

Socialization of Computational Thinking to Middle School Mathematics Teachers in Solving Ethnomathematics Problems

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Abstract

One of the core competencies that is highly needed in today's digital era is computational thinking skills. The ability to transform complex problems into algorithmic representations, design solutions, and systematically explain the problem-solving process is key to success in facing the challenges of 21st-century education. However, various research findings indicate that students' mastery of computational thinking is still not optimal. Therefore, students' ability to solve problems in mathematics learning by integrating acquired information needs to be improved to prevent low computational thinking skills. One way to achieve this is by using local contexts to enhance students' mathematical literacy. Middle school mathematics teachers in Banjarmasin City have never received information about computational thinking, which is highly beneficial in solving mathematical problems. In line with this, this Community Service (PkM) activity aims to improve teachers' understanding of the importance of computational thinking in mathematical problem-solving, particularly in implementing the Merdeka Curriculum. The implementation method of this PkM follows a Participatory Action Research (PAR) approach, conducted both offline and online. The offline activities consist of discussions and socialization, while the mentoring activities will be conducted online until the final products are developed collaboratively. The materials covered in this PkM activity include: (1) understanding computational thinking in mathematical problems; (2) developing ethnomathematical problems; (3) applying computational thinking in ethnomathematical problems; and (4) producing ethnomathematical problems related to wetland environments that can foster students' computational thinking skills. The expected outcomes of this PkM activity are: (1) the publication of PkM activities in online media and YouTube; and (2) the development of ethnomathematical problems in wetland environments and their solutions using computational thinking stages that meet feasibility criteria.

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INTRODUCTION

The rapid technological growth in the 21st century has brought significant changes in various aspects of life, including the need for the education sector to continuously adapt and utilize various technological innovations to enhance the effectiveness of the learning process ([Putriani & Hudaiah, 2021](#)). Computational thinking has become one of the core competencies that must be mastered in the digital era, especially in education. Computational thinking is the ability to formulate problems, design logical and systematic problem-solving steps (algorithms), and evaluate the obtained solutions ([Kamil et al., 2021](#)). Several developed countries, including the United States, Australia, the United Kingdom, the Netherlands, and Mexico, have integrated computational thinking (CT) into their education curricula ([Wing, 2006](#)).

As an innovation in the field of education, the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) has launched the "Merdeka Belajar" (Independent Learning) program to produce high-quality and competent human resources. *Merdeka Belajar* promotes an authentic assessment approach that integrates 6C-based assessment (Computational Thinking, Critical Thinking, Creativity, Collaboration, Communication, and Empathy) with various other forms of evaluation, such as performance, projects, products, attitudes, written tests, and portfolios. This approach ensures that assessment is not only focused on mastering hard skills (knowledge and technical abilities) but also the soft skills (attitude, personality, and other aspects) of students holistically ([Vhalery et al., 2022](#)).

Computational thinking is not merely about applying concepts to problem-solving; it emphasizes a systematic and logical thinking process in finding solutions ([Masfingatun et al., 2018](#)). Computational thinking has become a fundamental necessity for individuals in the digital era. This skill helps students solve everyday problems and equips them with relevant competencies to meet the educational demands of the 21st century ([Nouri et al., 2020](#)).

However, various research findings indicate that students' computational thinking skills are still not optimal. Many students still struggle to answer HOTS (Higher Order Thinking Skills) questions related to real-life contexts. As a result, learning often focuses only on basic understanding ([Kamil et al., 2021](#)), and students' computational thinking abilities remain low, especially evident in their difficulties in finding appropriate solutions to mathematical problems ([Azizah et al., 2022](#)). Based on this, it is necessary to enhance students' computational thinking skills in mathematics learning, given their current difficulties in integrating information to solve problems.

PISA 2022 measures students' ability to use computational thinking to solve problems ([Zahid, 2020](#)). It defines computational thinking as a problem-solving approach involving abstraction, decomposition, algorithmic thinking, and pattern recognition ([Mustafa, 2023](#)). In reality, teaching practices in Indonesia often emphasize memorization of algorithms in mathematical problem-solving, which hinders the development of students' computational thinking skills ([Mustafa, 2023](#)).

