

## Analysis of Needs for Developing KAPAL PINISI Application (Smart Literacy Adventure Activity) Based on Local Wisdom to Form 6C Skills of Indonesian Society

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January 17, 2025  
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**Abstract:** Basic literacy is an important foundation in education in Indonesia, but there are still challenges in literacy skills for students and teachers. Local wisdom, which should be a relevant source of learning, is often ignored in the curriculum. This study aims to describe: (1) the need to develop the KAPAL PINISI application (Smart Literacy Adventure Activities); (2) obstacles encountered in developing the application; (3) support for the development of applications based on local wisdom, with a focus on the formation of 6C skills (Critical thinking, Creativity, Collaboration, Communication, Citizenship, Character) in Indonesian society. The data collection method used a need assessment questionnaire distributed to students, teachers, and parents in several regions. This study used a mixed method approach (qualitative and quantitative) with 200 fifth grade students and 40 teachers in ten elementary schools spread across Indonesia. The data analysis technique used descriptive statistics on quantitative data and source triangulation techniques (Miles and Huberman) on qualitative data. The results of the analysis show that respondents want an application that integrates local wisdom, as well as interactive features that support collaborative and communicative learning. The obstacles faced by teachers are; never having used teaching materials based on local wisdom that are integrated into the android application. The support for the development of the KAPAL PINISI application is that the principal provides training facilities and workshops based on local wisdom to teachers, and helps teachers be creative in making teaching media. The development of the KAPAL PINISI Application based on local wisdom is an important and effective step. So that the results of the study can be used as a reference for further research in the form of developing teaching media for the KAPAL PINISI Application based on local wisdom in Indonesia.

**Keywords:** Basic Literacy, Local Wisdom, Android Applications

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### PRELIMINARY

Basic literacy is a very important foundation in education, both for teachers and students in elementary schools (Erfan, Maulyda, and Affandi 2021). Basic literacy is not only about mastering basic techniques such as reading and writing; but also about

understanding basic concepts relevant to mathematics and science. Teachers who have good basic literacy can provide effective instructions and help students understand the material better (SARI 2020). Basically, all students are expected to be able to read and write well, while teachers have adequate pedagogical skills to support the teaching and learning process (Bukit and Tarigan 2022). However, in reality, there are still many students who have difficulties in basic literacy and teachers who are less trained in using effective teaching methods. To overcome this problem, regular training is needed for teachers and the development of attractive learning resources. Thus, increasing basic literacy can be achieved, which in turn supports national education goals (Sukmadinata 2019).

Basic literacy has also become a concern at the community level (Wuryani and Nugraha 2021). In everyday life, every individual in society is expected to have adequate literacy skills, as well as good access to information (Kurniasih 2019). However, the problem faced is the low interest in reading among the community and limited access to quality information sources (Sari 2021). Problems also arise from information that is rigid, unclear and too difficult to understand for the general public who may not have a good educational background (Husni 2020). To overcome this challenge, community-based literacy programs and the provision of libraries that are easily accessible, and contain materials or information that are easily understood can be a solution (Wahyu 2019). This will support the development of literacy skills in the community, so that they are better prepared to face the demands of the times (Puspita 2022). Literacy learning can be learned easily with cultural elements in it, or you can study culture to improve cultural literacy (Pratiwi 2023). Local wisdom is an important aspect to consider in learning in elementary schools (Suryani 2019). Basically, local wisdom can be a source of inspiration and relevance in teaching materials, so that students are more connected to their local culture (Mardiana 2021). However, many schools have not integrated local wisdom into learning as a teaching medium, and ignore the potential of local culture (Iswandi 2020). To overcome this problem, it is necessary to develop learning media that includes local wisdom and training for teachers to implement it in learning (Rizki 2022). Thus, students not only learn about general knowledge but also appreciate and understand the local cultural wisdom of the local area (Hidayati 2020).

Integration of local wisdom in learning can be strengthened by utilizing gadgets in the teaching and learning process (Laila and Saidah 2020; Setiawan 2020). When used creatively and innovatively, gadgets can support interaction and collaboration among students. However, gadgets are often misused for unproductive things, which interfere with the learning process. Students tend to use gadgets to play online games continuously without realizing that gadgets can be used as a fun learning medium. The solution to this problem is the development of interactive and interesting educational applications, which encourage students to use gadgets positively (Laila, Asri Budiningsih, and Syamsi 2021). In this way, students will be more interested and involved in learning (Nugroho 2022) In the context of the development of educational technology, the development of interactive quiz applications based on Android is very important (Arim Septiawan, Mujiwati, and Damariswara 2022). Ideally, this application can improve students' understanding of the subject matter in a fun way (Saidah and Damariswara 2019).

