Vol. 8, No. 1 (2024) 17-24 ISSN: 2597-4866
Indonesian Journal of Primary Education

# Profile of the Availability and Use of Learning Media that Supports Improving Numeracy Skills in Elementary and Junior High Schools

**Herman Syafri[1*], Lutfi Nur[1], Muhammad Rijal Wahid Muharram[1], Qonita[1], Hari Ahmad Zulfikar[1], Alfi Fahimiah[1], Thiana Nurussakinah[1], Siti Fauziah Tsani[1], Muhamad Rifqi Ilhamul Fauzi[1], Azizah Septiani[1], Kholad Nasution[2], Maulud Siregar[2]**

[1]Universitas Pendidikan Indonesia, Tasikmalaya Campus, West Java, Indonesia
[2]CV. Satria Karya, Jakarta, Indonesia

**Corresponding author:* herman.syafri@upi.edu

Submitted/Received 14 December 2023; First Revised 15 December 2024; Accepted 25 May 2024
First Available Online 1 June 2024; Publication Date 1 June 2024

***Abstract***

*This research aims to determine the profile of the availability of learning media that supports improving numeracy skills in elementary and junior high schools in Tasikmalaya Regency and City and their use, using a qualitative approach, while the methods used are interviews and commentary studies. The research findings obtained are that several elementary schools and junior high schools in Tasikmalaya Regency and City have learning media that supports improving students' numeracy skills, the source comes from grants, schools rarely budget for purchasing media, and rarely even make their own media. However, unfortunately the existing media does not work optimally, because teachers are reluctant to use media and focus only on textbooks, even though all the sources interviewed said that the use of media in learning, especially in learning Mathematics, is very important.*

***Keywords:*** *Learning Media, Numeracy*

## INTRODUCTION

Numeracy is the ability to solve problems in everyday life by using numbers and symbols, Kemdikbud (Mahmud, et al, 2019). Meanwhile, Bopo, et al (2023) argue that numeracy involves problem solving and logical thinking. Talking about numeration is of course related to numbers, where these numbers are inseparable from mathematics. Therefore, as we know, in the world of education, mathematical skills are very important to be learned and possessed by students, which of course will be very useful both for social interaction in the surrounding environment, continuing education, understanding the concepts of other subjects at school, as well as understanding the concepts of mathematics. another simple one. Apart from that, it is stated in the Minister of Education and Culture, Research and Technology Regulation No. 5 of 2022 concerning Numeracy Competency as a Graduation Standard for Elementary School (article 6) and SMP (article 7) which requires students to be able to have numeracy competency as a graduation requirement. However, at this time, the fact is that the numeracy abilities of students in Indonesia are still relatively lacking, this is proven and strengthened by the results of the Trends in Mathematics and Science Study (TIMSS) and Program for International Student Assessment (PISA) assessments which state that children's abilities in Indonesia it is included in the low category (level) 3. Apart from that, since the abolition of the National Examination (UN), the Minimum Ability Assessment (AKM) has emerged which focuses quite heavily on aspects of literacy and numeracy, the results of which show that students' numeracy abilities are still at a deficient stage.

Meanwhile, in the increasingly advanced digital era, numeracy skills are of course becoming increasingly important for students, as an effort to prepare them to face the demands of the modern world (Geiger et al., 2015). Students who have good numeracy skills will certainly be able to adapt more easily to technological developments that continue to change dynamically (Anggreini & Priyojadmiko, 2022). This means that there is a big influence on students who receive good numeracy teaching, when compared to those who do not receive good teaching or even none at all. Therefore, it is important to have numeracy skills, where students will be able to understand and use various digital tools and the latest technology related to data and numbers (Darwanto & Putri, 2021). With strong numeracy skills, students will be able to solve complex problems in various fields, be it science, technology, engineering, or other fields of science (Andeha & Maskar, 2021). Students will also be able to analyze data, identify trends, and make decisions supported by facts and figures in the field.