Ethnomathematics, which connects mathematical concepts with local cultural contexts, offers great potential as a literacy tool for students, fostering a love for culture and homeland. Ethnomathematics is closely related to the mathematical thinking of a society in connection with its culture and can be integrated into the school curriculum ([Lidinillah et al., 2022](#)). According to Mahdiansyah dan Rahmawati (2014), local-context mathematical literacy effectively addresses students' low mathematical literacy skills ([Fajriah et al., 2022](#)). Computational thinking can be integrated with current literacy practices to enhance students' ability to solve computational problems. Conversely,

students' literacy skills can be improved by developing computational thinking skills ([Anggrasari, 2021](#)). Mathematics learning incorporating ethnomathematics allows for abstraction, idealization, and generalization of mathematical concepts ([Widada et al., 2018](#)).

Each region has unique local wisdom that distinguishes it from other areas and serves as its unique identity. The importance of local wisdom is increasingly evident amid globalization, which threatens the preservation of local cultures. A lack of public knowledge about local culture can lead to a diminished sense of belonging and love for their region, ultimately eroding national character. Local wisdom can be preserved in various ways by introducing culture to a broader audience ([Fajriah et al., 2023](#)). South Kalimantan, with a majority Muslim Banjar population, possesses rich cultural diversity reflected in various manifestations, including local cuisine with distinct flavors, traditional handicrafts such as Sasirangan fabric, and unique traditional architecture (such as traditional houses and places of worship) ([Fajriah et al., 2022](#)). As a learning approach, ethnomathematics not only teaches mathematical concepts but also fosters an appreciation for cultural diversity and the values embedded within it. Therefore, teachers need to develop ethnomathematics-based problems, guiding students to apply computational thinking skills in solving them. Although in 2023, the Community Service Team (PkM) from the Mathematics Education Program, ULM, conducted mentoring on the development of ethnomathematics-based problems related to wetland environments, middle school mathematics teachers in Banjarmasin City, through MGMP as a partner, have not yet received any information on computational thinking.

The MGMP (Mathematics Teacher Working Group) for middle schools in Banjarmasin City is a forum that facilitates mathematics teachers at the middle school level in Banjarmasin City. It consists of 136 mathematics teachers and aims to develop professional work competencies. The professionalism referred to includes practicing the values of Pancasila, fostering a spirit of mutual cooperation, utilizing digital technology, and fostering innovation and creativity, particularly in solving mathematical problems. The concept of computational thinking is still relatively new in mathematical problem-solving.

Therefore, it is understandable that most mathematics teachers have not yet fully mastered this concept and require time and practice to adapt it to their teaching practices. Computational thinking, as a form of literacy, involves mastering cognitive skills, shaping attitudes, and a deep understanding of computational thinking processes. Therefore, its teaching must be adjusted according to students' developmental stages. To effectively teach computational thinking, a teacher must be a role model for their students. This means that teachers must master the concept of computational thinking and be able to apply it in various situations. To address this issue, the PkM (Community Service) team discussed with the head of the MGMP Mathematics group in Banjarmasin City to identify the challenges faced and align their perspectives on the issue. This discussion was then followed up with the signing of a cooperation agreement outlining joint actions to address these challenges.

Based on the discussion results, the main challenges for teachers were time constraints and a lack of adequate guidance. A structured and continuous mentoring program, including a series of staged socialization activities on the concepts and applications of computational thinking, can effectively address these challenges.

Several issues were identified from the situation analysis, including: (a) Teachers have never attended training on computational thinking in problem-solving, so they have never applied it to students in mathematical problem-solving, and (b) students tend to memorize mathematical formulas without understanding the basic concepts, which often hinders

their ability to solve problem-based questions. This learning approach is less effective in developing computational thinking skills for tackling complex mathematical challenges.

