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SCHOOL-BASED LITERACY PROGRAM TO IMPROVE STUDENTS' READING COMPETENCIES IN EARLY YEARS OF PRIMARY EDUCATION IN RURAL AREAS

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Abstract

Improving literacy for early-grade children in primary schools in rural areas in Indonesia is a complex task due to the limited availability of reading resources and the varying teachers' pedagogy competencies to teach students. This study aims to explore how school-based literacy programs by enhancing teachers' teaching practices and improving the literacy learning environment at schools may improve students reading competencies, especially in lower grades. Using mixed methods, this study explains how students improve their reading competencies and this study also explores supporting factors and challenges to improve students' literacy. The sample of the study is 800 students and 92 teachers or principals in 28 primary schools in a district in West Kalimantan, Indonesia. The proportion of students who can read (categorized as a reader) improved after the program intervention. Several supporting factors that contribute to the improvement of student reading competencies have been identified such as teachers' motivation, teaching strategies, the availability of print-rich learning materials, and the support of school principals in literacy programs.

Keywords: literacy program, reading competency, reading comprehension, rural education

Introduction

Improving children's literacy has been a focused task of the Indonesian government, especially in areas where reading resources are limited (Fauzan et al., 2023). Based on the Programme for International Student Assessment (PISA), the reading competencies of Indonesian students are at a low level (Fauzan & Tasman, 2020; Fenanlampir et al., 2019). This may impact Sustainable Development Goals (SDG) related to minimum reading proficiency levels of students (Vukelić, 2022). There are several efforts implemented by the Ministry of Education, Culture, Research and Technology (MoECRT) in Indonesia to improve the literacy rate through the Emancipated Learning Curriculum (Merdeka Belajar) in 2020 with a sub-theme campaign of student learning in Literacy, Numeracy, and Character



Development. The MoECRT also implemented a large-scale assessment called *Asesmen Nasional Berbasis Komputer* (Computer-based National Assessment) and Education Report (*Rapor Pendidikan*) to assess Indonesian students' literacy, numeracy, and character competencies at the national level. This assessment uses a higher-order thinking skill framework developed within PISA. This assessment standard may be too difficult for schools located in rural areas to achieve because they lack learning resources (Solihin et al., 2020). Previous studies only focused on middle school students aged 15 years old (Nugrahanto, & Zuchdi, 2019; Ratri, 2023), so the literacy study for primary grades, especially grades 1-3 has remained limited in Indonesian literacy research.

Lack of availability of reading resources and textbooks in some rural areas in Indonesia contributes to student reading competencies (Solihin et al., 2020). In rural schools, there are lack of literacy learning material and limited availability of literacy instruction in the current curriculum to support reading competencies in the early years of primary schools (Solihin et al., 2020). A study shows that access to books in several schools in Java is limited, even though Java Island is a benchmark of book availability (Laksono & Retnaningdyah, 2018). The access to books in rural areas outside Java Island, including children's books is usually limited. Access to books and school libraries also plays an important role in improving children's reading interests (Pitoyo, 2020) and reading competencies. There has been limited study in improving children's literacy in early grades of elementary schools in rural areas, where this study aims to fill this gap.

The quality of teachers in rural and remote areas of developing countries, such as Indonesia is varying because teachers may lack adequate support at school in terms of capacity building (Leonard, 2016; Solihin et al., 2020; Wahyudin & BK, 2022). Further, education problems such as low teacher quality (Sakerania et al., 2019), and inconducive teaching and learning environment (Stacey, 2011) may contribute to children's literacy achievement. Based on current Indonesian policy reform, teachers and principal professional development is an important focus of the Emancipated Learning Curriculum (*Kurikulum Merdeka*) (Aditomo, 2024). This present study focuses on the improvement of students' literacy in rural areas in a district in West Kalimantan, through an intervention in the teacher professional development (PD) program and improving the availability of a print-rich environment. West Kalimantan was thus chosen as the focus of this present study concerning the third lowest province in-country literacy rate based on the Literacy Index (Solihin et al., 2019). Based on a literacy survey in 2019, West Kalimantan's literacy rate was only 28,63% below the national average of 37.32% (Solihin et al., 2019). It is noteworthy that literacy education is considered an essential part of improving primary education quality in Indonesia. A recent study shows that low teacher competencies influence learning quality at schools (Solihin et al., 2020).

