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The circumstances of literacy numeracy skill: Between notion and fact from elementary school students

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Abstract: Literacy activities in Indonesia are intensively developed to form literate citizens. Literacy is defined as a basic ability to develop individual potential in achieving goals. One of the literacies developed is numeracy literacy, which was coined in 2017. Numerical literacy is a branch of mathematical literacy. This ability guides individuals to recognize the role of numeracy competencies in everyday life. The knowledge of numeracy literacy is an urgent need for students. The student at least has received numeracy literacy development. This study aims to describe numeracy literacy in the field and compare numeracy literacy targets with reality in the area. The research method is descriptive quantitative. The data collection technique used a test with a research instrument of numeracy literacy skills and used non-test data, namely observation, and open interview guidelines. The research findings show that the students' numeracy literacy skills are still in the poor category. Numeracy literacy has not been developed in the implementation of the Gerakan Literasi Sekolah (GLS). Basic literacy activities have not been implemented properly.
Keywords: literacy, literacy numeracy, Gerakan Literasi Sekolah (GLS)

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Introduction

Literacy activities in Indonesia are developing to equip and fulfill students' needs regarding competencies that must be possessed to form citizens with literacy or what is called literacy and numeracy. The currently winning program is the Gerakan Literasi Nasional (GLN) 2017. The literacy program has excellent plans, namely literacy, numeracy literacy, scientific literacy, media literacy, financial literacy, and cultural literacy (OECD, 2019). Some of this literacy is a new color of literacy competence, which targets the Gerakan Literasi Sekolah (GLS).

Literacy activities contain various activities. Likewise, Browne (2005) stated that literacy develops into an important ability to deal with scientific developments. Literacy is the ability to process knowledge through various stages of thinking. In line with that, The United Nations Educational Scientific and Cultural Organization UNESCO (2013) stated that literacy is the ability to identify, understand, interpret, create, communicate, and write on a wide variety of topics. Literacy skills as a way for individuals to develop their potential and participate in the social environment (Ferrari, 2012; Rosenberg, 2012). In line with that, literacy skills have an important role, namely, a basic learning process. Literacy and numeracy skills are the basis for students to understand the material before students move to the next level (Musliman et al., 2013; Kovas et.al., 2013). Students with good literacy and numeracy skills can easily move up to the next level to gain more knowledge.

One of the literacy skills that are important to develop is numeracy literacy. Numerical literacy is a derivative or branch of mathematical literacy. This ability leads individuals to recognize the role of mathematics in life and make good judgments and decision making (Meeks et al., 2014). In this line with this opinion, deep PISA (2012) states that mathematical literacy is defined as an individual's capacity to formulate, use, and interpret mathematics in various contexts. This statement includes mathematical reasoning and mathematical concepts, procedures, and facts to describe, explain, and predict phenomena. Thus, individuals can build constructive and reflective thinking patterns.

Numerical literacy is a branch of mathematical literacy, but there are differences between numeration and mathematics. The difference lies in the empowerment of this knowledge and skills

(Kemendikbud, 2017). The application of numeration includes the skills to apply mathematical concepts and rules in everyday situations. Numeration deals with the social life of individuals using mathematical concepts. Numeration is interpreted as an ability, confidence, and mathematics in learning activities at school, home, work, and life in general (Department of Education and Skills, 2010). Literacy and numeration are used to solve problems in everyday life, not limited to only presented questions at school (Grasby et al., 2020; Neumann et al., 2013).

In line with this opinion, Stecey & Tuner (2015) argues that numeracy thinking is meant to include a problem-solving mindset, logical reasoning, communicating, and explaining. This mindset is developed based on concepts, procedures, and facts relevant to the problem. The process of solving this problem involves all objects by the domain of numeration. After obtaining a solution, the solution is interpreted in a real context or situation. Such a process will increase one's sensitivity to numbers and communication arithmetic in solving daily problems (Manolitsis et al., 2013; Segers et al., 2015).

