

# Improve Numerical Literacy Through the *Calistung* Program in High School Students

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**Abstract:** This study aims to improve the literacy and numeration skills of the students through the *calistung* program. This research uses descriptive qualitative research methods and quantitative methods of research. The subjects of this study were high school students in grades 4, 5, and 6 at SDI Rawe. Data collection in this study is done through observation, interviews, and documentation. The qualitative approach is used to analyze and observe the program's application process, and the quantitative approach is used to measure the results of the program's implementation. The result of the application of the *calistung* program to the literacy and numeration skills of students is a change in the level of reading, writing, and counting skills that is demonstrated by the improvement of the final score from semester 1 to semester 2 as well as the acquisition of the AKM (pre-test & post-test) before and after the application.

**Keywords:** skills, literacy, numeration, *calistung* programs

In the 21st century, known as the information and technology era, literacy is not limited to reading and writing but beyond understanding and interpreting texts. Hardiyanti and Alwi (2022) argued that literacy development must be balanced with information technology because one must have good literacy skills to digest information and communication technology in this era. Numeration is the ability to understand, analyze, and use numerical information in everyday life that is relevant to the formal academic context. Numeration, according to the Minister of Education and Culture (2020), is the ability to solve contextual problems in everyday life by using concepts of thinking, facts, procedures, and mathematical tools to create individuals who can explain the use of mathematics in daily life. Numeration aims to sharpen and strengthen the student's ability to interpret numbers, tables, graphs, and diagrams (Latifah & Rahmawati, 2022). Menurut Maulidina (2019) says that numeration is the ability to apply the concepts of numbers and computing skills in everyday life, such as working in society, in social life, and interpreting information around us.

However, the realities that happen in the world of education often find problems that can hinder the teaching process, such as the difficulties pupils have in reading, writing, and counting. This usually happens in the primary classes in primary

schools but does not close the possibility of happening in the upper classes, as the writer experienced while attending the campus program teaching at the target school. As Ifrida et al. (2023:3) stated in a study at the State Department Geneng 01 said that not only students in grades 1, 2, and 3 but in grades 4, 5, and 6 some students are not smooth in reading as well as some students of the upper class who have not mastered how to calculate basic mathematics. The problems faced by high school students at SDI Rawe are not independent of the impact of the Covid-19 pandemic which is a factor in the decline of the quality of teaching learning when they are in the lower class (Suryadien,dkk, 2022:27). Proses belajar mengajar yang dialihkan menjadi daring membuat siswa kesulitan dalam memahami materi (Oktawirawan, 2020:541). Another factor causing poor literacy and pupil numbers is the need for parents to give more attention to children's learning at home.

The teaching campus program is one of the programs designed by Kemendikbudristek to equip students with a wide range of expertise and skills that they possess and play a role as teachers' partners to innovate in learning, developing strategies and learning models that are creative, innovative, and enjoyable. The campus program focuses on two external outcomes, namely developing the competence of students participating in the program

through enhanced capacity of leadership, creativity and innovation, problem-solving, communication, team management, and analytical thinking, as well as improving literacy and numeration skills for students in target schools (Muhsin, 2021). Since 2016, the Ministry of Education and Culture has endeavored to realize literacy culture by planning the National Literacy Movement (GLN), which is the implementation of Permendikbud No. 23 Year 2015 on the Growth of National Literature Movement already planned by the government and the realization of education through schools called the School Literation Movement (GLS) (Agustina et al., 2019).

The School Literacy Movement can be interpreted as an attempt to create an organization of students to cultivate a sense of goodwill for students through various activities, including reading books. (Ekowati et al., 2019). It is in line with the research of Wulanjani and Anggraeni (2019) and Safitri & Dafit (2021) that the school literacy movement is a form of support to the government to instill a sense of employment since elementary education. Literacy applied to elementary school students is numerational literacy. Literacy can be understood as the ability to use numbers, symbols, and data, as well as knowledge and competence to solve problems of everyday life and to use the intellectual power he possesses to explore and interpret a statement. (Anderha & Maskar, 2021:2; Perdana & Suswandari, 2021:10). In connection with the above issues, efforts should be made to improve literacy and numeration through the *calistung* program. The *calistung* program focuses on literacy activities and writing and counting training. Latifah and Rahmawati (2022) revealed that implementing the Calistung program will improve student numeracy and reading and writing literacy.