The solutions offered in this community service activity include: (a) Training and mentoring services to understand and apply computational thinking steps in solving mathematical problems, particularly those related to local cultural contexts. Problem-solving will be conducted in various domains, including: Everyday problem-solving, Literacy, Data analysis, Modeling, and Simulation. Problem-solving in everyday life will be trained using Bebras questions. Bebras is an international community promoting computational thinking (CT) among teachers, students, and the general public. Each year, Bebras organizes a competition called the Bebras Challenge (*Tantangan Bebras*). In this section, participants will be given exercises to enhance their understanding of computational thinking. Next, participants will be reintroduced to ethnomathematical problems in wetland environments. They will be encouraged to develop ethnomathematical problems in this context and subsequently solve them using computational thinking; and (b) product—The program's outcome will be ethnomathematical problems whose solutions are developed using computational thinking steps.

The expected outputs of the PkM program include an article submitted to a nationally accredited journal or national proceedings. Additionally, if the participants' produced work is deemed "eligible" after evaluation, it will be proposed for Intellectual Property Rights (HKI). Furthermore, the implementation of the PkM activities will also be published in online media and on YouTube.

METHODS

The implementation method of this PkM program utilizes the Participatory Action Research (PAR) approach, which directly involves the community in identifying problems, seeking solutions, and generating new knowledge beneficial to society. This approach serves as a means to provide teachers with an understanding of the stages of computational thinking in solving mathematical problems so that they can later apply it in the learning process. The subjects of this PkM activity are middle school mathematics teachers who are members of the MGMP in Banjarmasin City. Meanwhile, the object of this PkM program is a set of ethnomathematical problems related to wetland environments that are deemed feasible, meaning they align with the ethnomathematical context of wetland environments and incorporate all stages of computational thinking (decomposition, pattern recognition, abstraction, and algorithmic thinking).

This PkM program collaborates with the Mathematics Education Department of FKIP ULM and the MGMP Mathematics of Banjarmasin City. The activities are conducted offline and online, and the implementation team includes five lecturers and two students.

The data collection methods for this PkM program involve three approaches: observation, interviews, and literature review. (1) Observations are conducted in several middle schools in Banjarmasin to examine how students solve non-routine mathematical problems in their learning process. Additionally, (2) interviews are carried out with middle school teachers in Banjarmasin City to assess their understanding of computational thinking in mathematical problem-solving and its relation to local culture; (3) furthermore, a literature review is conducted to gather relevant sources on computational thinking and ethnomathematics.

The implementation stages of the PkM program begin in this following stanges: (1) socialization on August 14, 2024, conducted offline, where the PkM team delivers presentations on computational thinking, mathematical problems, and ethnomathematical problems in wetland environments, followed by a question and answer session; (2) On the

same day (August 14, 2024), a training session is held, where participants engage in group exercises to identify computational thinking stages in mathematical problems; (3) This is followed by a technology application session, where participants apply computational thinking to solve ethnomathematical problems in groups; (4) from August 15 to 19, 2024, the mentoring and evaluation phase takes place, with the PkM team providing online mentoring to participant groups. Participants develop ethnomathematical problems related to wetland environments and propose solutions, which are then assessed based on predefined criteria. Problems are categorized as (a) feasible if they align with ethnomathematical contexts in wetland environments, incorporate all computational thinking stages, and are logically structured. They are deemed (b) moderately feasible if they include at least three computational thinking stages and are logically structured. Problems are considered (c) not feasible if they incorporate only up to two computational thinking stages and lack logical structure. The PkM program is considered successful if the produced work meets the "Feasible" criteria; and (5) program sustainability (Tentatively carried out by our partner), which MGMP Mathematics Banjarmasin tentatively leads, the initiative is expected to continue beyond the PkM activities. The participating MGMP mathematics teachers will disseminate their acquired knowledge to colleagues who did not participate in the program. Moreover, they are encouraged to integrate computational thinking into their classroom teaching, ensuring a broader impact on students' mathematical learning.