Numerical literacy needs to be developed from an early age. Furthermore, Munn (2007) states that literacy and numeracy skills are among the most basic of elementary educational aim. This opinion implies that literacy and numeracy activities are the most basic abilities of basic education goals. This basic ability is the basis for a student to have other skills. Numerical literacy includes two skills, the ability to use various kinds of numbers and symbols related to problem-solving and activities to analyze information displayed in multiple graphs, tables, and charts to make decisions (Kemendikbud, 2017). More simply, numeration is the application of number concepts and arithmetic operations skills in everyday life. The government designed a numeracy literacy book that contains the scope of numeracy literacy material in the 2013 curriculum. See Table 1 below.

Table 1. Components of numeration literacy

No	Components of Numeration Literacy	Mathematical Coverage K13
1	Estimating and counting with integers	Number
2	Use fractions, decimals, percentages, and comparisons	Number
3	Recognizing and using patterns and relationships	Numbers and algebra
4	Using spatial reasoning	Geometry and measurement
5	Using measurement	Geometry and measurement
6	Interpret statistical information	Data processing

Literacy ability has several indicators. The explanation above was stated by those who argued that numeracy skills in pre-school students include the scope of numbering, the relationship between numbers, and arithmetic operations (Purpura et al., 2011). Students in elementary schools have the same scope of development tailored to the material and curriculum.

The numeracy literacy indicators are described in the numeracy literacy modules and guidelines which include 1) mastering the basics of addition, subtraction, multiplication, and division; 2) able to use numeration concepts confidently and effectively; 3) can understand how to transfer the skills they have to solve problems (Kemendikbud, 2017). The numeracy literacy indicator is closely related to reading activities. The ability to read students' understanding is needed to dig up information and reason about the questions' meaning. In its implementation, the choice of method or representation depends on the problem's situation or context. In line with Jordan et al. (2009) explain that the basic concept of numeration in this discussion is number operations, including addition and subtraction. The scope of numeracy literacy in elementary schools is still simple.

Assessment of numeracy literacy is carried out by assessing students' ability to recognize problems and find solutions. Numeracy literacy evaluation is carried out through student activities to experience the problem-solving process in various situations and contexts to effectively use their skills (Ojose, 2011). The measurement of numeracy literacy is carried out under real conditions. What is meant is that the problem represents the general context and the real problem. The implementation of measuring mathematical literacy uses story problems containing situations and problems (Hera & Sari, 2015). Students who have been able to apply their knowledge to a problem may not necessarily be able to use it in a different situation, this is where the main point in assessing numeracy literacy is how far students can interpret a problem.

Methods

Research methods

This study uses a quantitative descriptive method because it analyzes the research data in the form of numbers into statements or descriptions of the data. This study was used to describe the numeracy skills of elementary school students. The analysis was carried out at public elementary schools that implemented the 2013 curriculum with an accreditation in Mlati sub-district, Sleman Regency, for the 2018/2019 academic year.

Research subject

This research was attended by 92 students and 14 grade V teachers. The number of teachers who took part in this study was 14 class V teachers. A total of 14 teachers were included in observation activities about the application of literacy. In this study, there are two teachers conducted interviews to deepen the required data. The two teachers appointed for the interview were teachers from schools that had been appointed by the government as pilot schools for literacy activities.

Research instruments

Expert validation of research instruments was carried out to determine whether the research instrument used was valid and could be used to measure students' numeracy literacy skills. The validated research instruments included observation instruments, literacy numeracy tests instruments, and question instruments. Based on the expert's judgment, the research instrument has been declared valid. Instrument assessment is descriptive and cannot be presumed. The conclusion is that the instrument can be used for data collection in the field.

The research instruments used included tests, observations, and open interviews. Test instruments used to collect quantitative research data. The test contains problem-solving related to numeracy literacy. The numeric literacy question grid includes three indicators with six sub-indicators, namely: collecting data, creating a data table according to the information obtained, calculating numbers with multiplication and division counting operations, using the concept of arithmetic, solve problems related to numeration in everyday life, give examples related to numeration activities.

The observation instrument used descriptive report. Observation grids on literacy activities include use of the GLS module from the government, there are reflection activities, there are various sources of literacy media, students' literacy needs, literacy skills of fifth-grade students, the students' most literacy skills. Open interviews aim to give teachers the flexibility to express their opinions. The interview grid covers the implementation of literacy activities, the diversity of literacy activities, the process of evaluating literacy activities, student responses to the implementation of literacy activities, implementation of basic literacy and numeracy literacy.