However, there are still few applications that integrate local wisdom and support basic literacy effectively. Therefore, it is necessary to develop an application specifically designed for students in Indonesia, which contains relevant and interesting content, and integrates elements of local wisdom (Damariswara and Saidah 2021). Thus, the application can contribute to the development of 6C skills, such as creativity, communication, and collaboration, which are greatly needed by modern society (Pratiwi 2023) Based on the explanation of the importance of cultural learning for children and the close relationship between education and culture, the development of teaching media in the form of an android application is a relevant step. The author is interested in conducting research on the analysis of the development needs of the KAPAL PINISI Application that promotes local wisdom in Indonesia for elementary schools, with the aim of improving the ability of basic literacy skills 6C. The results of this study will be the basis for further research, namely the development of the KAPAL PINISI Application based on android to form the 6C skills of the Indonesian Community.

This research on the analysis of the development needs of the KAPAL PINISI application aims to identify specific needs in basic literacy learning 6C, namely Critical thinking, Creativity, Collaboration, Communication, Character, and Citizenship. By integrating local wisdom, this application is expected to improve students' understanding of local culture and values to develop literacy skills that are important for students to

learn. The benefits of this research are to provide insight into the development of learning media that are more relevant and interesting for students, as well as to assist teachers in creating more interactive and effective learning experiences. In addition, this application also has the potential to strengthen national cultural identity, increase students' interest in learning, and encourage the development of 6C skills that are crucial for students' futures.

## **METHOD**

In this study, a mixed method approach was used that combines qualitative and quantitative methods. This approach is applied when social conditions are holistic, but can still be classified, or in social situations that are not natural and allow for treatment. The purpose of using this mixed method is to analyze the results of the study with a different perspective, in accordance with the view that mixed research involves the collection of quantitative and qualitative data which are then analyzed separately. The results of this study were obtained by comparing and connecting quantitative and qualitative data.

Quantitative data collection was carried out through questionnaires, while qualitative data was collected through observation, interviews, and documentation. The subjects of the study were students and teachers at SDN Ngampel 2, SDN Mlancu 2, SDN Besuk 1, SDN Bandarlor 3, SDN Bagelenan 3, SDN 95 Gresik, SDN 22 Lanjau, SDN 15 Merawang, SD Kristen Abat, SDN Ngadirejo 5 Kediri City. Data collection was carried out through observation, filling out questionnaires and interviews.

The data analysis technique in this study used quantitative and qualitative approaches to produce a holistic understanding. Quantitative data were analyzed using descriptive statistics, where the results of filling out the questionnaire using the Likert scale were processed to describe students' and teachers' perceptions of local wisdom in education. The Likert scale allows researchers to measure the level of agreement or disagreement of respondents to various statements, which are then presented in the form of tables and graphs to facilitate analysis (Sugiyono 2018). The responses to each question, which are given based on the Likert scale, produce assessments ranging from negative to positive in a gradational manner. For more details, the Likert scale is shown in Table 1.

**Tabel 1. Likert Scale Criteria Table**

Qualification	Mark
Very less	>25
Less	26-45
Enough	46-65
Good	66-85
Very good	86-100

Meanwhile, for qualitative data, analysis was carried out using the Miles and Huberman model, which includes the stages of data collection, data reduction, data presentation, and drawing conclusions.

## RESULTS AND DISCUSSION

### 1. Need for Development of PINISI SHIP Application

In planning the development of Android-based applications for educational purposes in elementary schools, several important points need to be considered based on interviews that will be conducted with teachers. The main reason that emerged was the lack of understanding of application technology, which caused obstacles in the implementation and use of applications in the classroom. As evidence, although many teachers are aware of the importance of technology in supporting learning, teachers often find it difficult to operate devices or integrate applications with existing curricula. Therefore, a more systematic approach is needed to provide training and support the development of technology skills for teachers. Thus, the development of Android-based applications requires more attention in terms of training, technical support, and understanding of specific needs in elementary schools so that the application can be utilized optimally in supporting the teaching and learning process. The results of interviews regarding the needs for developing the KAPAL PINISI application are shown in table 2 below.