RESULT AND DISCUSSION

The PkM activity is a tangible realization of the Tri Dharma of Higher Education, which is consistently organized by the Mathematics Education Study Program, FKIP ULM, every year. In 2024, the selected issue remains related to ethnomathematical problems in wetland environments, similar to the 2023 PkM program. However, in 2024, problem-solving will incorporate the stages of computational thinking, a concept that middle school mathematics teachers in Banjarmasin City, through MGMP as a partner, have never been introduced to before. Therefore, the PkM team initiated the "Socialization of Computational Thinking and Ethnomathematical Problem Solving for MGMP Middle School Mathematics Teachers in Banjarmasin City."

The offline PkM activity occurred on Wednesday, August 14, 2024, at the Mathematics Science Computer Laboratory, Mathematics Education Study Program, FKIP ULM. As shown in Figure 1, 22 mathematics teachers from MGMP Mathematics SMP Banjarmasin City attended the event.



Figure 1 Group photo of the PkM activity

This activity was opened by Dr. Chairil Faif Pasani, M.Si., representing the PkM Team Leader, who stated that the purpose of this event was to introduce and help teachers understand the importance of computational thinking skills in solving ethnomathematical problems—one of the assessment components in the Merdeka Curriculum. Additionally, this activity served as a platform to disseminate research findings from the 2024 ULM

Mandatory Research Grant Program for Lecturers (PDWM), titled "Characteristics of Creative Thinking in Prospective Mathematics Teachers When Proposing Ethnomathematical Problems." This research is led by Dr. Elli Kusumawati, S.Pd., M.Pd., and other community service team members. In his speech, Haji Ahmad, S.Pd., M.Pd., the Chairman of MGMP Mathematics SMP Banjarmasin City, expressed high appreciation for the PkM activity organized by the Mathematics Education Study Program, FKIP ULM. He emphasized the importance of this collaboration in developing mathematics teachers' competence, particularly in integrating computational thinking with the cultural context of South Kalimantan. He also hoped that this partnership would continue to improve the quality of mathematics education at the middle school level. Dr. Hj. Noor Fajriah, M.Si., Coordinator of the Mathematics Education Study Program, FKIP ULM, officially opened the event. In her opening remarks, she stated that this PkM initiative is a tangible contribution of the program in enhancing education quality, particularly in mathematics. She also emphasized the significance of this activity as part of the efforts to achieve the Key Performance Indicators (IKU) of Lambung Mangkurat University.

This PkM activity covers various materials, including Dr. Chairil Faif Pasani, M.Si's ethnomathematics approach to mathematics learning. He explained that integrating mathematical concepts with local cultural values through the ethnomathematics approach can be an effective alternative to increasing students' learning motivation and preserving the nation's cultural heritage, as shown in Figure 2.



Figure 2 Presentation of the first material

Yuni Suryaningsih, S.Pd., M.Pd., presented the next material on computational thinking. In her presentation, she explained that by presenting problems specifically designed to train computational thinking skills, students can develop logical and systematic thinking abilities and choose appropriate problem-solving strategies, as shown in Figure 3.



Figure 3 Presentation of the second material

The final session featured a presentation by Dr. Hj. Noor Fajriah, M.Si., discussing the application of computational thinking to solve ethnomathematical problems. She explained that computational thinking is not merely the application of concepts but rather

emphasizes a systematic approach to problem-solving. Therefore, this skill is crucial for 21st-century students facing the complexities of today's challenges. The activity concluded with a Q&A session, guided by the PkM team, to deepen participants' understanding, as shown in Figure 4.



Figure 4 Presentation of the third material

The participants listened attentively to the material presented, as they had never attended a similar event. The hope is that PkM activities like this can continue as a form of ongoing collaboration, said the Chairman of MGMP Kota Banjarmasin, Haji Ahmad, M.Pd. The discussion during the socialization session went smoothly, as evidenced by the high enthusiasm of participants asking questions, as shown in Figure 5.



