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# Numeracy and literacy skill in elementary school students: The utilization of kampus mengajar perintis program

Tri Yuni Hendrowati, Rahma Faelasofi\*

Universitas Muhammadiyah Pringsewu, Indonesia

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\*Correspondence: E-mail:  
[rahmafaelasofi01@gmail.com](mailto:rahmafaelasofi01@gmail.com)

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## ABSTRACT

*Numeracy and literacy skill is some of the current demands that are expected to be the competencies that students have. The purpose of this research is to find out the numeracy and literacy skills of elementary school students before and after receiving periodic assistance on the Kampus Mengajar Perintis program. Sampling was done by using the saturated sampling technique. The research instrument used was problems derived from the literacy and numeracy modules of the elementary school level. The data analysis technique used the paired t-test because the population research data were normally distributed. The result of this research is that the literacy ability of elementary school students has increased with the acquisition of an average score of 8.47. It is higher than before getting the treatment of the Kampus Mengajar Perintis program which is 7.25. Then, the numeracy ability of elementary school students has increased with the acquisition of an average score of 8.16. It is higher than before getting the treatment of the Kampus Mengajar Perintis program which is 6.*

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## INTRODUCTION

Numerical literacy is one of the basic competencies that must be possessed by students (Admin, 2020). Numerical literacy skill is an important thing in the era of the industrial revolution 5.0 (Sari et al., 2021). The basis of supporting activities for numeracy literacy skills is reading culture (Kemendikbud, 2021). The shift that is so felt related to the current pattern is the low awareness of reading as the basis of reading literacy skills, where people today are more likely

to practice oral or spoken communication culture, even tend to prefer playing with their smartphones and following broadcasts on television (Suswandari, 2018). On the other hand, good literacy and numeracy skills are needed to support daily life (Siskawati et al., 2020). This is because literacy and numeracy capabilities are embedded unconsciously in daily activities such as trade, education, health, economic activities, etc.

Thus, it can be stated that literacy refers to a person's abilities and skills in reading, writing, speaking, arithmetic, and

solving problems in everyday life (Tirta, 2021). Inten (2017) stated that the results of the World's Most Literate Nations research, namely the development of Indonesian literacy were in the second-lowest position out of 61 other countries studied. Meanwhile, from the results of the Program for International Student Assessment (PISSA) study, it is known that the reading ability of Indonesian children reached 371, which was left behind by 116 scores from the average of the countries studied. Thus, this is certainly a separate note for the government, parents, teachers, and the environment around children in an effort to improve children's literacy skills.

Literacy is mainly related to language skills and the language used (Pernandes & Asmara, 2020). Literacy is a basic skill that provides students with the provision to implement the concepts of numbers and arithmetic operations in everyday life (Setiawan & Sukamto, 2021), and accompanied by the ability to interpret quantitative information found in the surroundings (Kemendikbud, 2020). Numeracy is one of the skills set by UNESCO in 2006 as one of the determinants of the nation's progress (Kemendikbud, 2017). While numeracy can be expressed as a person's sensitivity related to the mastery of numbers (Setyaningsih & Ekayanti, 2019). Numeration is knowledge and skills in using various kinds of numbers and symbols related to basic mathematics to solve practical problems (Basri et al., 2021). Analyze information presented in the forms (graphs, tables, charts, etc.), and use interpretations to predict and make decisions (Dantes & Handayani, 2021)

In this research, the authors are interested in examining the condition of literacy and numeracy abilities of elementary school students. This is supported by a program from the government, namely the School Literacy Movement (GLS) which was initiated by

the Ministry of Education and Culture (Antoro, 2017). Where one of the goals of the establishment of the GLS as a series of implementations in an effort to create someone who is literate and can foster a positive sense of ethical behavior, especially among students in a series of reading cultural activities, can be started by creating a reading corner or literacy corner (Prihartini, 2017).

Furthermore, the government's efforts to support literacy and numeracy activities for elementary school students are by preparing literacy and numeracy modules for elementary school levels starting from grade 1 to grade 6. Consideration of providing literacy and numeracy modules for students, teachers, and parents, certainly, is to make it easier in learning and understand the concepts of literacy and numeracy at the elementary school level. Of course, also the readiness of the modules intended for students, teachers, and parents in an effort to facilitate efforts to improve the literacy and numeracy abilities of students so that they can contribute to society and their environment.