There are several studies on school literacy intervention programs such as those implemented in India (Banerji & Chavan, 2016) and Malaysia (Chew, 2018) and this strategy has been the gateway for improving children's literacy. Improvement in children's literacy can be achieved through certain education policies (Wyse & Bradbury, 2022). Various literacy programs are conducted in schools to improve reading interest and competencies, such as through specific writing and reading programs (Graham et al., 2020), making reading corners at schools and through literacy competitions (Dafit & Ramadan, 2020), teacher

coaching programs in literacy (Lynch & Ferguson, 2010), students' literacy skills demonstration (Akbar, 2017), literacy advertisement (Nelson, 2016), and conducting several literacy activities in the school library (Fadhli, 2021). Teachers' competency, innovation, and dedication play an important role in improving students' learning (Hakim, 2015), including in literacy. There is little research about teachers' professional development programs in supporting students' literacy in primary education, and this study aims to fill this gap.

To improve literacy rates, school-based literacy program focuses on several aspects especially 5 core reading competencies which are letter knowledge, phonemics, vocabulary, reading fluency, and reading comprehension. The goal of this literacy program is usually to improve children's reading comprehension. This reading skills competency is influenced by the Simple View of Reading (Gough & Tunmer, 1986) and Hollis Scarborough (2001) argued that to be a fluent/skilled reader with comprehension is supported by decoding ability and language comprehension. Teachers are trained to teach students phonological awareness, decoding, alphabetical principles, letter sounds, vocabulary, and literacy knowledge. This principle implementation is also aligned with the recommendation of the National Reading Panel in the United States that the Reading Process includes phonemic awareness, phonic, oral reading fluency, vocabulary, and reading comprehension (Shanahan, 2005). Currently, in Indonesia, there is limited information about certain main recommendations and strategies of the reading process and reading comprehension, especially for children in early primary years grades 1-3. A study shows that students textbooks available in Indonesia lack information on instructional learning strategies to teach early grades of elementary school students (Solihin et al., 2020). This study is trying to fill the gap on how to teach reading competencies at primary levels through embedding with the national curriculum. The literacy instruction to support children's literacy in Indonesia, especially with the use of phonic and phonemic awareness is also limited where this study teaches students this phonemic awareness before enhancing their reading fluency and reading comprehension.

In this study, *the school-based literacy program* may address low students' literacy competencies and the lack of learning material at schools. The school-based literacy program can be implemented in schools in rural settings, lacks learning resources, and only requires a limited budget since it can use local contextualized materials in daily learning classrooms. The focus of the intervention is increasing teachers' ability to teach students literacy through classroom learning with 5 core reading competencies namely letter knowledge, phonemic awareness, vocabulary, reading fluency, and reading comprehension skills. Apart from classroom intervention, the school can support literacy programs. This can be done when the principal and teacher have a mutual commitment to improve children's literacy. Teachers are trained in teaching core reading competencies. Teachers are equipped to develop contextual learning material that supports each of the five core reading competencies.

The second focus of the intervention is providing a literacy learning environment. Teachers are equipped to create local children's books and localized literacy learning materials that can use the local language. This localized learning material is used to support five core reading competencies. Teachers also encourage children to teach 5 core reading competencies for the students and promote reading

habits through the development of this learning material during learning in the classroom. Teachers and students may be encouraged to create reading corners to conduct literacy activities.

A part of the teacher's role, the role of the principal is crucial to support this goal. While teachers are responsible for supporting children's literacy in the classroom, principals are responsible for leading and empowering school literacy programs, monitoring literacy activities at school levels, and inviting school committees or parents. Principals are responsible for being role models to create a friendly learning environment for children both in the classroom and in schools.

This present study aims to explore the process of improving students' literacy by increasing teachers' knowledge and skills in teaching literacy at early grades of elementary schools and improving the literacy learning environment at schools including the availability of print-rich material to address the lack of reading resources in rural schools. This study aims to improve students' literacy competencies in early grades of elementary schools by focusing on teachers' capacity building. The literacy program is called *a school-based literacy program*, which involves interventions with several main activities to improve student's literacy through teachers' training programs to teach literacy and improving the availability of print-rich materials and school-level literacy programs.

The main research questions that want to address are:

1. To what extent a school-based literacy program will influence the student's literacy competencies in the early years of primary education?
2. What are the enablers and barriers to the implementation of literacy programs in the early years of primary education?

