JMKSP (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan)
Volume 10 (1) 2025, 927-942
E-ISSN 2614-8021, P-ISSN 2548-7094

Analysis Ability Numeracy on Sundanese Manda Game in Mathematics Learning for Grade V in Elementary School

Femi Hidayati[1], Nur Ngazizah[1], Titi Anjarini[1]
[1]Universitas Muhammadiyah Purworejo, Jawa Tengah, Indonesia

Corresponding author e-mail: femi hidayati6472@gmail.com

Article History: Received on 27 June 2025, Revised on 28 June 2025, Published on 30 June 2025

Abstract: The numeracy ability of fifth grade students of SDN Kedungpucang through the traditional Sundanese Manda game was examined in this study. The results of the AKM pre-test showed that the average student numeracy score was 50.33, below the school's KKM of 70. This study aims to analyze ability numeracy in games Sundanese manda in mathematics learning. This type of research is included in the qualitative descriptive category. with stages like data collection, data reduction, extraction conclusions, and verification. Tools for collecting data include observation , interviews , documentation , and sheets. Work student. Data analysis methods applied use approach analysis descriptive qualitative. Student performance was measured through active discussion, accuracy in solving problems, and application of mathematical concepts in real situations. The results of the study after the intervention increased significantly, with the average post-test being 67.33 or an increase of 17 points. Students involved in the game showed understanding operation count on concept numeracy in a way deep and contextual. Thus, integration game traditional sunda manda proven effective in develop skills numeracy .

Keywords : Ability, Numeracy, Games, Sundanese, Mathematics .

A. Introduction

Ability numeracy student is skills literacy the important basics for students at school base as well as related close with understanding numbers, data and their meaning. Evaluation competencies implemented by students Class V in semester 2 aims to for measure level development ability numeracy. This action was taken to assess competence student in ability numeracy especially in learning Mathematics. Learning mathematics through curriculum independent help increase creativity student in solve a problem. A analysis show that teacher's attention to problem mathematics often limited to topics that are considered difficult for students , so ignore potential development ability more numeracy wide (Nurhayati et al., 2022) . Based on previous findings, the level of preparation learning and ability numeracy start seen in students class above . In line with plan researcher, study This involving student class V at the level school base as respondents.

The Gap within ability numeracy in school students base become attention main, because ability This is an important foundation for solving basic mathematical problems. Analysis by teachers of various problem mathematics Still limited, especially only on topics that students consider difficult (Permatasari, 2021) . Ability students in the numeracy fields required by students , as aeady revealed by researchers previously , no Enough For help they in finish problems mathematics base (Irwan & Masrul, 2023) . Teachers must always be creative and be able to modify teaching materials to create atmosphere in the learning process . Research previously show ability numeracy student Not yet adequate For finish question mathematics basic . For overcome matter this , utilization game traditional Sundanese manda expected can become solution innovative in increase numeracy student in a way fun and effective (Amreta et al., 2025) . Game This practiced by students fifth grade at

Kedungpucang Elementary School as one of the work programs student Campus Teaching Class 7.
Ability numeracy referring to skills in understand, utilize, and interact with number as well as information numeric in activity everyday. According to (Ngazizah et al., 2022) , ability This covering various aspects , starting from ability base like count until more capabilities complex like data analysis and problem solving problem . According to NCTM standards , there are a number of ability the main thing to do owned , namely ability in solve problem, communicate, create connection, do reasoning, and use representation mathematics (Communication et al., 2024) . Solution the problem in question in context ability numeracy No only just finish questions existing mathematics. More from that, in context literacy numeracy, for student expected capable find relevant and contextual solutions to the challenges they face face it in activity daily. Skills This own connection close with understanding numbers, basic data, and their associations with meaning certain. Students must capable complete the questions mathematics base in assessment minimum competency (Nurgiyanto et al., 2022) .

Theories underlying numeracy skills, such as constructivism, emphasize that mathematical knowledge is constructed by students through direct experience and interaction with the environment (Rachmawati, 2023) . In this context, the application of constructivism theory needs to be integrated in real terms into the Sundanese Manda game mechanism. In addition to introducing draft numbers, games this is also in explicit give chance to student For apply principles mathematics in context life real. For example, when students count steps in a game, they not only learn numbers, but also understand the concepts of distance and estimation. Activities such as problem solving that arise during the game create a relevant context, so that the process of learning mathematics takes place contextually and in line with the principles of constructivism. Thus, learning theory and game practice are interconnected and do not run separately, thus creating a holistic and in-depth learning experience.