Improving literacy and numeracy competencies is also supported through government programs, namely through the Kampus Mengajar Perintis (KMP) program. The KMP program was first implemented in 2020. This program is implemented as a form of government sensitivity related to the implementation of learning during the COVID-19 pandemic, which is felt by the policy of implementing distance learning for elementary school students which had the most impact on its inadequacy. The implementation of this KMP program is a very good program and makes a positive contribution because it provides benefits between the school (principals, teachers, and students) and students as participants in the Kampus Mengajar Perintis program (Widiyono et al., 2021).

The essence of the implementation of the KMP program in 2020 is that students are asked to help with operational processes in schools, namely adapting technology, administration, and learning literacy and numeracy. The purpose of implementing the KMP program is to help (students, teachers, school principals) who are affected by the implementation of learning during the COVID-19 pandemic so that learning can continue and adapt to literacy and numeracy learning, and schools assisted by this program still have accreditation status of C. The program implementation strategy carried out by the program implementing college students is to become a visiting teacher (home visit) by creating small study groups to teach subjects and teach literacy and numeracy. The benefits of the KMP program are in line with the research results of Setiawan & Sukanto (2021) which states that the 2020 KMP program is very helpful for teachers in target schools, especially in literacy and numeracy learning, because there are still many teachers who are reluctant to carry out literacy and numeracy learning in their classrooms, even though literacy and numeracy programs have been launched for a long time.

Furthermore, the research of Patta et al. (2021) stated that students' numeracy literacy skills are still not maximized based on cognitive, reflective, and impulsive styles. Research results of Siskawati et al. (2020) stated that numeracy literacy skills and indicators can be used to measure numeracy literacy skills during the COV-19 pandemic. Setiawan & Sukanto (2021) stated that the implementation of the 2020 KMP program activities was very helpful for teachers in target schools, especially in learning literacy and numeracy. According to Patriana et al. (2021) which stated that (1) planning for the civilizing of numeracy literacy in curricular activities is carried

out by compiling lesson plans, compiling learning materials, compiling HOTS questions, and designing learning media; (2) implementation of numeracy literacy culture in curricular activities through synchronous, asynchronous learning activities, and home visits; (3) controlling the civilizing of numeracy literacy in curricular activities carried out by monitoring planning, monitoring implementation, and monitoring student learning outcomes. Based on the research of the problems studied and the conditions experienced by the students of SD Islam Ma'arif 02 Terbanggi Besar Central Lampung regarding literacy and numeracy skills, this research will conduct a comparative study of literacy and numeracy abilities in students of SD Islam Ma'arif 02 Terbanggi Besar Central Lampung as a positive impact of the implementation of KMP activities, whether there is a difference in the average acquisition of literacy and numeracy abilities of students in guided learning activities in the KMP program in 2020.

## **METHOD**

This research is a type of quantitative research that uses an experimental method approach. The experimental method is a research method used to find the effect of certain treatments on others under controlled conditions (Sugiyono, 2014). In this research, researchers wanted to know the improvement of students' literacy and numeracy skills in the implementation of the KMP program by conducting a home visit process in student study groups. Measurement of literacy and numeracy skills using the questions provided in the literacy and numeracy module.

The population in this research were all fourth-grade students of SD Ma'arif 02 Terbanggi Besar, Central Lampung. The sample in this research was class IV, the sampling technique in this research was

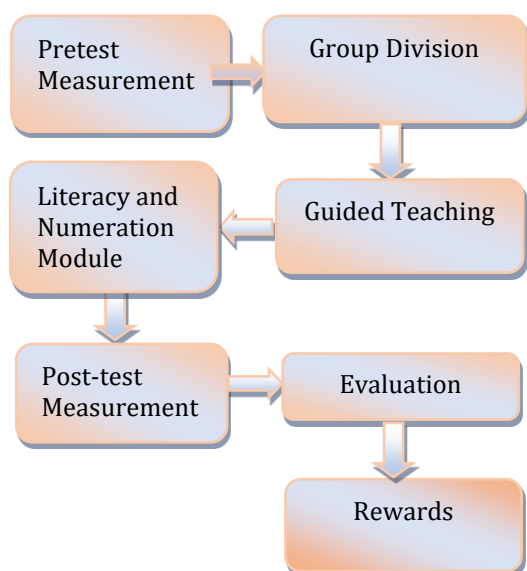
saturated sampling because all members of the population were used as research samples.

The research instrument is in the form of test questions presented in the literacy and numeracy module at the elementary school level for grade IV. The data was obtained from the results of literacy learning related to environmental maps and numeracy related to compiling numbers and measuring angles. The literacy and numeracy ability scoring indicators are presented in Table 1.