Other studies related to improving literacy and numeracy have been done by other studies, such as Kusuma and Christina 2023, which stated that applying a calistung learning model effectively improves the literature and numeration of pupils. Further research by Wahyuni et al. 2023 noted that the Calistung program can increase students' interest in reading and that students can more quickly know numbers and letters. Latifah and Rahmawati 2022 affirmed that in applying the Calistung program, teachers can give extra hours to students who have difficulties reading, writing, and counting. It is in line with the research of Aelxandro et al. 2022; Fairuzi and Trisna 2023 that the program can make students who were previously less able to

read, write, and calculate become able after its implementation. In addition, the *Calistung* program can be applied through games or games such as the research by Helmanto, Annisa, and Rasikah 2022 that applies the Calistung learning through Monopoly games and Snake Stairs.

The research that has been carried out still has some weaknesses, such as a lack of teachers, facilities, and facilities such as an unorganized library room and insufficient reading books, as well as different characteristics of the pupils so that the application of the *calistung* program is not equal to each pupil. Therefore, the author offers a solution to this research: Before applying for the scholarship, prepare a clean and well-organized library and organize more photo stories so students can be more interested in reading. In addition, the teacher must first know the character of each student, who then classifies and groups the students according to their character. The advantage of such a solution is the *calistung* program that is applied evenly to each pupil who is less able to read, write, and count. Then, the purpose of applying for the *calistung* program with the solution offered is that every pupil who is less capable of *calistung* with his character can easily be guided by the teacher according to his characteristics.

## METHODS

This research uses descriptive qualitative research methods and quantitative methods of research. This research emphasizes the implementation and impact of programs to improve students' literacy and numeration skills at SDI Rawe. The subjects of this study are high-class students, namely students in grades 4, 5, and 6 in SDI Rawe. Data collection in this study is done through observation, interviews, and documentation.

Using a qualitative approach, the authors analyze and observe the application processes applied to improve student literacy and numeration skills directly and in-depth. In contrast, the quantitative approach estimates the implementation results before and after using the calistung program. The methods of research on the application of literacy and numeration programs are carried out in several stages, i.e. (1) carry out an analysis of the needs and characteristics of students in the school, (2) compile and design programs to improve student literature and numbering, (3) consult with teachers and the head of school related to the program prepared, (4) carry out the program as much as

possible, and (5) carry out analysis and evaluation of the results of the program application.

## RESULTS AND DISCUSSION

Early observations at the target school found some students had difficulty reading, writing, and counting in the lower and upper classes. Therefore, the author jointly teamed up a program of work related to literacy and numeration to help improve the skills of the primary pupils who are still behind their peers. This literacy and numeration activity is carried out every morning from Monday to Friday with the allocation of time 15 minutes before the start of the study. This activity is in line with the program conducted by Kusuma & Sari (2023) on research at SD Negeri Galeh 1, namely by applying the *calistung* learning method carried out on Monday–Saturday at the time of a 10-minute break in the school library using letter card media, picture storytelling books, and numerical cards.

Literacy is an essential thing in this digital age. (Agustina et al., 2019; Rahmawati et al., 2022). Activities to enhance the liking of reading and writing that are being implemented in Indonesia today are literacy activities (Kurniawan et al., 2019). Literacy activities are not only contained in reading text or reading books, but for this program, its scope is expanded by asking students to write stories in the form of poetry, contents, or short stories or can also recount the content of readings they have read before. It is in line with the view of Rahmasari (2022:1105) that literacy is the ability of the student to examine and interpret information and to understand the statement delivered in a reading.

As for the numbering activities, emphasis is placed on memorizing multipliers from 1 to 10 to sharpen and streamline the ability of the learners to work on numbering operations. This activity program has been well carried out. Students have played a very active role in following the activities. Although there are still minor problems, such as excessive enthusiasm, some students still need help following this activity because they are still controlled in writing, reading, and counting. Students who have difficulty reading, writing, and counting have different characters. To overcome these obstacles, the writers, the team, and the parents of teachers always provide support during literacy and numeration activities so that the students can slowly follow the learning of their friends. This aligns with Darkun's (2019) and Septianti and Afiani's (2020) research that student

characteristics are one of the variables of teaching conditions.