The results of this research focus on how school-based literacy intervention may contribute to students' reading comprehension. It adds knowledge to the body of literature on how schools in rural areas mitigate the lack of resources to improve student's literacy. The findings of this present study illuminate the best practices and challenges to accelerate literacy competencies in Indonesia and other developing countries.

Method

Research design

This research employed a mixed-method design, in which the qualitative and quantitative data were collected together to help the researchers answer questions (Creswell & Creswell, 2017). The qualitative data explored the role of teachers in improving students' reading competencies. Interviews and surveys were also employed to explain the data in more detail (Cohen et al., 2018). There were teacher surveys collected to inform how *school-based literacy program* is implemented in schools and classrooms level. In this study, the qualitative and quantitative data were analyzed separately and explained to each other.

Quantitatively, this research obtained statistical data from the students' literacy competencies using STAR (School-based Test about Reading). STAR has been used in other countries to measure student's literacy in early grades of elementary schools (Seng et al., 2018). This tool has been adopted and contextualized into Bahasa Indonesia. Data collection is conducted using STAR (School-based Test about Reading) by enumerators who are recruited and trained.

STAR focuses on five core reading competencies, including assessing letter naming recognition, familiar word reading, reading non-reading words, oral reading fluency, and reading comprehension. This tool is designed to measure students' progress in reading as the result of a specific literacy program. The sub-test regarding children's reading skills is as follows:

Table 1. Reading skill competencies assessed by STAR

Types of tests	Reading skill	Skill demonstrated by
Letter knowledge	Alphabet knowledge	To assess children's letter knowledge. Children need to read all letters A-Z and pronounce them correctly. The total number of letters is 26
Most frequently used/ reading the familiar word	Word recognition	Reading words drawn from a list of common words used in the Grade 3 Textbook. Children need to read the 10 most frequent words in <i>Bahasa Indonesia</i> .
Non-word reading/ reading meaningless word	Decoding	Assess children's ability to read words without meaning. Children need to read 10 words without meaning to assess their decoding skills.
Oral Reading Fluency	Oral reading ability	Reading a Grade 3 text with accuracy and at a reasonable rate of speed. The text consists of 119 words in <i>Bahasa Indonesia</i> .
Reading comprehension	Reading comprehension	Responding correctly to fact retrieval. Students need to answer 4 out of 5 questions related to the reading story in <i>Bahasa Indonesia</i> .

Sources: adapted from STAR Criteria and contextualized into Bahasa Indonesia

The STAR tool uses an offline application called Tangerine to collect data. 10 most used words need to be read by students in this assessment and 10 meaningless words to assess students' skills in decoding a word. After reading the most-used words and decodable words, students are asked to read a short reading passage consisting of 119 words to assess reading accuracy and reading fluency. STAR also assesses students' reading comprehension. Students are categorized as readers with comprehension if they can answer 80% of questions correctly. There are 5 questions to address children's reading with comprehension based on the previous reading text.

Meanwhile, the STAR survey was distributed to 800 students (a total of 404 students surveyed in 2021 and 2022 treated as before and after intervention and another 396 students surveyed in 2023 to see the consistency of the result) and 92 teachers/principals. There is also an interview for a total of 12 participants consisting of teachers, the principal, and District of Education (DoE) staff. It is important to evaluate whether the analysis should address the research problem or not. Analysis should also address the implications and link to the research problem. The argument is also based on theoretical framework, data, and valid information.

Population and sampling

This present study examines the influence of school-based education on student's reading competency in Landak District, West Kalimantan. The main

target population is students in grades 3 in 28 primary schools in Landak. The name and the number of the school were selected based on the recommendation of the DoE (District of Education) on which the schools need literacy intervention support and are located in rural areas, but the 800 students were chosen randomly. All participants voluntarily take part in this study and all the data are processed anonymously to ensure confidentiality. The participants are given freedom to withdraw their participation at any time. This research was carried out from September 2021 to June 2023. Sampled students were enrolled in the literacy intervention from grade 3 elementary school.

Procedure of intervention

School-based literacy program is a program designed to improve students' reading comprehension through school and community interventions. This present study focused on schools through a PD program involving teachers and principals.

The intervention emphasizes contextual learning materials, incorporating local cultures into literacy instruction. Teachers are trained to teach five core reading competencies—letter knowledge, phonemic awareness, vocabulary, reading fluency, and comprehension—using strategies tailored to their local context. Formative assessments are integral to diagnosing students' literacy levels and guiding instruction. Principals play a vital role in supporting the program by supervising literacy activities and fostering a friendly and effective learning environment.