**Table 1.** Literacy and Numerical Ability Scoring

Literation		Numeration	
Score	Indicator	Score	Indicator
0-10	Reading	0-10	Arithmetic
0-10	Writing	0-10	Measuring

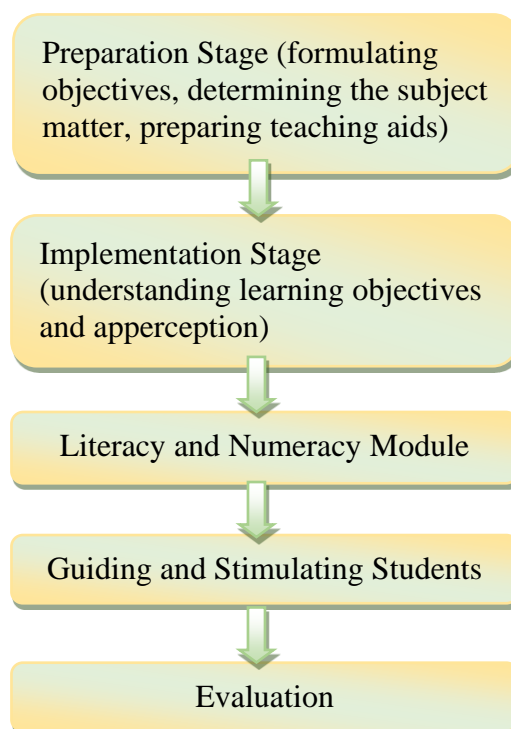
Furthermore, the implementation of learning by conducting home visits can be seen in Figure 1.



**Figure 1.** Implementation of Guided Teaching Activities

The illustration from Figure 1 shows the process of implementing guided teaching activities starting with a pretest of students' literacy and numeracy abilities, then continued with group division in an effort to provide guided

teaching during the process of implementing the KMP program. Guided teaching is also guided by literacy and numeracy modules which are indeed a guide for students. After that, a test is taken to get the results of the literacy and numeracy abilities of students. At the end of the activity, rewards are given in the form of praise to students who have literacy and numeracy abilities in the proficient category.



**Figure 2.** Implementation of Teaching with Literacy and Numeration Modules

Furthermore, the illustration in Figure 2 shows the process of implementing teaching assisted by literacy and numeracy modules. Guidance and stimulus are based on the themes learned according to the references in the literacy and numeracy module. After the treatment is carried out, an evaluation (post-test) is carried out to obtain data on the results of literacy and numeracy abilities.

## RESULTS AND DISCUSSION

The data on the results of the literacy and numeracy abilities of students in class

IV were obtained from the results of the pretest and posttest based on the topics discussed in the literacy and numeracy module in the 3rd discussion regarding environmental maps and compiling numbers and angles. The number of students who experienced treatment was 16 students, wherein the guided treatment with home visits, they were divided into 3 small groups. The implementation of the pretest is done by preparing questions based on the topic being taught. Furthermore, the posttest was given after the students received treatment by teaching the topic of environmental maps as well as compiling numbers and measuring angles. Furthermore, to analyze the data obtained from the pretest and posttest, the data were analyzed using a paired sample t-test statistical test, before statistical testing was carried out, the data was tested for assumptions, namely the variance test and normality test. Prior to the normality test, the data were analyzed with descriptive statistics assisted by the RStudio software programming through the "dplyr" package which can help to find out the average of the data, the results of which are presented in Table 2.

**Table 2.** Literacy and Numeracy Descriptive

Stat	Literation		Numeration	
	Before	After	Before	After
Average	7.25	8.47	6	8.16
Standard Deviation	0.707	0.741	0.408	0.625
Median	7.5	7.5	6	8.25
Modus	8	8	6	8.5

The results in Table 2 show that the average value of the posttest results in literacy and numeracy has increased, it can be stated that the treatment process carried out can take place well and students can participate in these activities optimally. In addition, from the results of the acquisition of standard deviation values, the acquisition of the amount of data spread on numeracy skills is wider

than in the previous numerical abilities, this indicates that there is a significant increase in the acquisition of posttest results in numeracy skills.

Furthermore, the pretest and posttest data from literacy and numeracy results were tested whether the data before and after literacy and numeracy had the same or different variances, using RStudio software programming through the "var.test" command, the results obtained can be seen in Table 3.

**Table 3.** The Results of the Variance Test of Literacy and Numeracy Data

Ability	p-value	Conclusion
Literacy	0.8588	p-value>0.05, it means the variance is not the same
Numeracy	0.1098	p-value>0.05, it means the variance is not the same

The results presented in Table 3 can be stated that the acquisition of data processing with RStudio software programming stated that the literacy and numeracy abilities had p-values greater than 0.05, this means that the two groups did not have the same variance. The condition of the two groups which are declared not to have the same variance can still be continued by testing the assumption of normality of the data. The normality test of the processed data using the Shapiro-Wilk method on the RStudio software program with the "Shapiro.test" command. The results of the data normality test are presented in Table 4.

