



Improving Numeracy Skills for Teachers in South Buru Regency

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Received: February 27, 2026

Revised: March 23, 2026

Accepted: March 31, 2026

Published: March 31, 2026

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DOI: [10.29303/ujcs.v7i1.1645](https://doi.org/10.29303/ujcs.v7i1.1645)

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Abstract: This community service activity aims to improve the numeracy skills of teachers in South Buru Regency through Community-Based Research (CBR) training. This approach places teachers as partners who are actively involved in the entire activity process, from the planning stage, implementation, to program evaluation. The activity was attended by 80 teachers from elementary and junior high school levels. The training materials include understanding basic numeracy concepts, the difference between numeracy and calculation skills, strategies for integrating numeracy into learning, as well as the application of numeracy in various everyday life situations. The effectiveness of the activities was measured using pre-test and post-test instruments that covered six aspects of teachers' numeracy skills assessment. The training results showed a significant improvement in all measured aspects. The average pre-test scores ranged from 50–58, while the post-test results increased to 78–85. In addition to the improvement in evaluation results, observation results also showed an increase in participation, enthusiasm, confidence, and teachers' ability to discuss and simulate numeracy learning. Thus, this activity is effective in enhancing teachers' conceptual understanding and strengthening their ability to apply numeracy learning that is more contextual, innovative, and in accordance with the needs of students in the school environment.

Keywords: Numeracy, Teacher Training, Community-Based Research, Contextual Learning, Competence.

Introduction

Understanding student competence is important in helping teachers design effective strategies to support students with tasks that may be difficult for their grade level or academic abilities (Schneider et al., 2013; Ngware et al., 2018; Fenanlampir et al., 2021). A number of studies indicate that learning needs in the 21st century are no longer limited to mere mastery of concepts (Supasorn, 2015; Batlolona et al., 2024). Other competencies that are also required include the ability to apply concepts, higher-order thinking skills, and communication skills (Forgasz & Hall, 2019). These competencies are in line with the objectives of international assessments, particularly the Programme for International Student Assessment (PISA), which aims to assess an individual's ability to apply acquired skills in various real-life situations (OECD, 2019;

Nugraheni & Marsigit, 2021). PISA emphasizes the evaluation of the ability to solve contextual problems as well as an individual's readiness to face the workforce through the mastery of basic skills such as literacy and numeracy. Therefore, literacy and numeracy become the main components measured in PISA, including reading literacy, mathematics, and science.

The Minimum Competency Assessment (MCA) program implemented by the Indonesian government shows alignment with global attention to reading literacy and numeracy skills. MCA is used as an instrument to measure the abilities of Indonesian students in reading and arithmetic through problem-solving in various situations or contexts (Wijaya, 2018). Numeracy includes the ability to use mathematical concepts and skills in solving various problems encountered in daily life. In various fields of life, students are required to apply mathematics to real situations as part of developing their numeracy skills

How to Cite:

Palinussa, A. L., Ayal, C. S., & Triana, E. (2026). Improving Numeracy Skills for Teachers in South Buru Regency. *Unram Journal of Community Service*, 7(1), 134–140. <https://doi.org/10.29303/ujcs.v7i1.1645>

(Chiu, 2018). Numeracy skills enable students to face various problems, both those they have encountered and those they have not, by using mathematics as a basis for making decisions and finding solutions. This ability requires problem-solving skills, critical thinking, and the ability to understand the context at hand. Students who possess good numeracy skills tend to be able to understand information from a problem, filter relevant information, apply appropriate concepts to find solutions, be accustomed to identifying alternative solutions, and interpret the results obtained (Astuti et al., 2024).

In addition, Prince & Archer (2008) use the term academic numeracy practice to emphasize that mathematical and statistical practices are closely related to social aspects. Furthermore, this concept also considers elements of location and time as important parts (FitzSimons, 2006). Based on this, Galligan (2013) explains that academic numeracy skills can be understood as: the ability to apply mathematics in specific professional contexts as well as the ability to reflect on academic practices within that profession; critical awareness of the use of mathematics in various contexts and students' understanding of their own mathematical knowledge, which involves thinking and self-reflection skills (cognitive and metacognitive); confidence, which indicates that numeracy skills are also influenced by emotional or affective aspects. The findings indicate that conceptual errors mainly stem from reliance on memorized formulas without deeper conceptual understanding (Winarni, 2025). Some researchers argue that a person can be said to have numeracy skills if they are able to accurately determine the type of mathematical concept that needs to be used in a particular situation, understand the level of accuracy of its application, and assess whether the results obtained are meaningful in the context they are facing (Pickering et al., 2025).