As expressed by (Casfian et al., 2024) "Constructivism allow student For build knowledge they Alone through meaningful experience." Therefore that, integration between theory and practice important For create environment effective learning.

In addition, mastery mathematics basic by students need investigated return through implementation diverse method learning, such as learning contextual, collaborative, and based on game. Context This in harmony with research by (Rahmat & Suparjana, 2023) . Various approach learning which is proven effective in develop ability numeracy students in this study, namely the approach based on Game. Approach based on game need analyzed more carry on which integrates aspect social and emotional in learning can give impact positive for students . Studies show that participating students in learning active tend own better understanding deep about concepts mathematics compared to with method learning more traditional nature passive.

B. Method

Type research used in studies This is approach descriptive qualitative. According to (Sugiono & Lestari, 2021) , Qualitative methods in study used For explore and understand in a way deep about the condition object in a way natural, where researchers functioning as tool main in data collection. Research implemented from month February until June 2024 at Kedungpucang State Elementary School with subject The research was grade V of elementary school . *Purposive sampling* method used For determine subject in study This time **,** there were 25 students involved includes 13 men and 12 women . According to (Sugiono et al., 2020) *purposive sampling* is technique election sample done with notice various relevant aspects with objective study This.

Observation method, interview, and data collection tasi documents become a strategy in the effort to collect research data. Ministry of

Education, Culture, Research, and Technology set the period 2022 to 2024 as a recovery period learning, where the curriculum new can implemented by schools that have Ready. Furthermore , in 2024 , the implementation curriculum during the recovery period learning will evaluated For compile policy furthermore (Salsinha et al., 2024) .

The research design applied is approach studies case. Research This prioritizes depiction experience individual or group in context certain. According to (Millah et al., 2023) design narrative allow researcher For compile data in form story or narrative that describes experience subject research. Based on Miles and Huberman's opinion analysis descriptive qualitative consists of on three stage main , namely data reduction , data presentation, and verification or withdrawal conclusions based on available data (Safrudin et al., 2023) . The data reduction stage is carried out with method do observation directly in the field on the learning process and behavior students who experience difficulty in understand material lesson (Sri Annisa & Mailani, 2023) .

C. Results and Discussion

Results

Ability numeracy is very important aspect in education, because reflect to what extent participants educate capable understand and apply draft mathematics in life everyday. Based on results test the beginning of what was done against 25 participants educate, average value numeracy obtained is 50.33 of score maximum 100, which is still far below minimum standards set school, namely 70. Findings This Enough worrying, considering low ability numeracy can give impact negative to performance academic participant educate in the field others, especially in the field of science and technology. A research by (Ayu & Syukur, 2023) describe that students who have level good understanding about number count tend more success in field academic others. For overcome problem said, the

implementation game Sundanese manda in learning chosen as one of the alternative.
Implementation game This done in two designed session for increase involvement participant educate in the learning process. Through game said , participants educate expected can participate in a way active , counting steps , and make decision based on the chosen strategy , so ability numeracy they can increase in a way gradually (Widati et al., 2025) .

Proportion participant students who receive answer correct on the test beginning numeracy classified as low . Of the 25 students who took part test of those, only 12 students or around 48% are capable answer more from half amount question with right. While that , as many as 13 students or 52 % other Not yet reach criteria This data is indicates that only part small students who have control material numeracy in a way adequate .

Figure 1. Implementation of the Sunda Manda Campus Teaching 7 2024 Work Program Practice

During the session ongoing, response student to the game is very positive. Many students show high enthusiasm and active involvement. For example, when game ongoing, students seen each other support and collaborate in group they For reach objective from the sunda manda game. P statement the in line with findings from

research conducted by (Nurhikmah et al., 2023) which reveals that learning based on game Can increase interaction social among students and create environment learn more pleasant.

Capability Data Numeracy

After implementation game Sundanese manda, results test end show significant improvement in ability numeracy students. Average grade mathematics student increase to 85.52% of previous exercise. Improvement this is very encouraging and indicative that game Sundanese manda No only just method fun learning , but also effective in increase ability numeracy student (Haryanti et al., 2024) . Important For noted that improvement This No only happen in a way as it happens. For example, when student must count step in games, they in a way No direct train calculate and apply draft number count. The findings revealed by (Andriani et al., 2023) support statement that approach learning contextual capable repair understanding concept among student.