The following are some of the programs that are implemented in the series of literacy and numeration activities every day:

### Literacy Learning Through Reading 15 Minutes Before Learning Begins

This activity is part of the School Literacy Movement (GLS) that should be implemented. The course is held every Monday to Friday for 15 minutes before the start of the lesson. In its implementation, students assigned to take books were asked to take the books from the library and then distributed to each student to read. The book is not a textbook but a picture storybook and other educational books that can attract students' interest in reading. The learning media is a picture book that makes students more comfortable learning to read (Kusuma & Sari, 2023). According to Sari and Kurniaman (2019), a monotonous learning medium makes students' ability to read less optimal. A team of writers and classmates provides exceptional support for students who are still having difficulty reading. At the same time, those already good at reading will be asked to recount the reading content according to their respective versions. This improves students' ability to understand what they have read. This activity can be done both inside and outside the classroom.



**Figure 1. 15 Minutes Reading Literacy Learning Through Reading Levels Grouping**

This program is one of the applications of the School Literacy Movement. In the implementation, students from the first to the sixth grade are combined and divided into groups according to their reading ability level. Group 1 is the group reading words, group 2 is reading phrases, group 3 is reading smoothly, and group 4 is reading comprehensively. After reading, the students will be given questions based on the reading content using the formula 5W + 1H. This program aims to make

it easier for teachers to guide the students so that students who have not read smoothly feel comfortable if they have to be among other students who are already reading smoothly.



**Figure 2. Literacy-Based on Reading Groups  
Literacy Learning Through Literacy Tree**

The literacy tree is made of bamboo branches that are painted and then stored in a pot and placed in one of the corners of the classroom. Literacy learning through the literacy tree is aimed at improving the reading and writing skills of the students as well as sharpening their thinking skills. This is because the tree will be hung with inscriptions in the form of poems, scrolls, and motivational words written or produced by the student himself.



**Figure 3. Literacy Tree  
Literacy Learning Through Reading Angles**

This reading corner aims to enhance students' ability and understanding of the materials they have studied. This is because the reading corner contains summaries of teaching materials from various subjects attached to the classroom walls. On the attached sheets of materials, the teaching material also contains images related to the material to increase the interest of reading and learning students.



**Figure 4. Corner Reading  
Numerical learning by memorizing  
fundamental frequencies**

In this lesson, students are asked to memorize the percentages from percentage 1 to decimal. It aims to sharpen and streamline the ability of the students to work on the number counting operations of both summing and reducing, as well as multiplication and division. After the students memorize the multiplication, the writer, along with the team, guides and gives training on how to work the numbering, division, summing, and reduction operations with the levels of tens, hundreds, and thousands worked in a sorted manner. Students are also taught how to memorize perpendicularities using an arithmetic system. Jarimatics was chosen because it is part of the materials studied and has been shown to enhance students' ability to use it (Dewi et al., 2020).



**Figure 5. Memorizing the Multiplication Numeration Learning Through the Game "Truly Advance Wrong Retreat"**

The game is played at a break or home school, where the student is asked to line backward before leaving the class. Then, the teacher will give a random question about the numbering, starting with the student in the front row. If the answer is true, the student will be allowed to leave the classroom, while the student who still answers wrong will be asked to return to the back rows. The program aims to enhance students' understanding of mathematical science and test students' ability to remember what they have learned.



**Figure 6. Numbering game**

Based on the program – the program applied obtained the maximum results is the presence of changes in reading, writing, and counting ability of the students demonstrated by the improvement of the final grade from semester 1 to semester 2 as well as the acquisition of AKM values applied to pre-test and post-test AKM activities class. The acquisition in the semester 1 and AKM pre-tests activities has no application to the *calistung* program. In contrast, in semester 2, the

activities of the AKM pre-test were applied to the program.