Numeracy skills are closely related to their application in various situations, as each context may require the use of different mathematical skills (Rossetto & Wilkins, 2015). Study results show that the numeracy skills most frequently used and needed in the modern workplace as well as in daily activities are actually more related to higher-order thinking skills. These abilities include skills in interpreting information, reasoning, mathematizing situations, estimating outcomes, critically reflecting on quantitative data, and utilizing digital tools for calculation processes. Therefore, numeracy education for adults needs to give greater attention to the development of these competencies so that learning objectives can be optimally achieved (Hoogland, 2023). Various studies show that literacy skills have a relatively smaller influence on success compared to mathematical ability (Nortvedt, 2011).

Most research on this topic has been conducted using story problems as research instruments, and the results show a positive relationship between reading comprehension ability and the ability to solve story problems (Vilenius-tuohimaa et al., 2008). Another study also found a strong positive relationship between reading ability and numeracy among 8th-grade students in Norway. The results indicate that students who have good numeracy skills tend to also have good reading skills.

Therefore, there is a positive relationship between reading ability and the skill to solve arithmetic word problems that involve several steps of completion (Nortvedt, 2010). Mathematical skills need to receive greater attention, especially in the development of basic mathematical and numeracy abilities from an early age. To support the development of these skills in young children, parents and teachers need to understand the concept of early mathematical skills, the reasons for their importance, their impact on future academic achievement, as well as strategies that can be applied in building a strong mathematical foundation from childhood (Adam, 2024). Mathematical ability and basic numeracy play an important role in determining academic success at the next level of education. The impact is not only seen in mathematics achievement but also in other areas, including reading skills (Fuson et al., 2015). Nevertheless, this study focuses more on the influence of these skills on future mathematics learning. Several studies have emphasized the importance of mastering mathematics in the early stages of child development (Jordan & Kaplan, 2009; Aunio et al., 2014; Clerkin & Gilligan, 2018).

The learning experiences gained in early childhood serve as an important foundation for the development of more complex mathematical concepts as well as future career opportunities. In this regard, teachers and parents play a very important role in guiding and introducing basic mathematical concepts to children. Without a strong foundation and the implementation of appropriate learning strategies and interventions, students are likely to experience ongoing difficulties in learning mathematics up to the elementary school level. Early counting ability is an important predictor of academic achievement, therefore focusing on its teaching from the beginning of education is highly recommended. Young children's counting knowledge is also greatly influenced by counting practices at home (Chambrier et al., 2021). Numeracy is a concept used to describe the knowledge and skills required by individuals to meet mathematical demands both in personal life and social life, so that individuals can participate in society consciously, reflectively, and productively (Via et al., 2021).

The education system in the Philippines has begun emphasizing the development of numeracy skills since students are in grade 1 of elementary school. This step is considered important in building a strong mathematical foundation so that children and adults are able to understand and solve various mathematical problems that arise in real life (Andaya, 2025). Research conducted in the United States, Canada, and Australia shows that individuals with low literacy and numeracy levels tend to face more challenges in various aspects of life. They have a higher risk of experiencing unemployment, lower levels of education, less involvement in school activities, lower learning participation up to grade 12, obtaining lower college entry scores, as well as experiencing a less optimal transition from school to the next stage of education or life (Lantz et al., 1998; Considine & Zappalà, 2002; Dea & Mugridge, 2012). The development of numeracy skills is important because it can help students face and solve various everyday life problems. This skill improvement can be carried out through a learning process that is properly designed. One effort that teachers can make is to utilize cultural artifacts and local resources in the students' surroundings as part of the learning process. Teachers can design ethnomathematics-based learning approaches as a foundation in learning activities.

Method

This community service activity applies a Community-Based Research (CBR) approach, which is an approach that places partners, in this case teachers, as parties who are actively involved in the entire series of activities, from the planning stage, implementation, to program evaluation. CBR is a method that emphasizes collaboration among various related parties through active involvement in every stage, from formulating research problems, preparing data collection instruments, the analysis process, to disseminating the results of activities (Stevahn et al., 2016). The selection of this approach aims to ensure that the strengthening of teachers' numeracy competence is not carried out in a one-way manner, but is also adapted to the experiences, conditions, and real needs faced by teachers in South Buru Regency. This training activity was attended by 80 teachers from elementary to junior high schools in South Buru Regency.