Creating a conducive reading environment is another key focus of the program. Teachers are equipped to develop localized literacy materials and encourage children's reading habits by creating books and establishing reading corners in classrooms. These materials are specifically designed to support the five key reading skills. Students and teachers collaborate to promote literacy activities, integrating cultural elements into their learning process. Principals further assist by modeling effective practices and reinforcing the importance of literacy within the school.

Program sustainability is ensured through government involvement and collaboration with education stakeholders. Local education authorities provide workshops and train supervisors to support literacy interventions. Best practices are shared through workshops involving academics and practitioners. The year-long training program allows teachers to practice and refine their skills, ultimately enhancing their pedagogical capacity and fostering a literacy culture in schools.

In this intervention, teachers will improve their teaching practice to support children's literacy. Teachers will be trained to immerse reading skills in daily lesson plans and activities. In this training, teachers can reflect on their capacity to teach students. Teachers are trained within three months. The trainer for school-based literacy programs is called Master Teachers. There are 10 master teachers in the Landak district selected based on literacy teaching assessment and the willingness to implement literacy activities in their school. The master teachers received 4-day training to teach five core reading competencies and 4-day training in the Teaching and Learning Materials component of the school-based literacy program involves the creation of locally relevant and grade-appropriate reading materials. Where there is limited availability of children's books, teachers are given the tools to create local and contextualized learning material for their children such as story books,

games, songs, and posters. These locally produced teaching materials use local materials to promote local ownership and increase the sustainability of school-based literacy programs.

After the training, master teachers will be required to implement 5 core reading competencies in their classrooms. Furthermore, these 10 master teachers will train other teachers in 28 schools through school in-house training. With guidance from master teachers, teachers will have the opportunity to observe, discuss, and practice five core reading competencies. The learning process and discussion in the schools are led by school principals. Teachers model how to teach literacy in each key reading skill and have a discussion on how they apply those skills in daily learning activities. The school-based literacy program is designed to enhance literacy instruction and can be embedded in the national curricula. Master teachers and school principals will lead the process of training and reflection process of implementation of school-based literacy programs in the schools. In this program teachers observe, discuss, and practice techniques for building children's letter knowledge, phonemic awareness, fluency, vocabulary, and comprehension during reflective workshop sessions. The intervention was also focusing on making use of the learning environment to support student's literacy. Teachers were trained to support students in using their mother tongue and facilitated the design of learning media to be more inclusive based on students' mother tongue.

The principals also received leadership training, literacy training, and the design of school-based literacy programs based on their needs and assessments. The 4-day principal training focuses on literacy program intervention. The principal learned basic skills to create literacy programs within the schools to support teachers' literacy programs at the school levels. The principal also learned 5 core reading competencies and formative assessment. The principal is guided to assess the challenges of literacy implementation in the schools and propose literacy interventions to tackle these needs. The literacy interventions in each school are diverse ranging from literacy competitions, creating a reading corner in the classroom, and additional literacy classes for students with low literacy skills. Besides teachers and principals, several school supervisors were also trained to monitor and evaluate literacy activities to ensure the continuity of the intervention PD program.

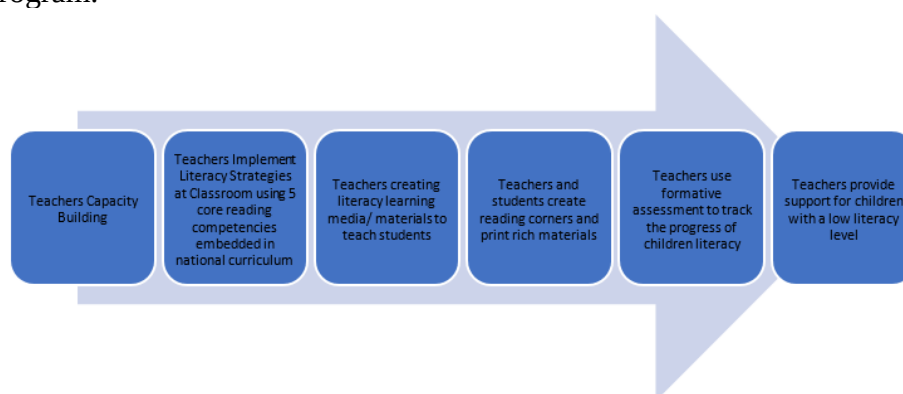


Figure 1. The implementation process of a literacy program

This cycle of intervention is conducted with a one-year literacy program and will be repeated in the second year of intervention. After the capacity-building