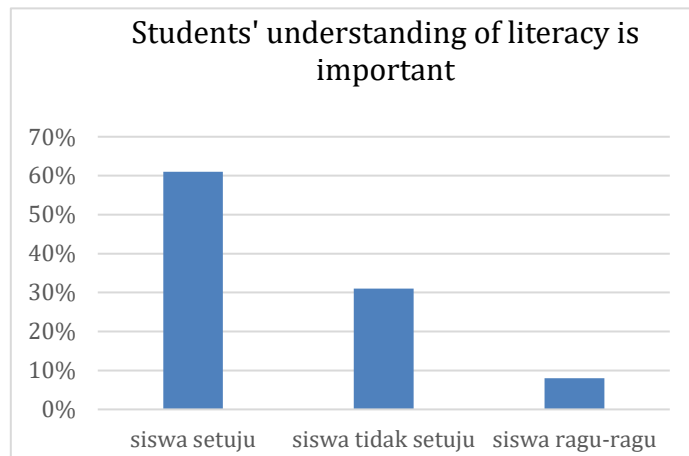
**Tabel 2. Development Needs Interview Result Data**

Code	Data and Informants
Teachers' understanding of Android-based application learning media	"I think most of the applications currently used are not relevant enough to the local context. Many applications used in class are more focused on general materials and have not incorporated local wisdom which is important for introducing cultural values to students" (teacher, SU 45 years old)
	"I feel that the current applications often do not support the development of collaboration and communication skills between students. The ideal application does not only focus on individual learning, but also provides space for students to interact and work together in groups." (teacher, Aqs 32 th)

	“I think it is easy to use the application, especially for students in younger grades. However, the applications currently used are often too complicated and difficult for students to understand, who basically need a simple and easy-to-understand interface.” (teacher, MN 35 years old)
Obstacles experienced when developing Android-based applications	“If implementing an Android application here, there are obstacles in developing the application, especially related to limited resources and training. Many teachers in this school have not received adequate technology training to be able to develop or even integrate Android applications in learning effectively.” (teacher, SF 27 years old)
	“actually also want to use the application in learning, but there are things that hinder the development of this application. One of them is the problem of limited access to adequate Android devices, especially in areas with limited educational facilities.” (teacher, RN 30 years old)
	“ Here, there is a lack of support from the school in terms of providing infrastructure, such as adequate hardware (tablets or smartphones). In addition, the lack of special training for teachers is also a major obstacle in using Android applications in the classroom.” (teacher, TS 33 years old)
Support for android-based application development	“in the school where I teach already has Android device facilities, such as tablets and smartphones, although the number is limited. In addition, my colleagues and I have participated in technology training held by the local education office. The trainings provide a basic understanding of the use of learning applications.” (teacher, SK 29 years old)
	“in schools have a fairly stable Wi-Fi network and Android devices that can be accessed by students. In addition, the school also supports the use of technology in learning and often provides a budget to buy new devices.” (teacher, FD 30 years old)
	“ In my teaching place, the school has provided support in the form of providing several Android devices and internet access to support technology-based learning.” (teacher, 24 years old)

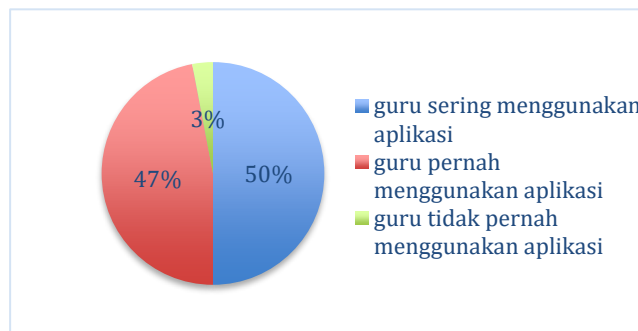
It can be concluded that although there is a strong understanding of the potential of Android-based learning media in improving learning, there are several needs that must be met, such as applications that integrate local wisdom and support 6C skills. The main obstacles faced are limited resources, infrastructure, and lack of training for teachers. The support for developing Android-based applications in elementary schools is sufficient, although there are still several challenges that need to be overcome. All teachers interviewed acknowledged the support from the school in the form of Android device facilities and adequate internet access. In addition, teachers also receive support in the form of basic training on technology. However, there is a need to further develop more specific training on integrating applications in learning, as well as expanding access to adequate devices so that all students can feel the benefits. The KAPAL PINISI application, which combines local wisdom with technology-based learning, is expected to utilize this support to achieve the goal of developing 6C skills in students. From the analysis conducted on the collected data, it was found that the KAPAL PINISI (Smart

Literacy Adventure Activity) application is very important to be developed as a learning medium that integrates local wisdom and can form basic literacy skills in students, teachers, and the general public. The results of the analysis also stated that the need for this development was a good response from students to Android-based applications as a learning medium. This is in accordance with the graph below.