The preparation stage begins with a coordination process between the implementation team of the Community Partnership Program and the partner regarding the activity implementation plan. At this stage, the number of participants who will attend the training is identified, the materials to be used are prepared, and the schedule for the activities is determined together with the school. Next, the

community service team developed training materials based on the actual needs of teachers, which include understanding numeracy concepts, strategies for integrating numeracy into thematic learning, as well as ways to strengthen the application of numeracy in students' daily lives. As an effort to determine the effectiveness of the activities, the team also prepared evaluation instruments in the form of a numeracy concept understanding test, which was conducted as a pre-test before the training and a post-test after the activity was completed.

At the implementation stage, the method used was training through lectures and interactive discussion approaches. The activity began with the administration of a pre-test attended by all participants to obtain initial information regarding teachers' understanding of numeracy concepts. Subsequently, the training was carried out through several sessions designed so that participants could engage in the activities actively, comfortably, and participatively. Through interactive lecture sessions, participants gain a broader understanding of the concept of numeracy, its differences from arithmetic skills, and its implementation in various everyday life situations. In addition, group discussion sessions also provide space for teachers to share teaching experiences, discuss numeracy learning practices, and identify various challenges faced in the classroom.

At the evaluation stage, the community service team conducted participatory observations during the training process to observe the level of participant engagement, enthusiasm, as well as patterns of interaction among teachers. Evaluation was also carried out at each stage of the activities to see the development of participants' abilities throughout the training. At the end of the activities, all participants took a post-test again so that the improvement in understanding of the material provided as well as the ability to conduct numeracy learning simulations could be understood more clearly.

The aspects measured in the activity use instruments developed by (Basri et al., 2025) as recorded in Figure 1, including understanding basic numeracy concepts, applying numeracy in thematic learning, the ability to distinguish between numeracy and arithmetic, as well as the ability to relate numeracy to everyday life contexts. In addition, the measurement also assesses participants' ability to analyze simple data presented in tables or graphs, as well as the ability to create numeracy-based questions in learning. These six aspects were chosen to provide a more comprehensive overview of participants' understanding of numeracy concepts, both in terms of basic knowledge and their ability to apply it in the learning process.

Result and Discussion

The training results indicate that teachers have a fairly good understanding of the concept of numeracy. Teachers are able to understand the difference between numeracy and counting skills. Numeracy is not only related to the ability to perform calculations, but also includes the ability to understand, interpret, and use numbers in various everyday life situations, including solving problems, analyzing information, and applying mathematical concepts in various contexts (Tout, 2020). On the other hand, arithmetic places more emphasis on mastering basic mathematical operations, such as addition, subtraction, multiplication, and division. Throughout the training, participants showed high involvement from the beginning to the end of the activity. The participants' enthusiasm was visible during the presentation of materials, discussions, as well as the Q&A session with the speakers. Teachers actively provided responses and asked questions related to the material being discussed. In addition, the positive responses of the participants can be seen from their enthusiasm in participating in discussions, practice sessions, and direct interactions with the presenters.

Most participants also revealed that previously they viewed numeracy only as the ability to calculate numbers. However, after attending the training, participants understood that numeracy has a broader scope, namely the ability to use numbers and quantitative information in various everyday life contexts (Ramdhani & Khadafie, 2026). To determine the level of training effectiveness, measurements were conducted through pre-tests and post-tests regarding the understanding of concepts and the application of numeracy. The evaluation results showed a fairly significant increase in teachers' understanding after participating in the training. A recap of the average pre-test and post-test scores of the participants is presented in Figure 1.

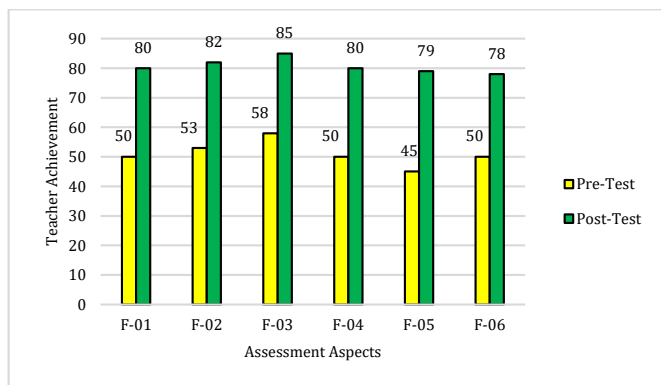


Figure 1. Teachers' understanding after completing the training

Based on the data in Figure 1, there is an increase in participants' abilities in all measured aspects after the training was conducted. The average pre-test scores ranged from 50–58, while the post-test results increased to a range of 78–85. The increase indicates that the training provided is effective in strengthening teachers' understanding of numeracy concepts comprehensively. In addition to quantitative data, observations during the activities also showed positive changes in participants, especially in terms of activeness and confidence to discuss strategies for implementing numeracy in learning. Teaching simulation activities become one of the sessions that provide meaningful experience because teachers not only practice applying numeracy material, but also exchange feedback and provide constructive feedback to each other.