Following table showing percentage results test beginning and end ability numeracy students in learning mathematics reviewed from the bottom side This:

No	Description	Before		After	
		AKM Pre-Test	Pre-Math Grade	Post-AKM Test	Mathematics Value
1.	Average	50.33%	73.50%	67.33%	85.52%
2.	The highest score	70	77	95	100
3.	Lowest value	35	45	45	60
4.	Students who do not answer	1	-	1	-
5.	Number of students	24	25	24	25

Table 1. Percentage of Students' Numeracy Ability Results

The table above serve the right illustration about changes that occur in ability numeracy student after implementation Game. Assessment

Minimum Competency (AKM) is evaluation competence the basis for the purpose get used to participant educate think critical through questions contextual in life daily (Nurgiyanto et al., 2022) . Pre-test scores Assessment Minimum Competency (AKM) is evaluation beginning For measure minimum student competencies in numeracy in a way general in accordance standard national. While that, value pre-math is results test a special beginning evaluate mastery material mathematics taught in class. Through this data, we can stated presentation completeness student in ability numeracy in games Sundanese manda in the process of learning mathematics in elementary school grade V is as following.

No	Indicator	Completeness	Eligibility	Skills	Participation
1.	Students are able to carry out addition and subtraction operations based on the properties of whole numbers correctly.	72%	✓	✓	✓
2.	Students can understand and implement the concept of the Sundanese Manda game in the material on whole numbers.	92%	✓	✓	✓
3.	Students can interpret the results of the analysis to predict and make decisions.	80%	✓	✓	✓

Table 2. P recentage Completeness Student Formula count indicator completeness

$$= \frac{\text{Total student finished}}{\text{Total student in a way overall}} \times 100\%$$

Discussion

Study to improvement ability numeracy This show that game Sundanese manda succeed interesting attention students and improve

understanding in learning mathematics about addition and subtraction number round For student Class V of Kedungpucang Elementary School . Students No only tired play Sundanese manda with results throwing gacruk arrive at the square to how much, but game This writer modification with to hook game on material number count addition and subtraction. Draft game traditional can utilized as a supporting media in the learning process mathematics in the environment school (Merliza, 2021) . Through game traditional , students can to obtain education positive characters, such as values like Love peace, faith, care environment, love homeland, ethos work, spirit learning, creativity, courage, discipline, work equality, honesty and deliberation are very important For developed (Safitri et al., 2022) .

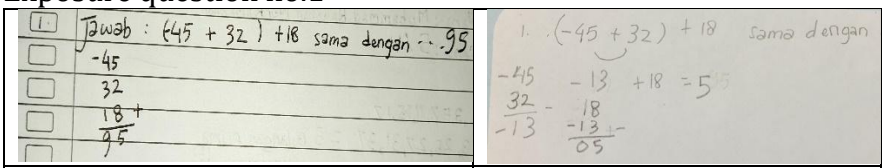
Learning interesting mathematics can realized through implementation game Sundanese Manda. In the activity this, 25 students class V is divided into five groups in a way sequentially. Every group take turns throw dice twice, add up the result, and jump to box game in accordance the numbers obtained. After that, students take card challenge or card Question. Card challenge consists of from picture grass (may) continue), stone (stop and work on) question number count in three minutes), and boom (immediately) stop and turn move).

Card question containing exercise mathematics, in particular number the amount that becomes ability numeracy For used in solution in life everyday , for example in stating the nominal value of goods economy and so on (Khoirudin et al., 2022) . Games in progress three round, and if happen series, round third become determinant. The first group reach the finish line with mark nine from two throws dice stated as winner. This method make learning more interactive and fun, so increase interest and understanding student.

Preparation of teaching materials is a obligations that must be fulfilled owned by each educators. This is because of making tool learning covers various aspect important role in the process of effective and quality teaching and learning (Titi Anjarini & Suyoto, 2022) . The following is discussion about data analysis results workmanship participant educate before and after use game traditional Sundanese manda proven can increase motivation and understanding student in learning.

