
<td>Juniarti</td>
<td></td>
</tr>
</tbody>
</table>

The first participant's practice, Heni Juniarti, S.Pd. at SDN Sampurna 1 addressed numeracy with the learning objective of adding two numbers. The teacher incorporated local wisdom in the form of plantations. The lesson began with stimulating questions about plantation yields, such as oil palm, rambutan, bananas, and oranges, using visual aids. During the learning phase, the teacher asked students to add two bowls containing marbles in their respective groups. Students were also asked to present their task results to their peers. Five students did not meet the criteria in the initial assessment, with an average score of 70.77. However, in the summative test, all students successfully achieved the Learning Objectives Achievement Criteria with an average score of 92.31. Documentation of on-job training practice at school is shown in Figure 4.

Figure 4 On-job training practice at school

The second participant's practice, Nor Baiti, S.Pd. at SDN Jejangkit Muara 2, also addressed numeracy, focusing on Place Value (Units and Tens). During the core activity, the teacher asked students to count from 1 to 20. Students were asked to explain the concept of tens using sticks as a form of local wisdom. The teacher demonstrated the learning activity by taking 11 sticks and bundling ten sticks into one bundle, then placing them in blue-coloured glass, while one stick was placed separately in yellow-coloured glass. This facilitated students in identifying the tense place with the coloured glasses. Students competed to quickly separate the tens and units values using sticks in coloured glasses. The winner would get to write two-digit numbers on the whiteboard in front of their peers.

The third participant's practice, Rini, S.Pd. at SDN Jejangkit Muara 1 practiced local wisdom-based learning by addressing the topic of addition and
sorting numbers from least to greatest and vice versa. The teacher used small eggplants to reflect local wisdom in the Jejangkit District. The teacher divided the students into groups with bowls containing small eggplants each. The students were tasked with counting the number of small eggplants in their group and then presenting them. They were also asked to sort the number of small eggplants from least to most.

Based on the mentoring conducted for the representatives of the three participants, sub-indicators two to four showed improvement.

1) Sub-indicator two: Students appeared more enthusiastic about literacy and numeracy learning. Teachers explained that integrating local wisdom made students more focused on learning.

2) Sub-indicator three uses local wisdom materials, which are evident in the modules designed by teachers and are always linked to the environment around the Jejangkit area. This makes it easier for students to understand the material taught by teachers.

3) Sub-indicator four regarding learning media shows teachers can use media based on local wisdom in the Jejangkit area. The accompanied teachers utilised media such as local fruits, sticks, and vegetables to explain things. Students enthusiastically answered the teachers' questions and followed their instructions because the media used are frequently encountered daily.

**Changing/ To Change**

*In-Service Training*

In the final meeting, all participants were gathered again to listen to presentations from the three representatives. The representatives presented the learning practices they had implemented. Other participants listened and provided feedback for improvement.

Documentation of in-service training activity at jejangkit sub-district coordinator's hall is shown in Figure 5.

![Figure 5 In-service training activity at jejangkit sub-district coordinator's hall](image)

The participants explained that the learning activities went well. This learning activity has several advantages. Students tend to be more focused than usual because they have tangible objects that can be directly observed. These objects are also taken from local wisdom in the Jejangkit area, making it easier for students to understand the learning materials. Participants hope that such activities can be carried out again to improve the quality of education, especially in literacy and numeracy.

Some challenges identified from the discussion results are that some students still have not successfully absorbed the learning activities. However, teachers explained that these students face difficulties in this subject and other subjects. They are likely categorised as students with special needs requiring special attention. Additionally, the number of students in certain schools in the Jejangkit District is not large, so group tasks are less optimal. Therefore, teachers need to be patient and creative in addressing these issues.

This activity demonstrates the achievement of sub-indicator five, which is improving literacy and numeracy skills. In the discussion during this activity, other participants responded to various challenges. Other participants
shared their experiences in solving similar problems. The exchange of ideas in this activity encourages competency improvement to be carried out independently and continuously. Additionally, the average scores of the participants also increased. In the literacy sub-indicator, it increased from 71.43 in the pre-test to 77.33 in the post-test, while in the numeracy sub-indicator, it increased from 71.43 in the pre-test to 84 in the post-test. Thus, teachers' abilities in handling literacy and numeracy improvements have improved.

CONCLUSION
Integrating local wisdom into learning has improved teachers' literacy and numeracy competencies in the Jejangkit Sub-District Teacher Working Group (KKG). The evaluation results of the activities show that the participants' average scores increased from 69.73 in the pre-test to 81.71 in the post-test. All indicators experienced improvement, from literacy and numeracy skills, students' learning enthusiasm, the use of local wisdom in learning materials, and the use of local wisdom in learning media to teachers' handling of literacy and numeracy improvement. These results have surpassed the minimum program achievement standards set by the service team, which is ≤50. All participants benefited from this activity by strengthening their literacy and numeracy competencies. Furthermore, local wisdom in the Jejangkit Sub-District can also be optimised in learning activities. Students also became more focused on participating in learning activities, more enthusiastic about completing assignments, and easier to understand the materials. Integrating local wisdom in improving literacy and numeracy competencies is the right solution to improve the quality of human resources, especially in the Jejangkit Sub-District of Barito Kuala District.

REFERENCES
Kusmiarti, R., & Hamzah, S. (2019). Literasi dalam Pembelajaran Bahasa...
Indonesia di Era Industri 4.0. 211–222.