Of course, this does not just happen by itself, but is influenced by several factors, both internal factors of students and external factors. The internal factors (inside) students will influence their numeracy abilities. Students who have low numeracy abilities are because the students' own mindset or thinking patterns are often embedded in the belief that learning numeracy is difficult (Nasiba, 2022). Apart from internal factors, there are also factors that are considered the strongest that can influence student development, namely external factors, namely the student's own environment. As stated in education, it includes three educational centers, namely school, home and environment.

Schools should very well be used as one of the main educational centers that can determine the success of educational goals. Educational success itself can be achieved through various things and one of them can be done by supporting the learning media facilities available at each school. As we know, learning media is a tool that can make classroom learning more interesting and create an interactive impression on students. By presenting material in various interesting formats, students usually tend to be more involved in the learning process (Yip & Kwan, 2006). Learning media is a tool that can help teachers explain difficult or abstract concepts in a more concrete way which makes them easier for students to understand (Shoimah et al., 2021). Available media such as images, videos, or physical objects can really help teachers and students in visualizing a concept better (Vavra et al., 2011).

Therefore, researchers conducted research regarding the profile of the availability and use of learning media that can support students in improving their numeracy skills in elementary and junior high schools.

## METHODS

Research methods are the methods used by researchers to create, carry out, organize data and draw conclusions about certain research problems (Fadliyati, 2019).

The research used was a qualitative approach, where through this approach, the researcher attempted to describe the condition of the numeracy teaching aids in each school in Tasikmalaya Regency and City. What is needed in this research is willingness and close collaboration between researchers and the schools to be visited. The data collection techniques used in this research are through direct interviews and documentation studies. The use of interviews as a data collection method begins with the assumption that the participant's perspective is meaningful,

knowable, and can be made explicit (Skinner et al., 2014). The documentation study was carried out to provide a comprehensive picture of the availability of learning media, patterns of use, and perceptions regarding its impact on improving numeracy skills. The documentation study instrument was designed to measure related variables, such as the amount and type of learning media available, frequency of use, and perceptions of its effectiveness.

Meanwhile, the supporting tools used in this research were audio recorders, digital cameras, textbooks and other documents needed to support the interview process. This research aims to determine the profile of willingness and use of Numeracy Learning Media in schools. Informants who provide information about the condition of teaching aids at school and informants can help researchers obtain accurate information or can provide additional information about the research subject. The informants were chosen deliberately by the researcher using criteria, namely selecting people who the researcher considered to know the condition of the teaching aids in the school, through interviews with the principal and class teacher concerned.

## RESULTS AND DISCUSSION

Based on the results of interviews conducted with informants, the result was that all teachers said that the existence of learning media in each school is very important and must be applied and utilized, as an effort to make it easier for students, especially in understanding the lesson theory presented by the teacher. When in class, it can also hone the social and emotional development of students.

Of the 6 schools that have been researched, it turns out that most schools already have learning media that can support numeracy learning, some schools even have up to 10 media. These media come from various sources, namely consisting of grants from the government, there are also schools that deliberately buy the media to facilitate teaching and learning activities, and there are schools that take the initiative to make the media they need themselves, even in the manufacturing process involving participants. educate directly and at the same time increase their creative spirit. The following table presents the availability and use of numeracy learning media.

**Table 1**
**(Availability and Use of Numeracy Media in Elementary School)**

| ES | NM | MUD |
|---|---|---|
| A | 10 | NO |
| B | 2 | NO |
| C | 2 | NO |
| D | - | - |
| E | 1 | NO |

Information:
ES = Elementary School
NM = Number of Media
MUD = Media Usage Data
NO = Not Optimal

Based on table 1, school A has numeracy learning media totaling 10 media packages, namely Place Value Mathematics KIT, VIRTUAL Mathematics KIT, Folding Symmetry Mirror, Mathematics KIT, Weight Scales, Clock Model, Square Building, Ranggram, Nailed Board, and Area Diagram. All available media was obtained through grants provided by the government. However, unfortunately these media are still rarely used and utilized. Teachers reasoned that they were reluctant to use the learning media that had been provided, because the teachers felt confused about the procedures for using these

media. This means there is a lack of socialization to teachers regarding the procedures for using learning media. Teachers also feel that without learning media, teaching and learning activities will still be able to run, but in fact learning will still be less than optimal.