**Table 4.** The Results of the Normality Test of the Literacy and Numeracy Data Groups

Ability	p-value	Conclusion
Literacy	0.8778	p-value>0.05, it means that the data is normally distributed
Numeracy	0.8778	p-value>0.05, it means that the data is normally distributed

Based on the results in Table 4, it is known that the two groups of data are declared to be normally distributed. The assumption of normal distribution of data is met, then the data is analyzed by using paired sample t-test. The results of the paired sample t-test which were processed using the RStudio software programming using the "*t.test*" command are presented in Table 5.

**Table 5.** The Results of the Paired t-Test in the Literacy and Numeracy Data Groups

Ability	p-value	Conclusion	t-cal	Conclusion
Literacy	0.001031	p-value<0.05, it means that there is a difference in the average of students before and after in literacy ability	4.452	The value of t-cal = 4.452 > t-table = 2.131, which means that there is a difference in the average acquisition of students' literacy skills
Numeracy	5.367e-09	p-value<0.05, it means that there is a difference in the average of students before and after in numeracy ability	11.22	The value of t-cal = 11.22 > t-table = 2.131, which means that there is a difference in the average acquisition of students' numeracy skills

Based on the results of table 5, it can be stated that the two groups of literacy and numeracy data have differences in average literacy and numeracy abilities. The condition before and after in the literacy group stated that the p-value is  $0.001031 < 0.05$  and the t-test score  $> t$ -table, this means that there is a difference in the average of students before and after in literacy ability. In this condition, the treatment obtained by students has a significant impact on the literacy abilities of students. In the existing process, students are asked to consider the results of the reading and writing process. In this stage on the topic of environmental maps, students are asked to study with the language of students when the environmental map is shown. Under these conditions, students can explore the reading process according to the text

listed in the literacy and numeracy module, then develop it by introducing the environmental map condition in written form. In the next development, students are asked to write down the condition of the environmental map around their place of residence which is then read back by the students. Certainly, the process brings its own learning atmosphere to guided treatment with home visits.

In the results of the acquisition of the numeration group related to compiling numbers and measuring angles, it is obtained a p-value of  $5.367e-09 < 0.05$  and t-test  $> t$ -table, this means that there is a difference in the average score of students before and after in numeracy skills. In this process condition, the treatment obtained by students has a significant impact related to the numeracy abilities of students. In the existing process, students

are asked to consider the results of the process of compiling numbers and measuring angles. In this stage on the topic of compiling numbers and measuring angles, students are asked to explore sensitivity in compiling numbers and be explored with numbers that can be found around them, on the other hand when studying the study of measuring angles, students can explore by considering the angles is around it, for example, a right angle to a part of the wall. In addition to learning from the literacy and numeracy module, students can develop contextually what is around them, which can then be practiced by compiling numbers or measuring angles. The process carried out certainly brings a learning atmosphere during a pandemic that is felt to be not optimal can run optimally and is fun because students can also contextually study discussion topics on literacy and numeracy modules that are integrated with everyday life.

The KMP program initiated by the government certainly has a positive impact and the progress is very good, especially to improve the ability of students. One of the objectives of the KMP implementation is to improve the literacy and numeracy skills of elementary school students. So, to achieve this, the implementation of home visits by providing home learning services during the pandemic is very helpful for students.

Thus, the research results obtained regarding the average achievement of literacy and numeracy skills through the implementation of guided learning in the 2020 KMP program have a positive impact that can be continued through the Kampus Mengajar Perintis program. The contribution of students to the implementation of KMP activities is very meaningful to help the implementation of learning during the pandemic, especially in affected schools which still need resources to support the implementation of the learning process. The concept and

context of the implementation of this KMP program are evaluated in measuring the literacy and numeracy abilities of elementary school students to be something that distinguishes it from other research so that the results obtained from research can contribute meaningful recommendations in terms of implementing KMP program in the future.

## CONCLUSIONS AND SUGGESTIONS

Based on the results of data analysis and hypothesis testing and discussion in this research, it can be concluded that the implementation of guided learning home visits in the KMP program by guiding students in small groups can improve students' literacy and numeracy skills. Learning activities assisted by literacy and numeracy modules have an impact on increasing the average literacy and numeracy abilities of students.