Figure 2. Numeracy Training Materials

The success of the implementation of this Community Partnership Program is supported by several factors, including the availability of activity facilities from partners, the support and participation of teachers, the high enthusiasm of participants during the training, as well as policy support from the leadership of Pattimura University through the FKIP Mengabdi Program, which has been implemented since 2021 by Prof. Dr. I. H. Wenno, S.Pd., M.Pd.



Figure 3. Presentation of Numeracy Materials for Teachers

On the other hand, there were several obstacles encountered during the implementation of the activities, including difficulties in scheduling because the partner school is a driving school with a rather busy agenda. In addition, some teachers did not have adequate initial understanding related to literacy and numeracy, so the delivery of the material needed to start from the introduction of basic numeracy concepts. The findings in this community service activity are in line with the research of Maulyda et al., (2021), which shows that training that emphasizes hands-on practice and active participant engagement can enhance teachers' ability to integrate numeracy into the learning process. In addition, the implementation of the CBR approach in this training has also been proven to be able to create a more collaborative and meaningful learning environment (Rufiana et al., 2023). Historically, numeracy skills have often received less attention in adult education, especially when compared to reading and writing skills, which are given higher priority. Nevertheless, various evidence shows that numeracy skills need to receive greater attention. Strengthening basic arithmetic skills in adolescents and adults is very important because it plays a role in supporting individual well-being, both in the workplace and in everyday life in the 21st century. Thus, the implementation of training not only contributes to improving teachers' conceptual understanding but also strengthens their awareness and commitment in applying numeracy learning that is more contextual and aligned with the needs of students in the classroom.

Conclusion

Community service activities through training to improve numeracy skills for teachers in South Buru Regency successfully enhanced teachers' understanding and competence regarding numeracy concepts as well as their application in the learning process. The implementation of training with a Community-Based

Research (CBR) approach provides teachers the opportunity to actively participate in every stage of activities, making the learning process more participatory and aligned with real needs in the field. The evaluation results showed an improvement in teachers' abilities in all measured aspects, indicated by the increase in the average pre-test scores from the range of 50–58 to 78–85 in the post-test. In addition to the improvement in cognitive aspects, this activity also had a positive impact on teachers' activeness, enthusiasm, and confidence in discussing and implementing numeracy learning strategies. Thus, this training has proven effective in strengthening teachers' conceptual understanding while also enhancing their ability to develop numeracy learning that is more contextual, innovative, and relevant to the needs of students.

The implication of this activity shows that improving teachers' numeracy competence can be a strategic step in strengthening the quality of learning in schools. Teachers who have a good understanding of numeracy will be better able to design learning that connects mathematical concepts with the real-life context of students, making the learning process more meaningful. In addition, the results of this activity can serve as a basis for the development of continuous training programs involving collaboration between universities, schools, and education policymakers to support the improvement of numeracy learning quality more broadly and sustainably.

References

- Adam, H. B. (2024). The impact of early math and numeracy skills on academic achievement in elementary school. *International Journal of Advanced Multidisciplinary Studies*, 4(4), 193–203.
- Andaya, K. O. (2025). Numeracy skills of grade 1 learners. *International Multidisciplinary Journal of Research for Innovation, Sustainability and Excellence*, 2(4), 340–352. <https://doi.org/10.5281/zenodo.15259709>
- Astuti, E. P., Wijaya, A., & Hanum, F. (2024). Characteristics of junior high school teachers' beliefs in developing students' numeracy skills through ethnomathematics-based numeracy learning. *Journal of Pedagogical Research*, 8(1), 244–268.
- Aunio, P., Heiskari, P., & Vuorio, J. (2014). The development of early numeracy skills in kindergarten in low-, average- and high performance groups. *Journal of Early Childhood Research*, 13(1), 1–14. <https://doi.org/10.1177/1476718X14538722>
- Basri, S., Restani, A., Thayyib, S., & Habibah, S. (2025). Peningkatan kemampuan numerasi guru di