process, teachers teach students all instructional strategies in their daily learning activities embedded using the national curriculum. Teachers also create contextual literacy material to help children increase their literacy competencies during daily learning activities. Through formative assessment, teachers can identify and classify students as non-readers, beginner readers, and readers with comprehension. Teachers will support children who are categorized as non-readers and beginner readers with extra classes to assist them in literacy or using differentiated learning. Children and teachers also created more print-rich material to be displayed in the classroom and created reading corners to support their literacy activities. In this intervention, formative assessment can be used by teachers to assess children's reading levels and evaluate their literacy learning needs based on those assessments. Assessments are used to inform children's strengths and weaknesses and help staff and teachers tailor their lessons to meet children's needs in their daily learning.

Data sources

The data sources comprised primary and secondary data. The primary data sources are students' literacy competencies through STAR, and key informant interviews involving teachers, master teachers, principals, and staff of the District of Education. Each interview was conducted around 30-45 minutes. The secondary data is the observation of literacy education materials available in schools.

Table 2. Data sources

Data sources	Sample	Participants	Use for
STAR (School-based test about reading)	800	Students	Assessing student's literacy competencies
Interview	12	Teachers, Principal, and District of Education Staff	1. Presenting the process of literacy in classrooms and schools 2. Understanding enable and barrier implementation literacy program
Survey	92	Teachers and Principal	1. Presenting the process of literacy in classrooms and schools 2. Understand enable and barrier implementation of a literacy program

Data analysis

Student literacy competencies analyses using the STAR Framework provide information in quantitative form to explain children's reading competencies. For the qualitative data, thematic analysis was employed to analyze the verbatim transcript data from the key informant interview (KII). The themes gathered from the interview and survey will be analyzed for the relationship between them. The themes will later be reviewed to address the research questions. For the report production, it wraps up the whole analysis before writing the result and discussion.

Findings and Discussion

Students' literacy competencies before and after the intervention

Based on the intervention that was carried out during 2021-2023, there is an improvement trend in students' literacy in all 5 literacy competencies namely letter knowledge, most used word, decodable word, reading fluency, and reading

comprehension. Looking into more details below are explanations of each reading skill.

Table 3. Students reading competencies

Literacy Aspects	2021 (n= 404) Students grade 3	2022 (n=404) Students grade 3	2023 (n=396) Students grade 3
Letter Knowledge			
The proportion of students who can read letters A 100% correct	18.3%	33.9%	38.8%
The average of letters that students can read correctly	21 letters out of 26 letters	24 letters out of 26 letters	24 letters out of 26 letters
Most Used Word/ Reading Familiar Word			
The proportion of respondents who can read the 10 most-used words 100% correct	24%	45.8%	51.5%
The average of words that students can read most-used words correctly	5 words out of 10 words	8 words out of 10 words	8 words out of 10 words
Decodable Word/ Reading Meaningless Word			
The proportion of respondents who can read 10 meaningless words correctly	14.8%	22.2%	21.4%
The average of words that a student can read meaningless words correctly	4 words out of 10 words	6 words out of 10 words	7 words out of 10 words
Average reading fluency	21 words per minute	43 words per minute	45 words per minute
Students average reading words in reading passage	54 words out of 119 words	83 words out of 119 words	94 out of 119 words
Proportion of reader			
The proportion of students who can read at least 5 words correctly within 30 seconds	48%	73.5%	86.87%
Reading comprehension			
Proportion students who can answer correctly 4 out of 5 questions related to the reading passage	25.74%	47.52%	55.81%

Based on Table 3, there is an improvement in all aspects of literacy measured across the aspects of letter knowledge, most-used words/ reading familiar words,

reading fluency, and reading comprehension. There is an increase in the number of students who can read 26 letters from 18.3% to 38.8%. Previously, students were able to read 21 letters in 2021, but this increased to approximately 24 letters in 2023. The letters that are still a challenge for students to recognize from 2021 to 2023 are the letters l and q. This may be because these words are difficult to read or have limited relevance in their daily life.