The same thing happened in schools B and C which had learning media in the form of spatial shapes and flat shapes. However, this media is rarely used in these schools, and is not even used during lessons with relevant and related material, because the available media is stored in places that are rare or difficult to reach on the pretext that the media remains intact and not easily damaged, so it is not uncommon for students to Teachers themselves also forget about the existence of these media which makes their use minimal.

Furthermore, there is a difference with schools A, B and C, in school D it turns out that there is no numeracy learning media at all, the teachers only need to rely on the textbooks available at the school for teaching and learning activities with the students. Even so, fortunately the package book is also equipped with several instructions or instructions for students to be able to take part in learning activities such as carrying out practical activities, for example they get instructions on how to know and know the clock, and also how to make pictures. O'clock.

Meanwhile, the last school studied was school E, where the school already had numeracy learning media in the form of a Mathematics KIT package obtained through a grant. However, there is something that is very unfortunate for researchers, namely that when they look at the media, it looks dirty because it is not used optimally and is not well maintained, all the media available at the school has never been used, and some teachers don't even know it exists. existence of the media.

**Table 2**
**(Availability and Use of Numeracy Media in Junior High School)**

| JHS | NM | MUD |
|---|---|---|
| A | 5 | NO |
| B | - | - |

Information :
JHS = Junior High School
NM = Number of Media
MUD = Media Usage Data
NO = Not Optimal

School A stated that the existence of visual aids was very important as an effort to increase numeracy in school, because teachers felt how difficult it was to transition from abstract to real without any media or visual aids being used. Also, because of this teaching aid, it will be easier for students to understand the content of the lesson material presented by the teacher during the learning process. The teaching aids available at the school are room structures made of paper. However, teachers still rarely use these teaching aids and their use cannot be said to be optimal. The types of teaching aids in question at the school consist of circle models, slide rules, number lines, triangle models, and geometry.

Likewise, the school B teacher stated that teaching aids have a very important role in supporting learning so that they can increase students' understanding. However, unfortunately this school does not have any numeracy teaching aids at all.

According to Ariani & Ujiti (2021), basically learning media is a tool that can be used to communicate (send and receive messages) from one person to another so that it can stimulate the thoughts, feelings, attention and interest of students to be able to understand a teaching. given so that the objectives of the learning can be achieved well.

Learning media has a very, very important role in improving students' numeracy skills (Husniati et al., 2022). By utilizing appropriate learning media that is relevant to

the material, students will be able to gain a better understanding of mathematical and scientific concepts related to numeracy.

Learning media can help students to be able to visualize complex mathematical and scientific concepts (Amir, 2014). This visualization can definitely help students understand concepts that are considered difficult and can increase students' understanding of numerical topics (Phillips et al., 2010).

Apart from that, according to Ibrahim (Maflikha, 2020) stated that learning media is important to be able to arouse students' enthusiasm and enthusiasm during learning, in fact learning will become more lively and there will also be two-way discussions, so that the class will feel more enjoyable. Furthermore, according to Hamalik (Erviana, 2015) stated that the learning media available in the teaching and learning process can increase students' curiosity and can raise their motivation so that they can solve problems in the media, instead of having a negative influence on the students' psychology.

Learning media is of course very varied. As for interactive learning media, such as learning software and educational applications, it is possible to encourage active participation of students (Gan et al., 2015). By using educational games, simulations or interactive videos, students can simultaneously carry out learning activities while playing and are directly involved in the learning process. It is certain that interesting and interactive learning media will be able to increase students' motivation in learning numerical concepts (Ramlah et al., 2022). Apart from that, by using an interesting and fun learning approach, students will tend to be more enthusiastic and eager to gain knowledge and skills through teaching.