**Table 2. Students AKM Average**

Pre-Test		Post-Test	
Literacy	Numeracy	Literacy	Numeracy
60%	45%	85%	65%

**Table 3. 1<sup>st</sup> and 2<sup>nd</sup> Semester Graduate Final Score**

No	Name	1 <sup>st</sup> Semester		2 <sup>nd</sup> Semester	
		Indonesian	Math	Indonesian	Math
1	AK	72	72	73	73
2	DG	80	81	82	82
3	GY	77	75	79	78
4	JF	72	72	73	73
5	MA	72	72	74	73
6	MC	84	84	85	85
7	ME	78	76	80	77
8	MF	80	78	82	80
9	MJ	77	73	80	75
10	MJP	80	78	82	79
11	MK	72	72	73	73
12	MM	78	75	81	77
13	MV	77	72	79	76
14	MY	72	72	73	73
15	SA	74	72	75	73
16	TD	72	72	74	74
17	WM	72	72	73	73
18	YA	72	72	73	73
19	YD	72	72	74	73
20	YF	72	72	73	74
21	YI	73	73	76	75
22	YJ	75	73	78	74

Based on the two tables above, it can be concluded that there is an improvement in students' abilities after applying the *calistung* program. In the first table, the author took the achievement scores of two subjects, Indonesian Language and Mathematics, in which both topics predominate on literacy and numeration. The data lists values from the 5th grade in SDI Rawe. In addition to the final values data, in the second table, the author lists average values of the performance of AKM activities on both the pre-test and post-test, which shows an improved understanding of the student's literacy and numeration.

Implementing *calistung* programs to improve high school students literacy and numeration skills at SD Inpres Rawe can go well and smoothly. The *calistung* program is a program that focuses on reading habits as well as writing and counting training for students who are less able to read, write, and count. To realize the program, the author collaborates with the teachers to undertake activities that can improve the literacy and numeration skills of the students. Activities included literacy learning through reading 15 minutes before learning, literacy through reading

level grouping, literature learning through literacy tree, literation learning through reader angle, numeration learning by memorizing basic percussion, and numeration Learning through the game right forward, wrong backward. These activities have a significant impact on improving the literacy and numeration skills of the students. This study is in line with the study conducted by Kusuma and Chirstina (2023) under the title “Application of *Calistung* Learning Model to Improve Literacy and Numeration of Students in Elementary Schools” with the results of his research that the *calistung* learning model is assessed as effective in improving literacy and numeration of pupils. Research conducted by Sri Wahyuni et al. (2023) stated that implementing a *calistung* program can increase students' interest in reading.

## CONCLUSIONS

Based on the results and discussions above, it can be concluded that implementing the *calistung* program to improve the literacy and numeration skills of high-class pupils at SD Inpres Rawe can go well and smoothly. The application process of this *calistung* program trains students who have difficulties in reading, writing, and counting. Programs that have been implemented include literacy learning through reading 15 minutes before learning begins, literation learning through grouping reading levels, literature learning through literacy trees, literacy Learning through reading corners, numeration learning by memorizing fundamental differences, and numeration Learning through the games right forward and wrong backward. There is a joint *calistung* program that can enhance student learning activities.

With this program in place, the author suggests that the school continue to run these programs so that the students are more enthusiastic about learning.