This present study thus follows the STAR that uses the 10 most-used words, which often appear in schooling/daily life. In 2023, students are, on average capable of reading eight words, which increases from the initial data in 2021, in which students used to be able to read an average of 5 words. Among the difficult words are *pakaian* (clothes) and *keluarga* (family). The students may have difficulties in reading these words because they have 3 syllables with different vowels. The proportion of children who can read 10 words increases significantly from 24% in 2021 to 51.5% in 2023.

STAR also uses 10 meaningless words to assess children's decoding ability. In 2023, the average number of words that students can read is 7 words, an increase from the baseline data where previously students could only read an average of 4 words. The word that is still a challenge to read is *Ngupal*. Again, it is apparent that 'L' is among the challenges for students, perhaps because the letter shares similarities with the capital 'I' and number '1' (one). Interestingly, there is only a slight increase in the proportion of children who can read meaningless words from 14.8% in 2021 to 21.4% in 2023. This may happen because children find difficulties in reading a word that does not correlate with their previous knowledge or daily life.

Then, students are asked to read the reading passage to assess their reading accuracy and fluency. Students will be identified by their level of reading. Based on the result in 2021 the average of words that can be read by students is 54 out of 119 words. In 2023, students can read approximately 94 words out of 119 words. It is worth noting that Bahasa Indonesia (BI) does not have a particular standard of reading words per minute. Based on the survey results in 2023, students are averagely capable of reading short passages within one minute at 45 words per minute. This is a significant increase from the 2021 baseline data where the number was almost doubled from only 21 words per minute. There is an improvement in the proportion of students who are categorized as a reader from 48% in 2021 to 86.87 % in 2023. This study supports Sustainable Development Goals (SDG) 4.1.1 indicators which are the proportion of children in grades 3 achieving a minimum proficiency in reading. There is also improvement in the number of students who are categorized as readers with comprehension from 25.74% in 2021 to 55.81% in 2023.

Supporting factors and barriers to improve student literacy

Improvement of teacher motivation and pedagogy practices to implement a literacy program

In this study, teachers are equipped with capacity-building literacy, especially in teaching literacy and developing contextual reading and literacy materials. After receiving capacity building, teachers are enthusiastic to implement literacy programs in the classroom. Teachers use various learning activities and games to teach students literacy. Teachers show a positive attitude towards teaching literacy

to students, which further makes students more enthusiastic about learning literacy. This study also supports another study that teachers' professional development may effectively influence teachers' practice (Asih, et al., 2022; Fischer, et al., 2018). Another study confirms that teacher professional development influences student achievement (Salas-Rodríguez & Lara, 2023).

Teachers' commitment plays an important role in teaching students literacy. If teachers are committed, they will implement their ideas and creativity at schools - School principal Landak.

Teachers who receive literacy training are more confident with their teaching practices and use literacy learning media. Teachers are more confident in creating learning media to support children's literacy learning that is appropriate to students' literacy level and students' specific needs based on previous diagnostic tests, related to 5 core reading competencies. Teachers are also more encouraged to use local materials available nearby to implement literacy.

Before training, I found difficulties assisting children, now I can assist children from the beginning such as knowing letters. I make learning media from simple material available from the environment, so children are paying more attention and being more serious during learning in the classroom. -Teacher in Landak



Figure 2. Literacy learning media based on local materials to teach words and letters

Increase availability of print-rich environment.

Teachers also stated that they are more confident in teaching literacy because they are trained and can create learning media to support students' literacy. With the intervention, almost all schools have a more print-rich environment displayed in the classroom. This creates an environment where students have a positive attitude toward learning, reading, and writing. Teachers and students collaborate to create learning media and print-rich material that is displayed in the classroom. By using learning media, students are more engaged in learning and enjoy literacy

activities. Children's access to literacy learning media is improved. This study supports research findings that the availability of literacy materials plays an important role in enhancing students' literacy (Solihin, et al.,2020), especially in schools in rural areas where the availability of children's books is limited.

Teachers had also arranged their classrooms to look and feel more literate through a reading corner. They also created diverse learning media, taught in a more fun way, introduced games, and practiced contextual learning.