Figure 5 The enthusiasm of PkM activity participants

The event concluded with the PkM team from the Mathematics Education Study Program presenting souvenirs to the MGMP Mathematics of SMP Kota Banjarmasin. The next PkM activity was conducted online. The PkM team guided participant groups via WhatsApp/email to apply computational thinking skills in systematically solving ethnomathematical problems, leading to innovative products. The PkM team evaluated the participants' products to assess the program's success. The activity was considered successful if the products met the feasibility criteria.

Four groups were formed from the 22 PkM participants. The products produced by these groups met the feasibility criteria, as the solutions used to solve ethnomathematical problems incorporated all stages of computational thinking: abstraction, decomposition, algorithms, and patterns, as shown in Figure 6.

Figure 6 shows that one of the groups used the ethnomathematical context of buying and selling traditional Banjar foods, such as Soto Banjar and Ketupat Kandangan, to solve a system of linear equations in two variables (SPLDV). This context is expected to minimize errors, particularly in understanding the problem conceptually and writing the final answer when solving SPLDV problems ([Islamiyah et al., 2018](#); [Maarif et al., 2020](#)).

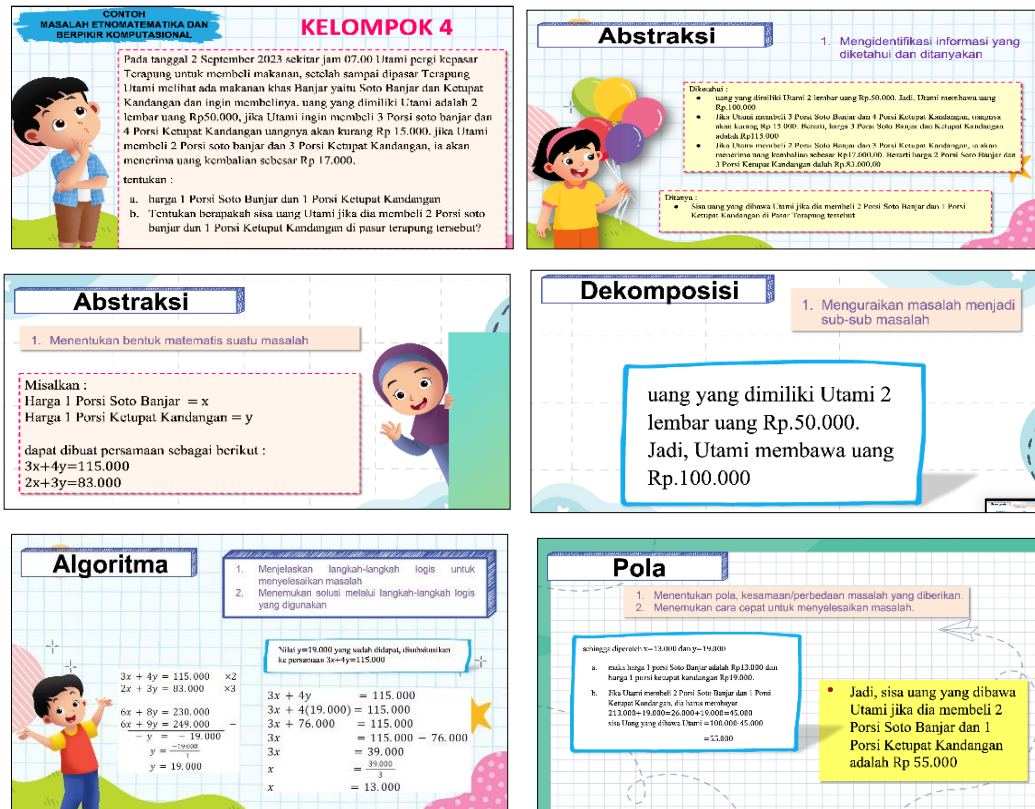


Figure 6 The example of solving ethnomathematical problems using computational thinking

The products created by the participants indicate that the PkM activity has met its success indicators, as all participant-produced outputs met the feasibility criteria. This means the teachers understand how to solve mathematical problems using computational thinking stages. Many mathematical problems can be solved using computational thinking stages, including number patterns (Batul et al., 2022; Budiarti et al., 2022; Hapsari & Masduki, 2024), aljabar (Cahdriyana & Richardo, 2020), and opportunity (Darmawan & Wahyuni, 2024).