Data analysis

The data analysis used was descriptive statistics. Descriptive statistics are data analysis to reveal and interpret data sets. This analysis technique describes the data in categorized data presented in tables or diagrams and then explained.

Results and Discussion

Numeracy literacy skills

Numeracy literacy skills are obtained from the results of the numeracy literacy skills test. The test is carried out by applying six indicators carried out within 60 minutes. Students who follow this test are students at V class by 92 students in Mlati sub-district. The table data is grouped into three groups consisting of Group 1, Group 2, and Group 3. The division of this group is based on the date of data collection.

Table 2. Results of the numeration literacy ability test

No	Indicator					
	Interpreting data		Concept of numeration		Apply	
	Gather data	Constructing tables	Operation count	Identify concept of numeration	Complete problem	Give example
Group 1	66,67	45,97	51,72	32,18	41,95	49,42
Group 2	58,05	54,6	58,62	43,10	43,68	39,08
Group 3	55,39	41,67	42,15	33,82	38,72	38,23
Average	60,03	47,41	50,83	36,36	41,45	42,24

Interview result

Interviews were conducted with two fifth grade teachers to determine the implementation of students' literacy activities and numeracy skills. The following is an excerpt from the teacher interview.

> "When it comes to students' abilities, which are still lacking during math's, Ma'am. Their calculation problems do not have a question, at least they are not careful enough, but if there is a problem in the story, they must be confused about the solution. I'll have to repeat the meaning of the question. Sometimes I feel if my children are happy to read, it must be easy to understand the importance of the problem. Their understanding of the application of mathematics is still lacking, and indeed there are no books available on mathematics ".

Based on the above quotation, it is obtained data that students have difficulty understanding the story problem or problem-solving. Besides, the available books are still inadequate. The facilities for students to foster interest in numeracy literacy have not been properly channeled. The interviews' results were: 1) the available reading books were still lacking, the available books were textbooks; 2) literacy activities have not run optimally, activities carried out are only reading books independently. Some students only play and don't read. Students spend time selecting the reading and just looking at the pictures. Literacy activities do not match with the guidebook from GLS; 3) literacy activities do not yet increase the ability of students, and there is no competency to be addressed as evidenced by the absence of activity reviews or activity evaluations; 4) students tend to be passive when expressing opinions; 5) numerical operations are the basis of arithmetic activities, but students still experience calculation errors.

Observation results

Observations were made in five schools in elementary schools that have implemented the Gerakan Literasi Sekolah (GLS). Literacy is carried out for 30 minutes before the core learning activities. Students are given the freedom to read books they like. Students do literacy independently. Observational research instruments using the results of the description. Results cannot be finalized. So that the following are the results of research observations.

Table 3. Results of observation on literacy activities

No	Observation grids on literacy activities	Details
1	Use of the GLS module from the government	The government module was not yet available. The school literacy movement is still limited to reading activities, no numeracy literacy appears during GLS hours.
2	There are reflection activities	Students tend to be passive in literacy activities. There are no review activities or follow-up activities after students have read.
3	There are various sources of literacy media	There is no systematic guidance on the implementation of the literacy movement. The unavailability of various literacy activities. There are no books containing numeracy literacy.
4	Students' literacy needs	National literacy needs which cover 6 literacy activities are not implemented. There is only one literacy activity carried out, namely reading the book selected by the student.

		The need for numeracy literacy is not implemented in schools. There are no activities or media that support numeracy literacy activities.
5	Literacy skills of fifth-grade students	Students show interest in numeracy activities, but students tend to give up when they encounter difficult questions. Some students have very fast arithmetic abilities, but the story problems have difficulty. Students have not been able to interpret the benefits of counting activities in everyday life. Students are limited to understanding numeracy as a lesson in school.
6	The students' most literacy skills.	The literacy skill that most students have is reading literacy. However, students' reading literacy is only at the stage where students can read without being able to understand its meaning. So that on story questions or telling reading, students find it difficult.