## REFERENCES

- Afghani, D. R., Prayitno, H. J., Jayanti, E. D., Zsaszadilla, C. A., Salsabilla, T. A., Saputri, E. D., Septiyanti, N. D., & Siswanto, H. (2022). Budaya Literasi Membaca di Perpustakaan untuk Meningkatkan Kompetensi Holistik bagi Siswa Sekolah Dasar. *Buletin KKN Pendidikan*, 4(2), 143-152. <https://doi.org/10.23917/bkkndik.v4i2.19185>
- Agustina, L., Arffianto, A., Hasna, S., Indarwati, L., Putri, D. R., El-majid, E., Rahayu, K. S., Nurleli, D. Y., G, W. A. S., & Sholihah, I. (2019). Revitalisasi Perpustakaan untuk Meningkatkan Minat Literasi Siswa di SD Muhammadiyah Nurul Ilmi, Klaten. *Buletin KKN Pendidikan*, 1(2), 97 – 105. <https://doi.org/10.23917/bkkndik.v1i2.10771>
- Anderha, R. R., & Maskar, S. (2021). Pengaruh Kemampuan Numerasi Dalam Menyelesaikan Masalah Matematika Terhadap Prestasi Belajar Mahasiswa Pendidikan Matematika. *Jurnal Ilmiah Matematika Realistik*, 2(1), 1-10. <https://doi.org/10.33365/ji-mr.v2i1.774>
- Darkun, M. (2019). Pentingnya Memahami Karakteristik Siswa dalam Pembelajaran Bahasa Arab. *An-Nabighoh: Jurnal Pendidikan dan Pembelajaran Bahasa Arab*, 21(01), 77. <https://doi.org/10.32332/an-nabighoh.v21i01.1541>
- Dewi, Vivi Fitria, Yusuf Suryana, dan Syarip Hidayat. (2020). Pengaruh Penggunaan Jarimatika Terhadap Kemampuan Berhitung Perkalian Peserta Didik Kelas IV Sekolah Dasar. *EduBasic Journal: Jurnal Pendidikan Dasar*, 2(2), 79-87. <https://doi.org/10.17509/ebj.v2i2.26816>
- Ekowati, D. W., Astuti, Y. P., Utami, I. W. P., Mukhlisina, I., & Suwandayani, B. I. (2019). Literasi Numerasi di SD Muhammadiyah. *ELSE: Elementary School Education Journal*, 3(4), 93-103.
- Fairuzi, R. E. F., & Andarwulan, T. (2023). Implementasi Kegiatan Kampus Mengajar melalui Program *Calistung* di Kelas Rendah SDN 3 Druju Kabupaten Malang. *Jurnal Pendidikan Bahasa*, 12(1), 224-235.
- Hardiyanti, W. E., & Alwi, N. M. (2022). Analisis Kemampuan Literasi Digital Guru Paud Pada Masa Pandemi Covid-19. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 6(4), 3759-3770. <https://doi.org/10.31004/Obsesi.V6i4.1657>
- Helmanto, F., Maulida, A., & Rena, RA (2023). Pendampingan Belajar *Calistung* dengan Model TGT Berbasis Permainan Monopoli dan Ular Tangga. *GENDIS: Jurnal Pengabdian Masyarakat*, 1 (2), 43-48.
- Ifrida, F., Huda, M., Prayitno, H. J., Purnomo, E., & Sujalwo, S. (2023). Pengembangan dan Peningkatan Program Kemampuan Literasi dan Numerasi Siswa di Sekolah Dasar. *Jurnal Ilmiah Kampus Mengajar*, 1-12.
- Kurniawan, K. R. A., Latif, N., Suparno, R. R., Oktaviani, A., Zharifa, A. F., & aryanti, S. Z. (2019). Revitalisasi Rumah Pintar Laskar Pelangi di Gantung melalui Budaya Literasi Humanitas. *Buletin KKN Pendidikan*, 1(1), 10 – 17. <https://doi.org/10.23917/bkkndik.v1i1.9282>
- Kusuma, A. W., & Sari, C. K. (2023). Penerapan Model Belajar *Calistung* untuk Meningkatkan Literasi dan Numerasi Siswa di Sekolah Dasar. *Buletin*