- sekolah dasar kompleks Kaluku Bodoa Kecamatan Tallo Kota Makassar. *KARYA: Journal of Educational Community Service*, 4(1), 1–6.
- Batlolona, J. R., Jamaludin, J., P. Dulhasyim, A. B., & Silahooy, S. (2024). Misconceptions of physics students on the concept of equilibrium of rigid bodies: a case study of keku culture. *Jurnal Pendidikan MIPA*, 25(1), 87–102. <https://doi.org/10.23960/jpmipa/v25i1.pp87-102>
- Chambrier, D., Baye, A., Tinnes-vigne, M., Tazouti, Y., Vlassis, J., Poncelet, D., Giauque, N., Fagnant, A., Luxembourger, C., Auquièrre, A., Kerger, S., & Dierendonck, C. (2021). Enhancing children's numerical skills through a play-based intervention at kindergarten and at home: a quasi-experimental study. *Early Childhood Research Quarterly*, 54, 164–178. <https://doi.org/10.1016/j.ecresq.2020.09.003>
- Chiu, M. (2018). Effects of early numeracy activities on mathematics achievement and affect: parental value and child gender conditions and socioeconomic status mediation. *EURASIA Journal of Mathematics Science and Technology Education*, 14(12), 1–16. <https://doi.org/10.29333/ejmste/97191>
- Clerkin, A., & Gilligan, K. (2018). Pre-school numeracy play as a predictor of children's attitudes towards mathematics at age 10. *Journal of Early Childhood Research*, 16(3), 1–16. <https://doi.org/10.1177/1476718X18762238>
- Considine, G., & Zappalà, G. (2002). The influence of social and economic disadvantage in the academic performance of school students in Australia. *Journal of Sociology*, 38(2), 129–148.
- Dea, J. A. O., & Mugridge, A. C. (2012). Nutritional quality of breakfast and physical activity independently predict the literacy and numeracy scores of children after adjusting for socioeconomic status. *Health Education Research*, 27(6), 975–985. <https://doi.org/10.1093/her/cys069>
- Fenanlampir, Alberthus, Batlolona, J. R., & Imelda, I. (2019). The struggle of Indonesian students in the context of TIMSS and Pisa has not ended. *International Journal of Civil Engineering and Technology*, 10(2), 393–406.
- Fenanlampir, Albertus, Leasa, M., & Batlolona, J. R. (2021). The development of homogeneity psycho cognition learning strategy in physical education learning. *International Journal of Evaluation and Research in Education*, 10(3), 1047–1059. <https://doi.org/10.11591/IJERE.V10I3.21713>
- Forgasz, H. J., & Hall, J. (2019). Learning about numeracy: the impact of a compulsory unit on pre-service teachers' understandings and beliefs. *Australian Journal of Teacher Education*, 44(2). <https://doi.org/10.14221/ajte.2018v44n2.2>
- Fuson, K. C., Clements, D. H., & Sarama, J. (2015). Making early math education work for all children. *Phi Delta Kappan*, 97(3), 63–68. <https://doi.org/10.1177/0031721715614831>
- Galligan, L. (2013). A systematic approach to embedding academic numeracy at university. *Higher Education Research & Development*, 32(5), 734–747. <https://doi.org/10.1080/07294360.2013.777037>
- Hoogland, K. (2023). The changing nature of basic skills in numeracy. *Frontiers in Communication*, 8, 1–4. <https://doi.org/10.3389/feduc.2023.1293754>
- Jordan, N. C., & Kaplan, D. (2009). Early math matters: kindergarten number competence and later mathematics outcomes. *Developmental Psychology*, 45(3), 850–867. <https://doi.org/10.1037/a0014939>
- Lantz, P. M., House, J. S., Lepkowski, J. M., Williams, D. R., Mero, R. P., & Chen, J. (1998). Socioeconomic factors, health behaviors, and mortality prospective study of US adults. *JAMA*, 279(21), 1703–1708. <https://doi.org/10.1001/jama.279.21.1703>
- Mauliyda, M. A., Affandi, L. H., Nur, A., Rosyidah, K., Oktavianti, I., Erfan, M., & Hamdani, I. (2021). Profil wawasan guru sekolah dasar dalam pembelajaran numerasi berbasis level. *Jurnal Pembelajaran Matematika Inovatif*, 4(3), 619–630. <https://doi.org/10.22460/jpmi.v4i3.619-630>
- Ngware, M. W., Hungi, N., & Mutisya, M. (2018). Assessing learning: How can classroom-based teachers assess students' competencies in numeracy? *Assessment in Education: Principles, Policy & Practice*, 26(2), 1–23. <https://doi.org/10.1080/0969594X.2018.1503156>
- Nortvedt, G. A. (2010). Understanding and solving multistep arithmetic word problems. *Nordic Studies in Mathematics Education*, 15, 23–50. <https://doi.org/10.7146/nomad.v15i3.148279>
- Nortvedt, G. A. (2011). The Journal of Mathematical Behavior Coping strategies applied to comprehend multistep arithmetic word problems by students with above-average numeracy skills and below-average reading skills. *Journal of Mathematical Behavior*, 30(3), 255–269. <https://doi.org/10.1016/j.jmathb.2011.04.003>
- Nugraheni, L. P., & Marsigit, M. (2021). Realistic mathematics education: An approach to improve problem solving ability in primary school. *Journal of Education and Learning (EduLearn)*, 15(4), 511–518. <https://doi.org/10.11591/edulearn.v15i4.19354>