Suggestions based on the results of this research are the re-activation of students' literacy and numeracy skills on other research topics so that they can increase the exploration of students' thinking power. In addition, there is a need for further research on learning methods that can collaborate the fulfillment of mathematics learning outcomes with numeracy abilities or collaborate on the fulfillment of Indonesian language learning outcomes with numeracy abilities in students.

## REFERENCES

- Admin. (2020). *Literasi dan numerasi: Pengertian, perbedaan, dan prinsip penerapannya*. Among Guru.
- Antoro, B. (2017). *Gerakan literasi sekolah dari pucuk hingga akar, sebuah refleksi*. Direktorat Jenderal Pendidikan Dasar dan Menengah.
- Basri, H., Kurnadi, B., Tafriyanto, C. F., & Bayu, P. (2021). Investigasi kemampuan numerasi mahasiswa calon guru matematika. *Jurnal Penelitian Matematika Dan Pendidikan Matematika*, 4(2).

- Dantes, N., & Handayani, N. N. L. (2021). Peningkatan literasi sekolah dan literasi numerasi melalui blended learning pada siswa kelas v sd kota singlaraja. *Widyalyaya: Jurnal Ilmu Pendidikan*, 1(3).
- Inten, D. N. (2017). Peran keluarga dalam menanamkan literasi dini pada anak. *Golden Age: Jurnal Pendidikan Anak Usia Dini*, 1(1). <https://doi.org/https://doi.org/10.29313/ga.v1i1.2689>
- Kemendikbud. (2017). *Materi pendukung literasi numerasi*.
- Kemendikbud. (2020). *Adaptasi modul literasi dan numerasi*.
- Kemendikbud. (2021). *Modul literasi numerasi di sekolah dasar*.
- Patriana, W. D., Utama, S., & Wulandari, M. D. (2021). Pembudayaan literasi numerasi untuk asesmen kompetensi minimum dalam kegiatan kurikuler pada sekolah dasar muhammadiyah. *Jurnal Basicedu*, 5(5). <https://doi.org/10.31004/basicedu.v5i5.1302>
- Patta, R., Muin, A., & Mujahidah, M. (2021). Kemampuan literasi numerasi ditinjau dari gaya kognitif reflektif-impulsif. *JIKAP PGSD: Jurnal Ilmiah Ilmu Kependidikan*, 5(2). <https://doi.org/https://doi.org/10.26858/jkp.v5i2.20130>
- Pernandes, O., & Asmara, A. (2020). Kemampuan literasi matematis melalui model discovery learning di smp. *Jurnal Pendidikan Matematika Raflesia*, 5(1).
- Prihartini, F. W. (2017). *Analisis pelaksanaan gerakan literasi sekolah (gls) pada kelas rendah di sdn punten 1 batu*. University of Muhammadiyah Malang.
- Sari, P. N., Jumadi, & Ekayanti, A. (2021). Penerapan model pembelajaran steam (science, technology, engineering, art, and math) untuk penguatan literasi-numerasi siswa. *Jurnal Abdimas Indonesia*, 1(2). <https://doi.org/10.53769/jai.v1i2.90>
- Setiawan, F., & Sukanto, S. (2021). The implementation of pioneer teaching campus (ptc) as a forurunner of literacy and numeracy learning movement at elementary school. *Primary: Jurnal Pendidikan Guru Sekolah Dasar*, 10(2).
- Setyaningsih, L., & Ekayanti, A. (2019). Keterampilan berfikir siswa smp dalam menyelesaikan soal matematika ditinjau dari kemampuan number sense. *Jurnal Didaktik Matematika*, 6(1). <https://doi.org/10.24815/jdm.v6i1.11699>
- Siskawati, F. S., Chandra, F. E., & Irawati, T. N. (2020). Profil kemampuan literasi numerasi di masa pandemi cov-19. *Pedagogy: Jurnal Pendidikan Matematika*, 1(101).
- Sugiyono. (2014). *Statistika untuk penelitian*. ALFABETA.
- Suswandari, M. (2018). Membangun budaya literasi bagi suplemen pendidikan di indonesia. *JURNAL DIKDAS BANTARA*, 1(1). <https://doi.org/10.32585/jdb.v1i1.105>
- Tirta, T. (2021). *Literasi: Pengertian, tujuan, manfaat dan contoh*. <https://perpustakaan.kalbarprov.go.id/index.php/2-publikasi/140-literasi-pengertian-tujuan-manfaat-dan-contoh>
- Widiyono, A., Irfana, S., & Firdausia, K. (2021). Implementasi merdeka belajar melalui kampus mengajar perintis di sekolah dasar. *Metodik Didaktik : Jurnal Pendidikan Ke-SD-An*, 16(2). <https://doi.org/10.17509/md.v16i2.30125>