Students can read, speak, write, and solve problems. The most significant change is students have the confidence to read in front of the classroom.
-Teacher in Landak

Based on the surveys we distributed to the teachers; several factors were found to influence the improvement of students' literacy. Among the factors are the use of teaching and learning media (including student books), teaching methods, and the availability of reading corners. This study also supported other studies in other countries such as Australia (Neumann, et al., 2013) and Malaysia (Ferna & Jiar, 2017) stated that a print-rich environment had a positive impact on children's literacy skills. Teachers were shown to demonstrate diverse teaching strategies to enhance literacy, including the use of educational games. There was also improvement in the number of reading corners in the classrooms, which better supports students' reading habits. Teachers had improved the classroom setting with print-rich material displays. At the school level, the literacy program includes 15 minutes of reading time before the first subject starts. Altogether, these activities and facilities seemed to engage students with regular reading habits.



Figure 3. Reading corner in a classroom in a targeted school

Students enjoy and are confident in learning literacy.

With the literacy intervention, students' behavior changes to be more enthusiastic about going to school and learning, are more confident, creative, and eager to learn. In terms of literacy, students can know letters, read comprehensively,

and improve their reading fluency. Students show improvement in their enthusiasm and motivation for learning. There is between teachers' motivation to teach and students' motivation to learn (Ryan, & Deci, 2009). Also, through teachers' facilitation, students show an improvement in reading habits in schools according to a teachers' survey. Children are also enthusiastic to read in their reading corner and create print-rich material. Based on our observation, there seemed to be changes in students' learning motivation because of various joyful learning approaches from their teachers.

With various learning media and joyful learning methods, students are shown to be more confident in their literacy skills, particularly when they can recognize letters and read fluently. With the availability of literacy contextual learning material, students learn to have more motivation to learn and are more active in classroom learning participation, as stated from the transcriptions below:

Students are more active in learning because teachers create literacy learning media, learning in the classroom is joyful and becomes student-centred learning – Teacher in Landak

Students are enthusiastic to read and go to the library. What is more significant, students can retell a story in their own words. -Teacher in Landak

Table 4. Proportion of children's reading activities

Children literacy activities	2021 (n= 404)	2023 (n=396)
Children read alone in the past week	54% (219 students)	78% (311 students)
Children read with a friend in the past one-week	49% (200 students)	86% (344 students)

It is found literacy programs at schools may improve children's reading activities. The proportion of children read alone increased from 54% in 2021 to 78% in 2023. This means that the literacy program may improve children's literacy activities both children read by themselves and with their friends.

After I teach them using literacy media, students' motivation to learn increases. With the availability of reading corners and reading material in the classroom, students read frequently and start to love reading – Teacher in Landak.

The use of literacy formative assessment and differentiated learning

Formative assessment can also be used as a diagnostic tool for children's literacy level, especially benefitting children with low literacy levels. Teachers' confidence increases because they can conduct formative assessments of 5 core reading competencies namely letter knowledge, phonemics, vocabulary, reading fluency, and reading with comprehension. With formative assessment, teachers can identify children's strengths and weaknesses and can provide differentiated learning or assist them individually. Teachers were also shown to guide students' literacy based on their needs through formative assessment. By doing so, teachers could measure the current literacy level of their students and teach accordingly. Previous studies also show that differentiated learning can improve student literacy

(Indrawatiningsih et al., 2024). It was also noted during the observation that teachers guided students in learning literacy and gave them support and motivation. This study also supported another study that the use of formative assessment may have a positive correlation with students' assessment (Andersson & Palm, 2017).

With a formative assessment, we can understand and evaluate the progress of students' literacy. We can support students who have a low literacy ability.
- Teacher in Landak

Principal support to professional development and literacy program

In addition to teacher training, capacity building for principals focuses on school leadership and supervision to develop literacy programs in the schools. We found that principal involvement is critical for the continuation of the literacy program in the schools. Principal's roles are crucial to lead the program and monitor teachers' capacity to teach literacy and students' literacy improvement.

Another study by Bredeson (2000) suggests that principals play an important role in teachers' professional development through engagement in school programs and nurturing learning communities in school. Furthermore, improving principals' capacities and support can help them prioritize strategy and budgeting school programs that further impact student achievement (Rowland, 2017). Through capacity building, the principals support literacy as a priority program in their schools. Principal support plays an important role in literacy programs at schools. Principals give teachers motivation and direction for teachers for literacy programs at the school level. Principals can support a culture of collaboration among teachers in school (Salas-Rodríguez & Lara, 2023). If teachers conduct literacy activities at schools, principals are responsible for organizing teachers, schools committed and parents to together implement and reflect literacy activities at schools.