**Picture 1. Student Understanding Data on the Importance of Literacy**

In the world of education, the development of innovative learning media is very necessary to face the challenges of the times and meet the needs of students. One solution that can be implemented is the use of Android applications based on local wisdom that integrate basic literacy 6C (Critical thinking, Creativity, Collaboration, Communication, Citizenship, and Computational thinking). This application not only functions as an interactive and interesting learning tool, but can also introduce and preserve local cultural values contained in local wisdom. By integrating basic literacy 6C, the KAPAL PINISI application (Smart Literacy Adventure Activities) can help students develop 21st century skills that are very much needed in global life, while strengthening students' understanding of culture and literacy. In addition, teachers also often use application-based learning media to attract students' interest and enthusiasm. However, in the application of this media, local wisdom has not yet been integrated into it.



**Picture 2. Data on the Use of Applications as Learning Media by Teachers**

In learning, teachers have used android-based applications to explain the material. As many as 50% of teachers who filled out the questionnaire often used applications as learning media, 47% of teachers had conducted learning using applications, and only 3% of teachers had never used android-based applications in learning. According to the teacher's confession during the interview, for teachers, learning using android-based application learning media would be more interesting for students and increase students' enthusiasm for learning. So that learning objectives can be realized properly. However, there are teachers who find it difficult because their age and development abilities that are not continuously honed are obstacles to the sustainability of the development of this android-based application learning media. In addition, the learning used still does not integrate local wisdom found in Indonesia. Students are presented with other cultures so that they cannot recognize and understand their own regional culture. Therefore, it is necessary to develop android-based learning media that integrates local wisdom and contains basic literacy in it. Another thing that makes the development of the KAPAL PINISI application necessary is the response of respondents who on average consider it important to learn literacy with learning media that can be easily understood. In the research that has been done, the need to develop this application is based on the results of the study which states that the targeted schools have understood the concept of basic literacy well, and feel that basic literacy is important to be studied in more depth. Especially basic literacy that integrates local wisdom in the development of this application. By integrating local wisdom in the learning media that will be used by students, students can better recognize and understand the local wisdom found in Indonesia.

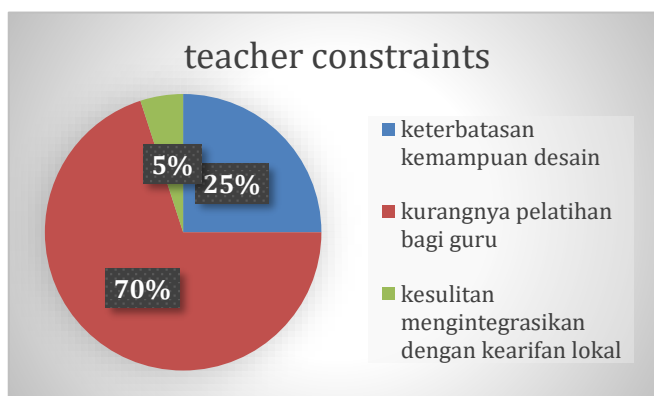


**Tabel 3. Data Regarding Teachers' Understanding of Android Application-Based Learning Media.**

	1	2	3	4	5	6	7	Jumlah	Nilai
Amount	143	154	94	157	85	134	71	838	2394,28
SD	0,478597	0,563285	1,129731	0,551291	0,8616	0,600059	0,7926		
Average	4,205882	4,529412	2,764706	4,617647	2,5	3,941176	2,0882	24,647	70,4201

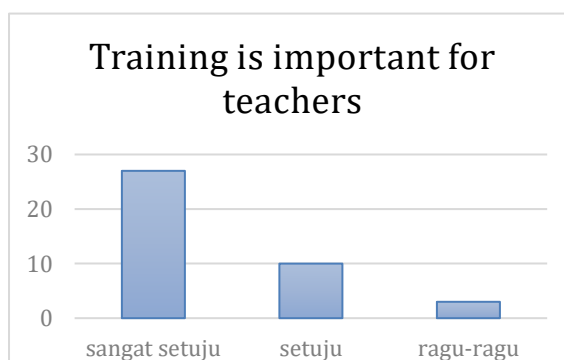
## 2. Constraints in Developing the KAPAL PINISI Application

In this application development activity, it is necessary to improve the ability of teachers to develop learning media according to the needs of students. In the increasingly rapid development of technology, students are now more interested in learning that is integrated with technology. For this reason, there needs to be training aimed at teachers related to the development of learning media.