The results of this community service activity also support the idea that participants can correctly distinguish the stages of computational thinking, ultimately enhancing students' problem-solving skills. This aligns with studies by Rosadi et al. (2020) and Suktiningsih et al. (2021), which suggest that problems solved using computational thinking methods lead to faster, better, and more optimal solutions.

The outcomes of this PkM activity include: (a) A publication in an online media outlet, available at <http://www.beritabanjarmasin.com/2024/08/prodi-matematika-fkip-ulum.html>; (b) A video of the PkM activity uploaded on the YouTube account of Mathematics Education FKIP ULM, accessible at <https://www.youtube.com/live/wzIVreFvrGI?si=79Hrm8fcoUHAC2Xq>; and (c) The final product of the PkM activity, which consists of ethnomathematical problems in a wetland environment along with solutions using computational thinking stages that meet feasibility criteria, available at <https://bit.ly/ProdukPesertaPkM2024>. Furthermore, products that meet the feasibility criteria will be submitted for copyright registration with the Directorate General of Intellectual Property (DJKI) to maximize their benefits, particularly for the team of teachers who created them.

CONCLUSION

Although the PkM activity faced challenges, particularly in coordinating schedules between the PkM team and the participating schools, it successfully achieved its objectives. The main goals of this community service initiative were: (1) ensuring that participants understood how to solve mathematical problems using computational thinking stages, as indicated by the feasibility of the products they created; (2) enabling teachers to utilize the PkM products in their school teaching; and (3) strengthening the ongoing collaboration with the MGMP Mathematics of SMP Kota Banjarmasin.

This PkM activity significantly enhanced teachers' ability to develop ethnomathematical problems within a wetland environment. It also improved their skills in solving mathematical problems using computational thinking stages, further supporting their professional development and effectiveness in the classroom.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS STATEMENT

Conceptualization, EK and NF; methodology, YS; formal analysis, IZ; writing—preparation of the original draft, CFP; and editing, MSM and TK. All authors discussed the results and contributed to the final manuscript.

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REFERENCES

- Anggrasari, L. A. (2021). Model pembelajaran computational thinking sebagai inovasi pembelajaran sekolah dasar pascapandemi covid-19. *Prosiding Seminar Nasional Sensasada*, 1, 109–114.
- Azizah, N. I., Roza, Y., & Maimunah, M. (2022). Computational thinking process of high school students in solving sequences and series problems. *Jurnal Analisa*, 8(1), 21–35.
- Batul, F. A., Pambudi, D. S., & Prihandoko, A. C. (2022). Pengembangan perangkat pembelajaran model sscs dengan pendekatan rme dan pengaruhnya terhadap kemampuan berpikir komputasional. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 11(2), 1282–1296.
- Budiarti, H., Wibowo, T., & Nugraheni, P. (2022). Analisis berpikir komputasional siswa dalam menyelesaikan masalah matematika. *Jurnal Pendidikan MIPA*, 12(4), 1102–1107.
- Cahdriyana, R. A., & Richardo, R. (2020). Berpikir komputasi dalam pembelajaran matematika. *LITERASI*, XI(1), 50–56.
- Darmawan, P., & Wahyuni, S. (2024). Analisis kemampuan berpikir komputasional mahasiswa dalam menyelesaikan masalah matematika. *HEXAGON*, 1(1), 8–18.
- Fajriah, N., Pasani, C. F., Suryaningsih, Y., Eryanto, A. N. E., & Nasrullah. (2023). Pendampingan pembuatan bahan ajar berbasis etnomatematika lingkungan lahan basah untuk meningkatkan wawasan kearifan lokal guru matematika. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 5(1), 313–325.
- Fajriah, N., Suryaningsih, Y., Kamaliyah, K., Budiarti, I., Adawiyah, R., Nasrullah, N., & Amalia, Z. (2022). Eksplorasi etnomatematika dalam pembelajaran geometri untuk