Presentation and analysis of the results data workmanship subject on card question:

1. Exposure question no.1

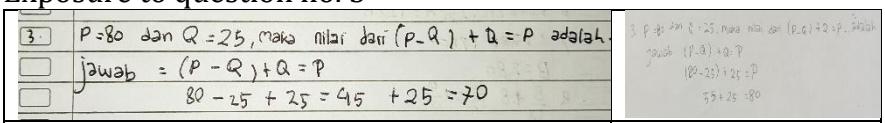


Preparation before using the Sunda Manda Game	Work after using the Sunda Manda Game

Figure 2. Sample student worksheet 1

Before use Sunda Manda game, MR misread the number -45 as 45, so the solution wrong Because Not yet understand draft number count. After follow games, MR trained distinguish and process number with Correct through activity summation and steps game, so that He capable finish question with appropriate without error similar.

2. Exposure to question no. 3

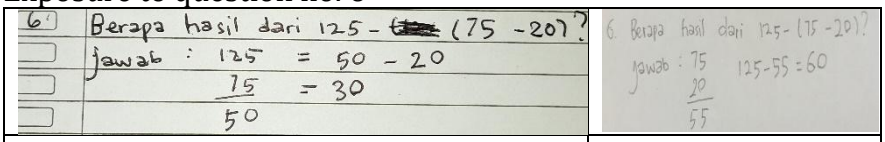


Preparation before using the Sunda Manda Game	Work after using the Sunda Manda Game

Figure 3. Sample worksheet 2

MR initially Already understand questions and formulas in questions number 3, but not enough thorough so it is wrong to add 45 + 25 to 70, not 80. The Sunda Manda game is direct train MR for thorough and focused through activity summation results throw dice to be rolled done with careful in every steps . After playing , MR is used to it inspect results summation before continue , so that He capable answer question with right and proper time . Concrete exercises This make MR's precision and focus in mathematics increase .

3. Exposure to question no. 6

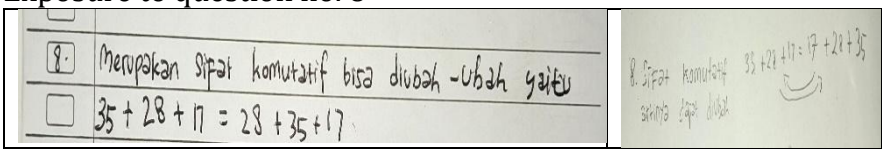


Preparation before using the Sunda Manda Game	Work after using the Sunda Manda Game

Figure 4. Sample student worksheet 3

Before use Sunda Manda game, MR not yet understand order operation and direct do subtraction without notice sign brackets, so that the answer is wrong. After follow Sundanese Manda game, MR trained follow step in a way sequentially in accordance rule game, so that He capable do question with correct and pay attention sign brackets moreover formerly.

4. Exposure to question no. 8



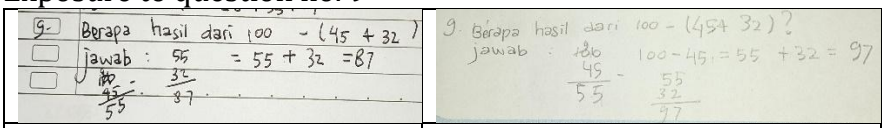
Preparation before using the Sunda Manda Game	Work after using the Sunda Manda Game

Figure 5. Sample student worksheet 4

Based on test data write and interview on the questions number 8, MR is able analyze and understand question story as well as

properties number count with okay . After use Sunda Manda game , MR can maintain understanding the Because game This train him For focus and thorough through activity breakdown problem in a way directly . Every step in game sue MR for understand instructions and apply draft number count , so that results Finally right and MR is not experience constraint .

5. Exposure to question no. 9



Preparation before using the Sunda Manda Game	Work after using the Sunda Manda Game

Figure 6. Sample student worksheet 5

Before use Sunda Manda game, MR not yet can finish question Because only depend on memorization without understand draft number count. After follow game, MR is used to to practice addition and application formula in a way directly on each step game, so that He start understand draft in a way comprehensive and capable finish question with step as well as correct formula. Activity interactive games also enhance MR's motivation and focus in Study mathematics, so that his understanding also increased significant. Research by (Umrah & Naim, 2024) state that method based on game make motivation Study more tall compared to method traditional . With Thus, the game Sundanese m you proven effective in increase skills numeracy student.