**Picture 3. Data on Teacher Constraints in Developing Android-Based Applications**

The results of the analysis of this aspect show that teachers experience difficulties in development, this is indicated by the existence of obstacles in the lack of media development training for teachers by 70%, so that training is needed for teachers on developing Android-based applications by integrating local wisdom to form basic literacy skills.

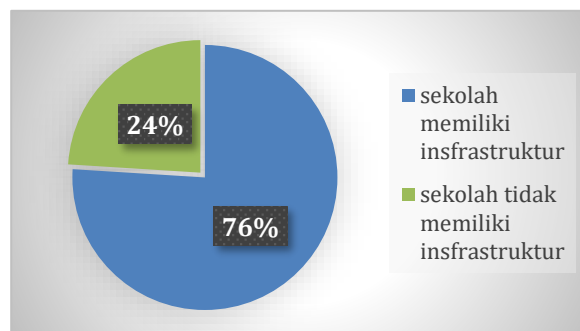


**Picture 4. Data Importance of Training for Teachers**

Based on the analysis that has been done on teacher responses regarding the importance of training for application development, namely 21 teachers strongly agree, 10 teachers agree and 3 teachers are undecided. From these results it can be concluded that this training is very important to do. Of all the teachers who filled in, there were teachers who were hesitant who were old teachers so they still needed to adapt to the very rapid development of digital technology. However, with the enthusiasm they have to develop education, teachers can take part in training in developing Android-based applications that are integrated into local wisdom. In general, there are no obstacles for students, this is because digital technology can be learned indirectly by students easily. Students are very interested in learning that is made using technology. In addition, it can also help students optimize the function of gadgets that can not only be used to play games but can also be used to increase students' insight.

### 3. Support for the Development of the PINISI SHIP Application

There is support for the development that will be carried out, namely the availability of adequate infrastructure that will be used both during development and implementation in the school environment.



**Picture 5. School Infrastructure Availability Data**

In the implementation of the development of a learning media, support is needed so that the development can run well. The development of Android applications that integrate local wisdom can be supported by various factors, one of which is adequate infrastructure support in schools. Based on the results of the analysis, as many as 76% of schools have good infrastructure, such as smooth internet access and adequate technological devices, while 24% of schools still face limitations in terms of infrastructure.

However, students who are accustomed to using digital technology do not find it difficult to develop the application. The ability of students to operate the application affects the implementation of the development. With students who do not find it difficult to implement, learning will run well.



**Picture 4. Data on Students' Difficulties in Using Android Applications**

Most of them already have a basic understanding of technology, namely 72% of students do not feel any difficulty, so that the transition and use of applications that integrate local wisdom can run smoothly. With sufficient infrastructure support and student readiness in facing digital technology, the development of this application has a great chance of success and provides benefits in preserving and utilizing local wisdom more widely.

## CONCLUSION

The development of the KAPAL PINISI application that integrates local wisdom in learning has great potential to improve basic literacy skills in students, teachers, and the community. Adequate infrastructure in schools, as reflected in 76% of schools that have good technology facilities, provides significant support for the implementation of this application. In addition, students who are already familiar with digital technology, as shown by 72% of students who do not find it difficult to use the application, is also an important supporting factor. Although there are several obstacles, especially related to limited training for teachers and the integration of local wisdom in learning media, the development of this application is expected to enrich the learning process, introduce local culture, and encourage students to be more active in learning. Therefore, ongoing efforts are needed to improve teacher skills through training and application development that

are in accordance with student needs and local cultural characteristics, so that this application can have a broad positive impact on the world of education.