Digital learning media is a tool that allows students to learn anytime, anywhere and with anyone (Azis, 2019). Students can now access numerical learning materials via their mobile devices, tablets or computers at home, which of course can increase learning flexibility according to their needs and preferences. Learning media can also emphasize students on the practical application of numerical concepts in everyday life (Lestari, 2019). By integrating real examples, problems based on field facts, or simulations into learning media, students can see how numerical concepts are used in real situations. By using digital learning media, students will be able to develop technology skills that are important for their future (Gan et al., 2015). Students will become accustomed to using various devices, both hardware and software, which will help them prepare themselves for an increasingly digital work environment in the future.

When choosing learning media you cannot be careless, there are things you need to pay attention to so that they suit the needs and character of students. Because not all learning media can immediately be used to improve students' numeracy skills, only media that are numerical in nature can be relevant. By utilizing appropriate numeracy learning media that is relevant to learning needs and objectives, educators can increase students' understanding of numerical concepts, can motivate students to study harder, and can prepare them to face the challenges of the future in a world that is increasingly changing. connected and driven by technological developments.

## CONCLUSION

Almost all elementary and junior high schools in Tasikmalaya Regency and City have learning media that can support students' numeracy skills. On average, these media are the result of grants from the government, but unfortunately these media are not used optimally by the school community. , mainly due to the lack of internal motivation of teachers to be able to use this media in teaching and learning activities. Based on this explanation, the researchers provided several recommendations, namely as follows:

1. Schools need to increase internal motivation for teachers to be able to use learning media according to its function

and use, by providing training and assistance to apply this media.
2. Teachers need to optimize the use of learning media by integrating the media into daily learning and ensuring that the media can be accessed or used easily by students.
3. The entire school community at least needs to evaluate the effectiveness of the use of learning media in improving students' numeracy skills on a regular basis and make improvements if necessary.

By making these recommendations, it is hoped that the use of learning media as an effort to improve students' numeracy skills can be optimized and utilized well, and can have many positive impacts on both teachers, students and the learning process in schools, so that they can achieve learning objectives.

When choosing learning media you cannot be careless, there are things you need to pay attention to so that they suit the needs and character of students. Because not all learning media can immediately be used to improve students' numeracy skills, only media that are numerical in nature can be relevant. By utilizing appropriate numeracy learning media that is relevant to learning needs and objectives, educators can increase students' understanding of numerical concepts, can motivate students to study harder, and can prepare them to face the challenges of the future in a world that is increasingly changing. connected and driven by technological developments.

## ACKNOWLEDGMENTS

Thank you to the Ministry of Education, Culture, Research and Technology for providing grant funds, as stated in Letter Number 0391/E.E1/KS.03.00/2023, so that it can provide many benefits and help us in the downstream activities of learning media innovation in the form of Numeracy KIT products. as well as derivative products. Apart from that, we would like to express our gratitude to all elementary school and junior high school teachers throughout Tasikmalaya Regency and City who were willing to be resource persons and accompany researchers while conducting research in schools.

## REFERENCES

Amir, A. (2014). Elementary mathematics learning using manipulative media. In Pedagogical Forum (Vol. 6, No. 01). IAIN Padangsidimpuan.

Anderha, R. R., & Maskar, S. (2021). The Influence of Numeracy Ability in Solving Mathematics Problems on the Learning Achievement of Mathematics Education Students. Scientific Journal of Realistic Mathematics, 2(1), 1-10.

Anggreini, D., & Priyojadmiko, E. (2022). The role of teachers in facing the challenges of implementing independent learning to improve mathematics learning in the omicron era and the society 5.0 era. In Proceedings of the PGSD UST National Seminar (Vol. 1, No. 1, pp. 75-87).

Ariani, N. K., & Ujiti, P. R. (2021). Animated Video Media to Improve Listening Skills in Early Childhood. Journal of Early Childhood Education Undiksha, 9(1), 43. https://doi.org/10.23887/paud.v9i1.35690.

Azis, T. N. (2019). Digital era learning strategies. In The Annual Conference on Islamic Education and Social Science (Vol. 1, No. 2, pp. 308-318).