D. Conclusion

Based on results research, implementation Sunda Manda game proven in a way significant increase skills and abilities numeracy student class V school basic. Before use game this, the average value numeracy students on the pre-test recorded by 50.33%. After implemented, the average value of students increase to 67.33%, so that there is improvement by 17%. The Sunda Manda game is not

only support mastery draft numeracy, but also able to grow motivation as well as increase involvement student in learning Mathematics. Cultural integration local through Sundanese Manda game provides contribution specifically, namely create atmosphere learning that is fun, challenging, and inspiring, all at once practice skills motor as well as introduce values traditional to students. With Thus, the Sunda Manda game is effective in increase ability numeracy and enrichment experience Study student in a way overall. This method is also recommended For applied to the eyes another lesson because its interactive and comprehensive nature.

E. Acknowledgement

During the research and writing process article this, writer to pronounce accept deep love on support from all the party that has give guidance, direction and motivation:

1. Mrs. Rintis fortune Pangestika, M.Pd, Head of the Elementary School Teacher Training and Education Study Program, FKIP, Muhammadiyah University of Purworejo period until Now .
2. Ms. Nur Ngazizah, S.Si, M.Pd. , Supervisor I
3. Mrs. Titi Anjarini M.Pd, Supervisor II
4. Kedungpucang State Elementary School, as the research location and all parties involved.

Reference

Amreta, MY, Rahayu, ND, Nisa, D., & Lestari, P. (2025). *Improving Numeracy Skills through Contextual Learning Based on Traditional Engklek Games at UPT SDN Sokosari Tuban* . *5* , 456–464.

Andriani, S., Ardianti, SD, & Masfuah, S. (2023). Effectiveness of Outdoor Study Learning Model Assisted by Audiovisual Media to Improve Students' Learning Outcomes and Interests. *As-Sabiqun* , *5* (2), 619–631. https://doi.org/10.36088/assabiqun.v5i2.3171

Ayu, N., & Syukur, M. (2023). Implementation of Numeracy Literacy

Learning in the Teaching Campus Program to Improve the Learning Ability of Tanrara State Elementary School Students. *COMSERVA: Journal of Research and Community Service* , *2* (12), 3106–3121. https://doi.org/10.59141/comserva.v2i12.720

Casfian, F., Fadhillah, F., Septiaranny, JW, Nugraha, MA, & Fuadin, A. (2024). Effectiveness of Constructivism Theory-Based Learning Through E-Learning Media. *Pediaqu: Journal of Social and Humanitarian Education* , *3* (2), 636–648. http://repo.iain-tulungagung.ac.id/5510/5/BAB 2.pdf

Haryanti, JP, Hilyana, FS, & Kuryanto, MS (2024). Analysis of Collaboration Ability of Grade IV Students of Banyudono Elementary School in the Pancasila Profile Project of Traditional Games Festival. *Papeda Journal: Journal of Elementary Education Publication* , *6* (1), 1–12. https://doi.org/10.36232/jurnalpendidikandasar.v6i1.4725

Irwan, I., & Masrul, M. (2023). Analysis of Students' Numeracy Ability in Mathematics Learning in Elementary Schools. *Pendas: Scientific Journal of Elementary Education* , *8* (1), 4119–4128. https://doi.org/10.23969/jp.v8i1.7235

Khoirudin, M., Anjarini, T., & Suyoto. (2022). Analysis Of Students' Numeracy Ability In Solving Mathematics Problems On The Material Of Fraction Algorithmic Operations In Grade V Of Kebondalem State Elementary School. *DE_JOURNAL (Dharmas Education Journal)* , *3* (2), 190–199.

Communication, AND, In, ICT, & Junaedi, L. (2024). *Analysis Of The Impact Of The Implementation Of Information Technology With The National Council Of Teacher Of Mathematics (Nctm) Standards* . *8* (2).

Merliza, P. (2021). Ethnomathematics Study: Exploration of Mathematical Concepts in Traditional Games of Lampung Province. *Suska Journal of Mathematics Education* , *7* (1), 21–30. https://doi.org/10.24014/sjme.v7i1.12537

Millah, AS, Apriyani, Arobiah, D., Febriani, ES, & Ramdhani, E. (2023). Data Analysis in Classroom Action Research. *Journal of Student Creativity* , *1* (2), 140–153.