Discussion

This study uses three types of assessment, namely, tests, observations, and open interviews. Each data has its strength. The results of the numeracy literacy test describe the students' numeracy skills. Measure the extent of students' abilities. These results can also assess the success of the numeracy literacy program targets launched from 2017. The first discussion is the results of the numeracy literacy ability test. The test is carried out using three umbrella indicators; each indicator has two sub-indicators. It can be seen in Table 2 that the results of the students' numeracy literacy skills test showed substandard products. All indicators show very poor results. The highest value is 60,03 on the hands, compiling data. The lowest score is 36,36 on the hand, identifying the concept of numeration.

A value analysis of the indicators collects the data to be the highest value. This result is influenced by the students' ability on the data material, which is already in the good enough category. In this indicator, questions are presented then students record important information from the items. Furthermore, the hands identifying the concept of numeration got the lowest score. This factor is influenced because students are not used to doing the numeration process. Students still have not applied the concept of numeration in everyday life. The text above has the same line with the results of interviews and observations, stating that students are not familiar with story problems and problem-solving. The absence of supporting facilities makes students unable to develop their literacy skills. Media sources or books are still lacking, especially books with numeracy not yet available in schools.

The explanation above illustrates that students' reasoning is still low. This result is comparable to the assessment Program for International Student Assessment (PISA) against Indonesian students who assess literacy skills. Indonesia is still classified as weak in mathematical literacy. Indonesia is ranked 72nd out of 78 countries problems (PISA, 2019). Meanwhile, PISA 2021 has started to proclaim that students can use calculators as a media for calculating tools. Students are still focused and only deepen their numeracy skills and continue to forget how to improve their understanding and reasoning. PISA 2021 assessment points are very focused on reasoning and problem solving, not only on numeracy skills. The results of this study provide reasons why Indonesia is still ranked low in PISA. Thus, these results illustrate the correlation that Indonesian students have less literacy.

The unique finding was that this fifth-grade student had an excellent ability to count. In the process of looking up, students can answer quickly. However, if the questions are modified in the form of story questions, students experience difficulties. This fact clearly shows that students' reading comprehension skills are still lacking. Lack of understanding causes students to have trouble making mathematical statements or solving problems. Research on mathematical thinking is described by Hera & Sari (2015) that mathematics, namely making a statement or mathematical sentence related to everyday life. On this indicator, students have difficulty making a statement or concluding data. Students also still need guidance or inducement to spur their thinking about the application of numeracy literacy in life.

Another finding is that students easily give up when they find story questions and questions considered difficult. Students' struggle to solve problems is still low, and they tend to ask for help from others immediately. These findings are in line with the research Musfiroh & Listyorini (2016), which

states that students must face their fear of mathematics in solving math problems. Students need a high willingness to be able to conquer mathematics.

There are interesting findings that confirm the relationship between literacy and numeracy. Students who have a high reading interest have excellent reading comprehension skills. This result supports him in solving numeration problems. This finding is in line with the Ministry of Education and Culture that the numeracy literacy indicator is closely related to reading activities. Reading activities can be used to understand the meaning of reading, in reading comprehension, numeracy skills are a major factor for students to solve problems and find solutions. This result follows the research findings on the indicators that interpret the data that students who are careful and read more quickly understand the data's meaning.

It was found that the similarities in the results of the numeracy literacy tests, observations, and interviews were that the indicators used the concept of numeracy, students showed that they had difficulty providing simple solutions related to the problems they encountered. The ability of numeracy literacy is closely related to situations in everyday life. Literacy skills become provisions for students to solve problems experienced. In line with this opinion, Stecey & Tuner (2015) interpreting literacy in the context of numeracy is to have the power to use numerical thinking in solving daily problems to be better prepared to face life's challenges. However, the field results proved that students were not ready and unable to apply the concept of numeracy literacy in everyday life.

However, some students show that they can apply numeracy in everyday life. The student can imagine problems by involving them in everyday life. Also, he is active in expressing opinions and solving problems. Although only a few students showed this attitude, they desired to develop and realize their potential. This finding is in line with Rakhmawati & Mustadi (2019) opinion, which states that fifth-grade elementary school students have shown an attitude to establish their abilities and desire to develop and understand their potential.