## REFERENCES

- Arim Septiawan, Endang Sri Mujiwati, and Rian Damariswara. 2022. "Penerapan Multimedia Materi Teks Nonfiksi Kearifan Lokal Kediri Raya Untuk Meningkatkan Keterampilan Berfikir Kritis." *Jurnal Cakrawala Pendas* 8(3):573–82. doi: 10.31949/jcp.v8i3.2430.
- Bukit, Servista, and Ekayanti Tarigan. 2022. "Kompetensi Pedagogik Guru Dalam Membentuk Karakter Siswa Sekolah Dasar." *Widya Genitri : Jurnal Ilmiah Pendidikan, Agama Dan Kebudayaan Hindu* 13(2):110–20. doi: 10.36417/widyagenitri.v13i2.490.
- Damariswara, Rian, and Karimatus Saidah. 2021. "Kepraktisan Aplikasi Android Materi Dongeng Kelas 3 SD Berbasis Kearifan Lokal Dan Permainan Bahasa." *Jurnal Pendidikan Dasar Nusantara* 6(2):197–207. doi: 10.29407/jpdn.v6i2.15252.
- Erfan, Muhammad, Mohammad Archi Mauliyda, and Lalu Hamdian Affandi. 2021. "Identifikasi Wawasan Literasi Dasar Guru Dalam Pembelajaran Berbasis Level Kemampuan Siswa." *Jurnal Didika : Wahana Ilmiah Pendidikan Dasar* 7(1):1–18. doi: 10.29408/didika.v7i1.3520.
- Hidayati, D. 2020. "Pengembangan Kurikulum Berbasis Kearifan Lokal." *Jurnal Pendidikan* 12(1):25–37.
- Husni, M. 2020. *Komunikasi Efektif Untuk Masyarakat Umum*. Bandung : Pustaka Setia.
- Iswandi, H. 2020. "Pentingnya Kearifan Lokal Dalam Pendidikan." *Jurnal Pendidikan Dasar*.
- Kurniasih, D. 2019. *Pendidikan Literasi Di Era Digital*. Yogyakarta: Andi.
- Laila, Alfi, C. Asri Budiningsih, and Kastam Syamsi. 2021. "Textbooks Based on Local Wisdom to Improve Reading and Writing Skills of Elementary School Students." *International Journal of Evaluation and Research in Education* 10(3):886–92. doi: 10.11591/ijere.v10i3.21683.
- Laila, Alfi, and Karimatus Saidah. 2020. "Analisis Potensi Dan Hambatan , Implementasi Pendidikan Berbasis Kearifan Lokal Di SDN Burengan 2 Kediri , Indonesia." 10–12.
- Mardiana, R. 2021. "Integrasi Kearifan Lokal Dalam Pembelajaran Di Sekolah Dasar." *Jurnal Pendidikan Dan Kebudayaan*.
- Nugroho, A. 2022. "Penerapan Teknologi Dalam Pembelajaran: Tantangan Dan Solusi." *Jurnal Teknologi Pendidikan* 10(2):45–48.
- Pratiwi, S. 2023. "Aplikasi Interaktif Dalam Pembelajaran: Pengaruh Terhadap Keterampilan Siswa." *Jurnal Inovasi Pendidikan* 15(3):78–90.

- Puspita, N. 2022. *Keterampilan Literasi Dan Tantangan Zaman Modern*. Surabaya: Cipta Media.
- Rizki, A. 2022. *Pengembangan Media Pembelajaran Berbasis Kearifan Lokal*. Bandung : Alfabeta.
- Saidah, Karimatus, and Rian Damariswara. 2019. “Pengembangan Bahan Ajar Materi Dongeng Berbasis Kearifan Lokal Jawa Timur Bagi Siswa Kelas III SD.” *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran* 9(1):73. doi: 10.25273/pe.v9i1.4320.
- Sari, Maya. 2020. “Peran Guru Dalam Mengembangkan Kegiatan Literasi Dasar Siswa Kelas 1 SDIT Rabbi Radhiyya Rejang Lebong.” 07(February):1–9.
- Sari, R. 2021. “Minat Baca Masyarakat Dan Upaya Peningkatannya.” *Jurnal Literasi*.
- Setiawan, D. 2020. *Pemanfaatan Teknologi Dalam Pembelajaran Kearifan Lokal*. Jakarta: Rineka Cipta.
- Sugiyono. 2018. *Metode Penelitian Kuantitatif*. edited by Setiyawami. Bandung: Alfabeta.
- Sukmadinata, N. S. 2019. *Dasar-Dasar Pendidikan Dan Pengajaran Di Indonesia*. jakarta: Rajawali Press.
- Suryani, D. 2019. *Kearifan Lokal Dalam Kurikulum Sekolah Dasar*. Yogyakarta: Pustaka Pelajar.
- Wahyu, S. 2019. “Peran Perpustakaan Dalam Meningkatkan Literasi Masyarakat.” *Jurnal Perpustakaan* 6:45–60.
- Wuryani, Woro, and Via Nugraha. 2021. “Pendidikan Keluarga Dalam Penguatan Literasi Dasar Pada Anak.” *Semantik* 10(1):101–10. doi: 10.22460/semantik.v10i1.p101-110.