My principal is a literacy-trained facilitator as well; she frequently provides suggestions during literacy activities. We are all enthusiasts for creating literacy displays at the school. -Teacher in Landak

The principal supports the implementation of the literacy program at school. Principals supervise teachers teaching literacy, so we have a high motivation to do learning innovation at school. -Teacher in Landak

I give motivation to the teachers and invite the school committee to work together to improve children's literacy. I encourage parents and the school committee to support literacy activities at the schools. We work together to create learning media for literacy. -Principal-in Landak

Literacy programs at schools depend on the needs of each school such as providing children with extra classes in literacy for students who are needed, providing literacy competitions, creating reading corners, and displaying classes with print-rich material. Principals were responsible for the evaluation of each literacy program. The support of the principal in the literacy program also included the allocation of School Operational Assistance Funding (Bantuan Operasional Sekolah/ Dana BOS) for literacy activities at the school level.

Support from District of Education (DoE)

The school supervisors and DoE staff together regularly monitored schools' progress in literacy. Accordingly, the school supervisors were also committed to supporting literacy due to the agreement between the DoE and MoECRT. Multiple follow-ups were carried out by teachers in their classrooms through literacy games, reading story books, instructing students to do peer-reading, and creating reading corners.

The DoE support released a Statement Letter (*Surat Keterangan*) for master teachers to conduct socialization both for school principals and teachers. DoE also supports by providing a circular letter (*Surat Edaran*) for school principals to focus on literacy programs in their schools including using the budget of BOS to implement literacy programs at their schools. The DoE also routinely conducts webinars and socialization for the importance of children's literacy

The support from DoE is encouraging principals and through assisting with school supervisor -Teacher in Landak

DoE motivates teachers through offline and online meetings and encourages schools to focus on both literacy and numeracy including through extra lessons for children with a low literacy level and distributed circular letters (surat saran) so that schools can focus on literacy activities - DoE representative in Landak

Parental support in student literacy

According to the surveys we distributed to the teachers, few participants mentioned the important role of parents in supporting students' literacy.

Parents support the creation of reading corners, we collaborate with children and parents to make print-rich and learning media to be displayed in the classroom. Parents play a role in motivating children to go to school. Teacher in Landak

On the other hand, other teachers reported that some students might receive a lack of parental support during their home learning. This might also be caused by the absence of capacity-building activities to support literacy in the community, which might be useful for parents and caretakers. Studies reveal that parents can support children's literacy at home through various activities such as reading them stories or creating reading corners at home (Wijaya et al., 2020; Wijaya et al., 2022) play an important role in improving children's reading competencies, especially in letter recognition and naming familiar words (Wijaya et al., 2022).

Inadequate school operational assistance (Dana BOS)

In implementing literacy programs, schools usually use *Dana BOS*. However, not every school has adequate *Dana BOS* funding since the amount of *Dana BOS* depends on the number of students registered at schools. This means, that schools with have a small number of students receive a small amount of *Dana BOS* that will only be used for operational purposes so they cannot be used for literacy activities and afford children's books. A study also confirms that a budget for buying books for students in primary schools may impact student achievement (Gorard et al.,

2022). The impact of learning resources improvement on students' literacy is very crucial so improving literacy resources at schools is important.

Conclusion

This present study proves that continuous intervention in teacher capacity building/ teachers' professional development could enhance teachers' ability to teach literacy or enhance their pedagogy practices, which ultimately improves students' reading skills including reading fluency and children's reading comprehension, especially for schools located in rural areas with limited resources. The proportion of students who can read increased from 48% in 2021 to 86.87% in 2023. Teachers' motivation and commitment play an important role in the success of literacy programs in the classroom and school' level. There is an increase in children's motivation reflected in data on the proportion of children reading alone from 54% in 2021 to 78% in 2023. Teachers' commitment also can be enhanced by the support from the school principals. While teachers play an important role in teaching children reading competencies, principals have a role in supporting literacy programs at the school level. The responsibility of principals also invites the school committee and parents to actively support children's education.

To improve children's reading competencies, it is also crucial the support from parents to support children's literacy activities at home. Schools also need to be supported with the availability of books including children's books to improve children's reading interest and reading competencies, especially schools located in rural areas where the availability of physical books is limited, and schools have limited budgets to purchase the children's books. In terms of education policy in literacy/ reading fluency, it would be better if there is a minimum standard of the number of words per minute in Bahasa Indonesia for students in early grades of primary schools to identify the minimum standard to assess their reading fluency.

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