The second discussion is implementing numeracy literacy during the Gerakan Literasi Sekolah. The target for the declaration of literacy activities is indeed quite high. Students are initiated to be able to master various kinds of basic literacy. In this study, the discussion is more focused on the scope of numeracy literacy. Numeracy as the capacity of individuals to make use of quantitative information (Kahan, et.al., 2012). The research was appointed because research related to numeracy literacy in Indonesia is still minimal. Numeracy literacy has not become the focus of basic literacy development in Indonesia. The implementation of literacy activities is always at the habituation stage, with no discussion process, review, or material effect for other basic literacy processes.

The government has set a high enough target for the implementation of literacy activities. The government's targets and goals are contained in the guidelines for the school literacy movement for numeracy literacy. Includes, a) increased mathematics and non-mathematics teacher training; b) increasing numeracy activities in learning; c) The increasing number of problem-based mathematics learning and project-based mathematics learning; d) The increasing number of non-mathematics learning that involves elements of numeracy literacy; and e) Increased math scores in PISA / TIMSS / INAP (Kemendikbud, 2017).

Further data were obtained from observations and interviews conducted during literacy activities and learning activities. The results show that students' numeracy literacy is still low. When literacy activities were carried out, no students read books about numeracy (numbers). The absence of adequate book sources as a cause of students not reading about books related to numbers. Students are not interested in digging insights related to numeration (numbers). The next finding is that the government's literacy activity guideline module is not yet available, so the literacy activity stage has not been implemented properly. The available books are still classified as insufficient so that some students do not read books. Besides, students feel bored reading books that have been read. The books available are old, published books, so the books' information is still not up to date.

Some of the books available include textbooks, storybooks, and novels. They are more interested in reading books that have interesting pictures and colors. The characters in the book also affect the interest in reading books (Nurgiyantoro, 2013). It can be seen that students choose books by looking at the characters they want to read. Not only that, books on various kinds of basic literacy are not yet available for students.

The available books are not sufficient to provide provision for activities according to student needs. The teacher stated that the schoolbooks did not have a specific purpose, meaning that the reading

materials available did not have the desired achievement. The books available in schools have not included students' values and needs, especially the importance of character and good behavior. Not only that, but there were also no books related to numeracy.

Facilities for literacy activities are very important. Students must be refracted to be able to develop numeracy literacy. Literacy activities have a big role to play. As the research results Purpura et al., (2011) about the relationship between Literacy Activities and numeracy development, namely through Literacy Activities, it can improve numeracy skills. This study's results have similarities with research conducted that literacy activities can improve the ability to understand the meaning of calculations.

The government does have examples and strategies that have been included in literacy books. However, the guidebook had not yet arrived at school. And schools do not have the direction to develop literacy activities such as government targets and targets. The GLS program's target has not been going well because of the lack of facilities for students. This obstacle causes literacy activities to only develop in literacy modeling schools since schools have not received literacy activity modules. The literacy activity module has not fully understood the aims and objectives of schools. So, it requires socialization and procurement of qualified media to help students in implementing GLS.

Literacy is a translation of the English word literacy, which is an adoption of the Latin littera (letter), which means that it involves mastering writing systems and how to obtain information. Kress (2003) argues, "literacy is the term to use when we make messages using letters as the means of recording that message." Literacy is a term used when we create messages or information using letters as a tool to record these messages. This context shows that literacy cannot be separated from language, given that letters are the smallest unit of word composition as part of the language.

Literacy develops into an important ability to deal with scientific developments. Literacy has an important role to play in changing individual, social, and personal life (Chalkiadaki, 2018). Literacy is the ability to process thinking in gaining knowledge. Literacy skills develop through various stages of the thought process. In line with that, literacy skills have an important role, namely as a basic ability in the learning process. Literacy and numeracy skills are the basis for students to understand the material before students move to the next level. Students with good literacy and numeracy skills can easily move up to the next level so that more knowledge is gained.