- OECD. (2019). PISA 2018 Assessment and Analytical Framework. In *OECD Publishing*.
- Pickering, J., Attridge, N., Inglis, M., & Morsanyi, K. (2025). Numeracy, logical reasoning and real-world decision making. *Research in Mathematics Education*, 1-17. <https://doi.org/10.1080/14794802.2025.2472675>
- Prince, R., & Archer, A. (2008). A new literacies approach to academic numeracy practices in higher education problematising terms. *Literacy and Numeracy Studies*, 16(1), 63-76. <https://doi.org/10.5130/lms.v16i1.1948>
- Ramdhani, Y., & Khadafie, M. (2026). Innovation in the Use of Interactive Media to Increase Students Interest and Numeracy Literacy Ability. *Golden Ratio of Mapping Idea and Literature Format*, 6(2), 1416-1427. <https://doi.org/10.52970/grmilf.v6i2.1755>
- Rossetto, L. C., & Wilkins, L. (2015). Parallel universes or Venn intersections?: Numeracy and literacy teaching and learning. *Journal of Academic Language & Learning*, 9(2), 79-90.
- Rufiana, I. S., Harianto, A., & Arifin, S. (2023). Penguatan kompetensi pedagogik guru madrasah pada kurikulum merdeka: bimtek pelatihan tindak lanjut hasil akmi tingkat madrasah. *Jurnal GEMBIRA (Pengabdian Kepada Masyarakat)*, 1(1), 294-303.
- Schneider, M. C., Huff, K. L., Egan, K. L., Gaines, L., & Ferrara, S. (2013). Relationships Among Item Cognitive Complexity, Contextual Demands, and Item Difficulty: Implications for Achievement-Level Descriptors. *Educational Assessment*, 18(2), 99-121. <https://doi.org/10.1080/10627197.2013.789296>
- Stevahn, L., Anderson, J., & Hasart, T. (2016). Community-based research (CBR) in the education doctorate: lessons learned and promising practices. *International Journal of Doctoral Studies*, 11, 441-465. <https://doi.org/10.28945/3620>
- Supasorn, S. (2015). Grade 12 students' conceptual understanding and mental models of galvanic cells before and after learning by using small-scale experiments in conjunction with a model kit. *Chemistry Education Research and Practice*, 16(2), 393-407. <https://doi.org/10.1039/c4rp00247d>
- Tout, D. (2020). Evolution of adult numeracy from quantitative literacy to numeracy: Lessons learned from international assessments. *International Review of Education*, 66(2), 183-209. <https://doi.org/10.1007/s11159-020-09831-4>
- Via, Y., Tatag, S., Siswono, Y. E., Java, W., Abadi, A., Planning, H. E., & Board, C. (2021). The effect of mathematics self-efficacy on numeracy skills of prospective elementary school teachers. *Cypriot Journal of Educational Sciences*, 16(6), 3405-3417.
- Vilenius-tuohimaa, P. M., Aunola, K., & Nurmi, J. (2008). The association between mathematical word problems and reading. *Educational Psychology*, 28(4), 409-426. <https://doi.org/10.1080/01443410701708228>
- Wijaya, A. (2018). Opportunity-to-learn to solve context-based mathematics tasks and students' performance in solving these tasks - lessons from indonesia. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(10), 1-20.
- Winarni, S. (2025). Numeracy skill development in prospective mathematics teachers: Challenges and opportunities in real-world contexts. *Journal on Mathematics Education*, 16(1), 91-110. <https://doi.org/10.22342/jme.v16i1.pp91-110>