Ngazizah, N., Rahmawati, R., & Oktaviani, DL (2022). Development of Comic Media Based on Local Wisdom in Integrated Thematic Learning. *Science Tech: Journal of Science and Technology* , *8* (2), 147–154. https://doi.org/10.30738/st.vol8.no2.a13187

Nurgiyanto, TR, Rulviana, V., & Rohmanurmeta, FM (2022). Analysis of Students' Numeracy Ability in Solving Minimum Competency Assessment (AKM) Mathematics Questions at SDN 01 Klegen. *KID (Proceedings of the Basic Scientific Conference)* , *2* , 173–184.

Nurhayati, Asrin, & Dewi, NK (2022). Analysis of High Class Students' Numeracy Ability in Solving Problems on Geometry Material at SDN 1 Teniga. *Scientific Journal of the Educational Profession* , *7* (2b), 723–731. https://doi.org/10.29303/jipp.v7i2b.678

Nurhikmah, A., Madianti, HP, Azzahra, PA, & Marini, A. (2023). Development of Learning Media Through Educandy Games to Improve Students' Learning Character in Elementary Schools. *Journal of Education and Social Humanities* , *2* (3), 442.

Permatasari, KG (2021). PROBLEMATICS OF LEARNING MATHEMATICS IN ELEMENTARY SCHOOLS / MADRASAH IBTIDAIYAH. *Scientific Journal of Pedagogy* , *17* (1), 68–84.

Rachmawati, DA (2023). Analysis of Numeracy Literacy Ability of Grade V Students of SD Islam Darul Huda Genuk Semarang. In *UNISSULA Institutional Repository* . https://doi.org/10.37630/jpm.v13i2.946

Rahmat, AS, & Suparjana. (2023). Implementation of Digital Literacy Control Cards as Strengthening of Literacy-Oriented Pancasila Student Profiles in Elementary Schools. *Pancasila: Jurnal Keindonesiaan* , *3* (1), 22–32. https://doi.org/10.52738/pjk.v3i1.110

Safitri, T., Affandi, LH, & Zain, MI (2022). Character Education Values in Traditional Games of the Sasak Tribe in Babussalam Village, Gerung, West Lombok. *Scientific Journal of Pendas: Primary Education Journal* , *3* (1), 63–76. https://doi.org/10.29303/pendas.v3i1.1071

Safrudin, R., Zulfamanna, Kustati, M., & Sepriyanti, N. (2023). Qualitative Research. *Journal Of Social Science Research* , *3* (2),

1–15.

Salsinha, CN, Bete, H., Bone, D., Solo, PMMFV, Nifu, MM, Kasa, AR, & Timutang, M. (2024). Optimizing the Utilization of the Merdeka Mengajar Platform as a Means of Strengthening Teacher Competence in the Implementation of the Merdeka Curriculum. *Abdi Insani Journal* , *11* (1), 588–597. https://doi.org/10.29303/abdiinsani.v11i1.1290

Sri Annisa, I., & Mailani, E. (2023). Analysis of Factors Causing Students' Difficulties in Thematic Learning. *INNOVATIVE: Journal Of Social Science Research* , *3* (2), 6469–6477.

Sugiono, & Lestari, P. (2021). Communication Research Methods (Quantitative, Qualitative, Text Analysis, How to write articles for national and international journals). In *ALFABETA BANDUNG* . https://doi.org/10.14710/jdep.1.3.35-45

Sugiono, Noerdjanah, & Wahyu, A. (2020). Validity and Reliability Test of the SG Posture Evaluation Measurement Tool. *Journal of Physical Therapy* , *5* (1), 55–61. https://doi.org/10.37341/jkf.v5i1.167

Titi Anjarini, & Suyoto. (2022). Development of HOTS Integrated Project-Based Learning Tools in Elementary Schools. *Journal of Social Humanities and Education Research* , *1* (4), 69–80. https://doi.org/10.56444/soshumdik.v1i4.221

Umrah, A., & Naim, SN (2024). Implementation Of Teams Games Tournament (Tgt) Based On Wordwall Application To Improve Learning Interactivity In Grade Vii Students Of Smpn 4 Sungguminasa. *Didactics: Scientific Journal of PGSD FKIP Universitas Mandiri* , *10* (4), 331–342.

Widati, E., Marlina, E., Harminto, Y., & Triyono. (2025). Improving Reading, Writing, Numerical Skills Through Literacy And Numeracy Dolanan Park. *Jarlitbang* , *11* (1), 1–12.