The understanding of the nature of literacy is still not well known. Many people argue that literacy rests only on the reading and writing movement. Meanwhile, the world of literacy is currently known for its various literacy activities and activities (Morrow, 2018). Currently, literacy activities in Indonesia are developing as a process of providing and fulfilling students' needs regarding competencies that must be possessed to form literate citizens or what is called literacy and numeracy. The currently superior program is the National Literacy Movement in 2017 which is a renewal of the School Literacy Movement in 2017. The 2017 National Literacy Movement has excellent programs, namely the provision of literacy in literacy, numeracy, scientific literacy, media literacy, financial literacy, and cultural literacy (Kemendikbud, 2017)

The goals of the government are also explained in detail in the guidelines for the school literacy movement. Not only the target of the school literacy movement, but the government also provides strategies for strengthening the school literacy movement including strengthening the capacity of facilitators, increasing the number and variety of quality learning resources, expansion of Access to learning resources and coverage of learning participants, increasing public Engagement (Kemendikbud, 2017). The government also provides a detailed description of the facilities that should be fulfilled by schools to improve the quality of literacy activities.

Figure 1. Examples of numeracy literacy facilities in schools

The government's plan is in such a way as to contradict the situation on the ground. Based on the data, it was found that many teachers did not understand what literacy was and how to develop literacy skills in students. The understanding of teachers and school residents with various kinds of literacy has not yet been achieved. Most of them only carry out a structured reading literacy process. The teacher doesn't even understand basic literacy, which consists of 6 basic literacy skills. This is not following the opinion by Lewandowski (2015) in the form of three bases to adjust its use, namely: literacy as a term that represents the potential for speaking, writing, describing, and body language, literacy as a term that gives meaning to the production of messages such as literacy, oration, numeration, and so on, and literacy as a term that describes the source of the spread of meaning as a message, for example, internet publishing.

Literacy activities should use all areas of activity to develop students' abilities. Students' needs must be met properly, but if the facilitator does not understand the students' needs, then the students' needs are not met. According to the Cambridge Assessment (2013) literacy is also defined in various meanings. The term literacy often narrowly refers to reading, sometimes reading and writing, and sometimes covering reading, writing, speaking, and listening.

The government launched literacy learning using a problem-based learning model. Learning is associated in everyday life. The advantage is to train children to solve problems and train students' creativity. The Project based learning model is very good in developing decision-making skills, creative abilities, and problem-solving abilities (Winarni & Purwandari, 2020). However, the facts in the field, there is absolutely no problem-based learning to develop student literacy. Gatabi et.al. (2012) states that mathematical literacy is closely related to drafting concepts, working coherently, solving problems, and checking answers.

Based on the data, it was found that the stages of literacy activities had not been reached. It should be noted that school literacy activities consist of three stages, namely the habituation stage, the development stage, and the learning stage. The habituation stage consists of reading books in the school environment. The development stage consists of integrated reading, reading together, discussion, and development activities for each individual. The learning stage consists of literacy-based learning activities so that literacy activities mingle with classroom learning activities.

Based on the data found, the literacy activity stage is still at the habituation stage. Students are still formed to have a habit of reading for 15 minutes; it has not been seen for the development of the ability of the six national literacies that have been proclaimed by the government. The teacher's ignorance as a facilitator is a major factor in the implementation of the national literacy movement that has not been implemented. The teacher claimed that the lack of notification and training for the literacy movement was the main factor inhibiting the implementation of the national literacy movement. This condition is the very opposite of the statement by Tai and Lin (2015) that to develop students' numeracy skills, teachers also need the help of appropriate media and strategies.

Based on Umbara and Suryadi's research (2019), data shows that 60% of teachers lack knowledge of mathematical literacy. This factor is one of the root problems because the teacher cannot provide facilities for the development of students' numeracy literacy. The existence of facilities and reading awareness greatly affect student literacy. Many students still have less awareness of reading (Magdalena et.al., 2019). The facts conveyed are the same as the situation of the students who are the research

subjects. The implementation of the school literacy movement is currently constrained by the guidebook, which until now has not been accepted by elementary schools. The absence of guidance for teachers is also a major obstacle to the school literacy movement that has not been implemented properly, so that six types of literacy have not been introduced to students.