Bopo, et al. (2023). Improving Numeracy Skills with Smart Counting Board Media at the Age of 6-7 Years. Citra Bakti Educational Scientific Journal, 10(3), p. 468-480. DOI: https://doi.org/10.38048/jipcb.v10i3.1998

Darwanto, D., & Putri, A. M. (2021). Strengthening Literacy, Numeracy, and

Adaptation of Technology in Learning in Schools: (an Effort to Face the Digital Era and Disruption). Exponent, 11(2), 25-35.

Erviana, V. Y., & Muslimah, M. (2018). Development of Smart Ladder Learning Media for Elementary School Class 1 Addition and Subtraction Material. Journal of Educational Science Research, 11 (1), 58-68.

Fadliyati, R. (2019). Use of S2DLS Media (Sony Sugema Digital Learning System) in Improving Student Learning Outcomes at Alfa Centauri High School Bandung (Correlational Descriptive Study in Mathematics Subjects for Class X MIA Students at Alfa Centauri High School Bandung). Bandung, 2 (1), p. 38–66.

Gan, B., Menkhoff, T., & Smith, R. (2015). Enhancing students' learning process through interactive digital media: New opportunities for collaborative learning. Computers in Human Behavior, 51, 652-663.

Geiger, V., Goos, M., & Forgasz, H. (2015). A rich interpretation of numeracy for the 21st century: A survey of the state of the field. ZDM, 47, 531-548.

Husniati, H., Affandi, L. H., Saputra, H. H., & Makki, M. (2022). Teacher Performance in Developing Inclusive Students' Numeracy Literacy Skills at Sdn Gugus I Kopang. COLLASE (Creative of Learning Students Elementary Education), 5(3), 438-445.

Lestari, N. A. P. (2019). The effect of implementing contextual learning on mathematics learning outcomes with the covariables numerical ability and verbal ability. Indonesian Journal of Basic Education, 5(1), 72-87.

Maflikha, M. Mathematics Learning Media for Grade 1 Elementary School. In Social, Humanities, and Educational Studies (SHES) : Conference Series, 3 (3), pp.2276-2282.

Mahmud, M, et al. (2019). Students' Numeracy Literacy in Solving Unstructured Problems. Kalamatics: Journal of Mathematics Education, 4(1), p. 69-88.

Nasiba, U. (2022). Secret Safe: Numeracy Learning Media Based on Computational Thinking to Improve Problem Solving Abilities. Journal of Elementary Education Didactics, 6(2). 521-538. doi: 10.26811/didaktika.v6i2.764

Minister of Education and Culture, Research and Technology Regulation No. 5 of 2022 concerning Numeracy Competency as an Elementary School Graduation Standard

Phillips, L. M., Norris, S. P., & Macnab, J. S. (2010). Visualization in mathematics, reading and science education (Vol. 5). Springer Science & Business Media.

Ramlah, R., Riana, N., & Abadi, A. P. (2022). Fun math learning for elementary school students through interactive puzzle media. SJME (Supremum Journal of Mathematics Education), 6(1), 25-34.

Shoimah, R. N., Syafi'aturrosyidah, M., & Hadya, S. (2021). Using concrete learning media to improve learning activities and understanding of the concept of fractions in Mathematics for class III students at MI Ma'arif Nu Sukodadi-Lamongan. MIDA: Journal of Islamic Basic Education, 4(2), 1-18.

Skinner, J., Edwards, A., & Corbett, B. (2014). Research methods for sport management. In Research Methods for Sport Management. https://doi.org/10.4324/9780203856123

Vavra, K. L., Janjic-Watrich, V., Loerke, K., Phillips, L. M., Norris, S. P., & Macnab,

J. (2011). Visualization in science education. Alberta Science Education Journal, 41(1), 22-30.

Yip, F. W., & Kwan, A. C. (2006). Online vocabulary games as a tool for teaching and learning English vocabulary. Educational media international, 43(3), 233-249. https://doi.org/10.1080/09523980600641445