- meningkatkan literasi siswa. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 4(1), 268.
- Hapsari, Y. N. M., & Masduki. (2024). Eksplorasi kemampuan berpikir komputasi siswa smp dalam menyelesaikan soal pola bilangan ditinjau dari gaya belajar. *Jurnal Pendidikan Matematika Dan Matematika*, 10(1), 21–38.
- Islamiyah, A. C., Prayitno, S., & Amrullah, A. (2018). Analisis kesalahan siswa smp pada penyelesaian masalah sistem persamaan linear dua variabel. *Jurnal Didaktik Matematika*, 5(1), 66–76.
- Kamil, M. R., Imami, A. I., & Abadi, A. P. (2021). Analisis kemampuan berpikir komputasional matematis Siswa Kelas IX SMP Negeri 1 Cikampek pada materi pola bilangan. *AKSIOMA: Jurnal Matematika Dan Pendidikan Matematika*, 12(2), 259–270.
- Lidinillah, D. A. M., Rahman, Wahyudin, & Aryanto, S. (2022). Integrating sundanese ethnomathematics into mathematics curriculum and teaching: A systematic review from 2013 to 2020. *Infinity Journal*, 11(1), 33–54.
- Maarif, S., Setiarini, R. N., & Nurafni, N. (2020). Hambatan epistemologis siswa dalam menyelesaikan masalah sistem persamaan linear dua variabel. *Jurnal Didaktik Matematika*, 7(1), 72–89.
- Masfingat, T., Murtafiah, W., & Krisdiana, I. (2018). Kemampuan mahasiswa calon guru matematika dalam pemecahan masalah pembuktian teorema geometri. *Jurnal Mercumatika: Jurnal Penelitian Matematika Dan Pendidikan Matematika*, 2(2), 41.
- Mustafa. (2023). Aktivitas siswa dalam memecahkan masalah matematika dengan berpikir komputasi berbantuan chat-gpt. *MATHEMA JOURNAL*, 5(2), 283–298.
- Nouri, J., Zhang, L., Mannila, L., & Norén, E. (2020). Development of computational thinking, digital competence and 21st century skills when learning programming in K-9. *Education Inquiry*, 11(1), 1–17.
- Putriani, J. D., & Hudaidah, H. (2021). Penerapan pendidikan indonesia di era revolusi industri 4.0. *Edukatif: Jurnal Ilmu Pendidikan*, 3(3), 830–838.
- Rosadi, M. E., Wagino, W., Alamsyah, N., Rasyidan, M., & Kurniawan, M. Y. (2020). Sosialisasi computational thinking untuk guru-guru di sdn teluk dalam 3 banjarasin. *Jurnal SOLMA*, 9(1), 45–54.
- Suktiningsih, W., Supatmiwati, D., & Gusti Ayu Dasriani, N. (2021). Pengenalan pemikiran computational thinking untuk guru mi dan mts pesantren nurul islam sekarbela. *Jurnal Karya Untuk Masyarakat*, 2(1), 91–102.
- Vhalery, R., Setyastanto, A. M., & Leksono, A. W. (2022). Kurikulum merdeka belajar kampus merdeka: Sebuah kajian literatur. *Research and Development Journal of Education*, 8(1), 185.
- Widada, W., Herawaty, D., & Lubis, A. N. M. T. (2018). Realistic mathematics learning based on the ethnomathematics in Bengkulu to improve students' cognitive level. *Journal of Physics: Conference Series*, 1088, 0–8.
- Wing, J. M. (2006). Computational thinking cs @ cmu and grand vision for the field. *Communications of the ACM*, 49(3), 33–35.
- Zahid, M. Z. (2020). Telaah kerangka kerja pisa 2021: Era integrasi computational thinking dalam bidang matematika. *Prosiding Seminar Nasional Matematika*, 3(2020), 706–713.

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