Conclusion

The implementation of the Gerakan Literasi Nasional (GLN) in 2017 has not been implemented. Literacy still focuses on getting used to reading only activities. This result is contrary to the literacy path map, which emphasizes that basic literacy consisting of literacy, numeracy, science, finance, media, and culture has not been developed. There are no signs that these literacies will be implemented shortly. So, a solution is needed if it can help students. At least by introducing various kinds of basic literacy. Thus, students will be able to get used to themselves when literacy programs are more focused later.

That statement found that students' numeracy skills were still low and could be far from standard. The implementation of literacy activities has not been running optimally; media limitations for literacy activities are the main obstacle. Not only that, but numeracy literacy has also not been implemented in literacy activities. Students have not touched basic literacy at all in literacy activities at school. This research proves that the target and reality of the results are still contradictory. A solution is needed so that students can accept numeracy and basic literacy well.

References

Browne, N. (2005). *Young children's literacy development and the role of televisual texts*. Taylor & Francis Group.

Cambridge Assessment. (2013). *What is literacy? An investigation into definitions of English as a subject and the relationship between English, literacy and "being literate"*.

Chalkiadaki, A. (2018). A systematic literature review of 21st century skills and Competencies in Primary Education. *International Journal of Instruction, 11*(3), 1-16. https://doi.org/10.12973/iji.2018.1131a

Department of Education and Skills. (2010). *Better literacy and numeracy for children and young people: A draft national plan to improve literacy and numeracy in schools*. DES.

Ferrari, J. (2012). *Lessons from Asia show way forward for schools*. The Australian.

Gatabi, A. R., Stacey, K., & Gooya, Z. (2012). Investigating grade nine textbook problems for characteristics related to mathematical literacy. *Mathematics Education Research Journal*, *24*(4), 403–421. https://doi.org/10.1007/s13394-012-0052-5

Grasby, K. L., Little, C. W., Byrne, B., Coventry, W. L., Olson, R. K., Larsen, S., & Samuelsson, S. (2020). Estimating classroom-level influences on literacy and numeracy: A twin study. *Journal of Educational Psychology, 112*(6), 1154–1166. https://doi.org/10.1037/edu0000418

Hera, R., & Sari, N. (2015). Literasi matematika : apa , mengapa dan bagaimana ? [Mathematical literacy: what, why and how?]. *In Seminar Nasional Matematika dan Pendidikan Matematika UNY, 8*, 713–720.

Jordan, N. C., Kaplan, D., Ramineni, C., & Locuniak, M. N. (2009). Early math matters: Kindergarten number competence and later mathematics outcomes. *Developmental Psychology*, *45*, 850–867

Kahan, D. M., Peters, K., Wittlin, M., & Slovic, P. (2012). The polarizing impact of science literacy and numeracy on perceived climate change risks. *Nature Climate Change, 2(*10), 732-735

Kemendikbud. (2017). Materi pendukung literasi numerasi [Numerical literacy support materials]. Tim GLN Kemendikbud.

Kemendikbud. (2017). Peta jalan gerakan literasi nasional [National literacy movement roadmap]. Tim GLN Kemendikbud.

Kovas, Y., Voronin, I,. Kaydalov, A. Malykh, S.B., Dale,P.S., & Plomin, R. (2013). Literacy and numeracy are more heritable than intelligence in primary school. *Psychology Science, 24*(10), 2048-2056. https://doi.org/10.1177/0956797613486982

Kress, G. (2003). *Literacy in the new media age*. Routledge.

Lewandowski C. M. (2015). *The effects of brief mindfulness intervention on acute pain experience: an examination of individual difference*. WHO Global Tuberculosis Report.

Tai, W. C., & Lin, S. W. (2015). Relationship between problem-solving style and mathematical literacy.