- Pengembangan Perangkat Pembelajaran*, 5(1).  
<https://doi.org/10.23917/bppp.v5i1.22936>
- Latifah, & Rahmawati, F. P. (2022). Penerapan Program CALISTUNG untuk Meningkatkan Literasi Numerasi Siswa Kelas Rendah di Sekolah Dasar. *Jurnal Basicedu*, 6(3), 5021–5029.
- Mahardhani, A. J., Prayitno, H. J., Huda, M., Fauziati, E., Aisah, N., & Prasetyo, A. D. (2021). Pemberdayaan Siswa SD dalam Literasi Membaca melalui Media Bergambar di Magetan. *Buletin KKN Pendidikan*, 3(1), 11-22.
- Maulidina, A. P. (2019). Profil Kemampuan Numerasi Siswa Sekolah Dasar Berkemampuan Tinggi dalam Memecahkan Masalah Matematika. *Jurnal Bidang Pendidikan Dasar*, 3(2), 61-66.  
<https://doi.org/10.21067/jbpd.v3i2.3408>
- Mendikbud, (2020). *Pusat Asesmen dan Pembelajaran Badan Penelitian dan Pengembangan dan Perbukuan Kementerian Pendidikan dan Kebudayaan AKM dan Implikasinya pada Pembelajaran*.
- Muhsin, H. (2021). Kampus Merdeka Di Era New Normal. *Masa Depan Kampus Merdeka & Merdeka Belajar: Sebuah Bunga Rampai Dosen*, 143.
- Nawa, A. E. H. N., Nahak, E., Thaumet, B., Wella, B. S., Sape, N. V., Rondi, S. M., ... & Ketmoen, A. (2022). Peningkatan Literasi dan Numerasi Bagi Anak-Anak Melalui Program Aman Calistung di Desa Mata Air. *Jurnal Pengabdian Pada Masyarakat Indonesia*, 1(5), 21-26.
- Oktawirawan, D. H. (2020). Faktor Pemicu Kecemasan Siswa dalam Melakukan Pembelajaran Daring di Masa Pandemi Covid-19. *Jurnal Ilmiah Universitas Batanghari Jambi*, 20(2), 541-544.  
<http://dx.doi.org/10.33087/jiubj.v20i2.932>
- Perdana, R., & Suswandari, M. (2021). Literasi Numerasi dalam Pembelajaran Tematik Siswa Kelas Atas Sekolah Dasar. *Absis: Mathematics Education Journal*, 3(1), 9-15.  
<https://doi.org/10.32585/absis.v3i1.1385>
- Rahmasari, U. D. (2022). Persepsi Guru Mengenai Pentingnya Kemampuan Mengembangkan Soal Tes Berbasis Literasi dan Numerasi di Sekolah Dasar. *COLLASE (Creative of Learning Students Elementary Education)*, 5(6), 1105-1112.  
<https://dx.doi.org/10.22460/collase.v5i6.12345>
- Rahmawati, N., Prasetyo, W. H., Wicaksono, R. B., Huda, M., Muthali'in, A., & Atang, A. (2022). Pemanfaatan Sudut Baca dalam Meningkatkan Literasi Kewarganegaraan Siswa di Era Digital. *Buletin KKN Pendidikan*, 4(1), 99–107.  
<https://doi.org/10.23917/bkkndik.v4i1.17822>
- Safitri, V., & Dafit, F. (2021). Peran Guru dalam Pembelajaran Membaca dan Menulis Melalui Gerakan Literasi di Sekolah Dasar. *Jurnal Basicedu*, 5(3), 1683 – 1688.
- Sari, E. R., & Kurniawan, O. (2019). Penggunaan Media Kartu Bergambar untuk Meningkatkan Kemampuan Membaca Siswa Kelas II SDN 067 Pekannbaru. *Primary: Jurnal Pendidikan Guru Sekolah Dasar*, 8(October), 125–138.
- Septianti, N., & Afiani, R. (2020). Pentingnya Memahami Karakteristik Siswa Sekolah Dasar di SDN Cikokol 2. *As – Sabiqun*, 2(1), 7 – 17.  
<https://doi.org/10.36088/assabiqun.v2i1.611>
- Suryadien, D., Dini, R., & Dewi, A. A. (2022). Rencana Implementasi Kurikulum Prototipe Pada Masa Pandemi Covid-19 di Indonesia. *Jurnal Pgmi Uniga*, 1(01), 27-34.  
<https://journal.uniga.ac.id/index.php/pgmi/article/view/1754>
- Wahyuni, S., Syamsuyurnita, S., Kesuma, D., & Saragih, M. (2023). Peningkatan Kemampuan Literasi Numerasi Melalui Program Calistung Di Sanggar Bimbingan Kampung Bharu Kuala Lumpur, Malaysia. *Innovative: Journal Of Social Science Research*, 3(4), 1652-1662.
- Wulanjani, A. N., & Anggraeni, C. W. (2019). Meningkatkan minat membaca melalui gerakan literasi membaca bagi siswa sekolah dasar. *Proceeding of Biology Education*, 3(1), 26-31.  
<http://journal.unj.ac.id/unj/index.php/pbe>