Educational Research and Reviews 10(11), 1480-1486. https://doi.org/10.5897/ERR2015.2266

Magdalena, I., Akbar. M., & Situmorang, R. (2019). Evaluation of the implementation of the school literacy movement in elementary schools in the district and City of Tangerang. *International Journal of Multicultural and Multireligious Understanding*, *6*(4), 537-545. https://doi.org/10.18415/ijmmu.v6i4.1029

Manolitsis, G., Georgiou, G. K., & Tziraki, N. (2013). Examining the effects of home literacy and numeracy environment on early reading and math acquisition. *Early Childhood Research Quarterly. 28*(4), 692-703. https://doi.org/10.1016/j.ecresq.2013.05.004

Meeks, L., Kemp, C., & Stephenson, J. (2014). Standards in literacy and numeracy: Contributing factors. Australian Journal of Teacher Education, 39(7), 106-139. https://doi.org/10.14221/ajte.2014v39n7.3

Morrow, L. M. (2018). *Literacy development in the early years: Helping children read and write*. Pearson Education, Inc.

Munn, P. (2007). The early development of literacy and numeracy skills. *European Early Childhood Education Research Journal, 2*(1), 5-18. https://doi.org/10.1080/13502939485207491

Musfiroh, T & Listyorini, B. (2016). Konstruk kompetensi literasi untuk siswa sekolah dasar [Literacy competency construct for elementary school students]. *LITERA, 15*(1), 2–5. https://doi.org/10.21831/ltr.v15i1.9751

Musliman, R., Rahayah, S., & Din, R. (2013). Assessing students' spatial intelligence for literacy and numeracy skills. *Social and Behavioral Sciences, 90*, 695–701. https://doi.org/10.1016/j.sbspro.2013.07.142

Neumann, M. M., Hood, M. Ford, R. M., & Neumann, D. L. (2013). Letter and numeral identification: their relationship with early literacy and numeracy skills. *European Early Childhood Education Research Journal, 21*(4), 489-501. https://doi.org/10.1080/1350293X.2013.845438

Nurgiyantoro, B. (2013). Sastra anak: *Pengantar pemahaman dunia anak [Children's literature: An introduction to understanding the world of children]*. Gajah Mada University Press.

OECD. (2019). *Programme for international student assessment (PISA) Result from PISA 2019.* Retrired by www.oecd.org.edu/pisa.

Ojose, B. (2011). Mathematics literacy : are we able to put the mathematics we learn into everyday use? Journal of Mathematics Education, 4(1), 89-100. https://doi.org/10.12691/education-7-10-1

PISA. (2012). *Assesment and analytical framework: mathematics, raeding, science, problem solving and financial literacy*. OECD Publisher.

Purpura, D. J., Hume, L. E., Sims, D. M., & Lonigan, C. J. (2011). Journal of Experimental Child Early literacy and early numeracy : The value of including early literacy skills in the prediction of numeracy development. *Journal of Experimental Child Psychology, 110*(4), 647658.https://doi.org/10.1016/j.jecp.2011.07.004

Rakhmawati, Y., & Mustadi, A. (2019). Self-efficacy in primary schools students as potential characters: from the perspective of students' self-ability and interest. *Mimbar Sekolah Dasar, 6*(1), 55-67. doi:http://dx.doi.org/10.17509/mimbar-sd.v6i1.15221.

Rosenberg, J. (2012). *NAPLAN results show top students' standards drop*. Sydney Morning Herald.

Segers, E., Kleemans, T., & Verhoeven, L. (2015). Role of parent literacy and numeracy expectations and activities in predicting early numeracy skills. *Mathematical Thinking and Learning*, *17*(2-3), 219-236. https://doi.org/10.1080/10986065.2015.1016819

Stecey, K & Tuner, R. (2015). *Assessing mathematical literacy. The PISA experience*. Springer.

Umbara, U & Suryadi, D. (2019). Re-interpretation of mathematical literacy based on the teacher's perspective. *International Journal of Instruction, 12*(4), 789-806. https://doi.org/10.29333/iji.2019.12450a

UNESCO. (2013). *Educational indicators and data analysis: National literacy statistics from literacy test.*

Winarni, E. W. & Purwandari, E. P. (2020). Project based learning to improve scientific literacy for primary education postgraduate students in science subject. Jurnal Prima Edukasia, 8 (1), 2020, 67-77. http://dx.doi.org/10.21831/jpe.v8i1.30618