Literasi Nusantara
vol.5 no. 3, July 2025 – October 2025
*https://journal.citradharma.org/index.php/literasinusantara/index*
ISSN 2746 8208 (Online)
ISSN 2746 3575 (Print)

# Experiences of Grade IV Students in Developing Independence in Learning Mathematics Through the Jarimatika Method

**Putri Nabiella Fitri Ramadhani[1], Salsabila Aliapasa[2], Agung Setyawan[3], Fredy Gawan Santoso[4]**
[*1,2,3] Universitas Trunodjoyo Madura, jawa Timur, Indonesia, Indonesia
[4]UPTD SDN Banyuajuh 2, Jawa Timur, Indonesia
220611100013@student.trunojoyo.ac.id , 210611100019@student.trunojoyo.ac.id , agung.setyawan@trunojoyo.ac.id , fredysantoso72@guru.sd.belajar.id
DOI : *https://doi.org/10.56480/jln.v5i3.1559*

Received: September 27, 2025
Revised: October 01, 2025
Accepted: October 14, 2025

**Abstract**

*This research is motivated by the limited number of studies on independent learning in mathematics for elementary school students, despite the fact that this phenomenon has a significant impact on learning outcomes and critical thinking skills. The purpose of this study was to explore the experiences of fourth-grade elementary school students in developing independent learning in mathematics through the application of the Jarimatika method to multiplication. The method used was qualitative research with a descriptive approach. The research subjects were 10 fourth-grade elementary school students selected through purposive sampling. Data were collected through observation, in-depth interviews, and documentation, then analyzed using thematic analysis techniques. The results of this study indicate that the implementation of the Jarimatika method provides a fun, easy-to-understand learning experience and helps students develop independence in solving multiplication problems. Furthermore, students feel more confident, actively seek strategies, and take the initiative to practice independently outside of class. These findings align with constructivist learning theory, which emphasizes the importance of direct experience in building knowledge. The main conclusion of this study is that the Jarimatika method plays a significant role in fostering student learning independence in multiplication. The implications of this study include theoretical aspects, namely enriching the literature on practical-based mathematics learning, and practical aspects, namely recommendations for teachers to implement innovative methods that encourage student learning independence. This research also opens up opportunities for further study on the development of Jarimatika-based media in the broader context of mathematics learning.*

**Keywords–** *Learning Independence; Mathematics; Jarimatika; Student Experience*

Literasi Nusantara. vol.5 no. 3, July 2025 – October 2025
ISSN 2746 8208 (Online) and ISSN 2746 3575 (Print)

© 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution ShareAlike (CC BY SA) license (https://creativecommons.org/licenses/by sa/4.0/).

## 1. Introduction

Mathematics is a subject that plays a crucial role in developing logical, systematic, and critical thinking skills in elementary school students. However, many students still experience difficulty understanding the concept of multiplication, especially in fourth grade. This impacts students' low learning independence, as they tend to rely on teachers or parents to solve math problems (Yasin et al., 2023). Yet, learning independence is a 21st-century skill that must be cultivated from an early age to enable students to face increasingly complex educational challenges, both locally and globally (Wulandari, 2022). According to constructivist learning theory, students will more easily understand concepts if they are actively involved in the learning process through real-life experiences (Piaget in Alsys, 2020). One method that can support this is the Jarimatika method, a counting technique using one's fingers developed to facilitate students' understanding of multiplication operations. Researchers believe this method is relevant for enhancing independent learning because it provides hands-on, enjoyable experiences and allows students to practice independently without always relying on the teacher.

Several previous studies have discussed the effectiveness of the Jarimatika method in improving students' mathematics learning outcomes (Anwarul, 2021; Masaliq et al., 2022). However, the majority of these studies focused on quantitative aspects such as grade improvement and learning outcomes. Few studies have qualitatively explored students' experiences in developing independent learning through the application of the Jarimatika method, particularly in fourth-grade elementary school students. Thus, there is a research gap that needs to be filled to understand how the Jarimatika method influences students' attitudes, strategies, and experiences in independent learning. This research presents a novel approach by exploring students' subjective experiences

in developing independent mathematics learning through the Jarimatika method. This study focuses not only on learning outcomes but also examines how students build self-confidence, motivation, and learning initiative through direct experience. This research is supported by constructivism theory, which emphasizes that knowledge is built through students' active experiences, and the theory of independent learning, which emphasizes the importance of initiative and self-regulation in the learning process (Zimmerman, 2002).

Based on the above description, this study focuses on exploring the experiences of fourth-grade elementary school students in developing independent mathematics learning through the Jarimatika method. The objectives of this study are to describe students' experiences in understanding multiplication using the Jarimatika method, identify the forms of independent learning that emerge, and analyze factors that support and hinder student independent learning.

## 2. Method

This research uses a qualitative approach with a case study, focusing on an in-depth exploration of students' experiences in developing independent mathematics learning through the Jarimatika method (Arzusin, 2021). This approach was chosen to gain a comprehensive understanding of students' subjective experiences in the context of everyday learning. The research design used is descriptive qualitative. This study does not aim to test hypotheses, but rather to describe and analyze the experiences of fourth-grade elementary school students regarding the application of the Jarimatika method in multiplication learning. The researcher served as the primary instrument and data collector, directly involved in the field (Creswell, 2018).

The participants in this study were 25 fourth-grade elementary school students selected using a purposive sampling technique, which involves selecting subjects based on certain criteria, such as: (1) fourth-grade students currently studying multiplication, (2) students who have received instruction using the Jarimatika method, and (3) students who are willing to participate in the study.

Literasi Nusantara. vol.5 no. 3, July 2025 – October 2025
ISSN 2746 8208 (Online) and ISSN 2746 3575 (Print)

This selection of participants took into account the depth of data that can be obtained in qualitative studies (Miles, Huberman, & Saldaña, 2014).

Instruments & Data Collection. The primary instrument in this study was the researcher herself, who acted as both observer and interviewer. Data were collected through three main techniques:

a. Observation of student activities during mathematics lessons using the Jarimatika method. These observations were expected to obtain data that was appropriate and relevant to the research topic.

b. Semi-structured interviews with students to explore their experiences, feelings, and attitudes toward learning using the Jarimatika method.

c. Documentation in the form of teacher notes, student practice results, and photographs of learning activities.

## 3. Result and Discussion

The results of the data analysis indicate three main categories of student experiences in developing independent mathematics learning through the Jarimatika method, namely: (1) increased motivation and interest in learning, (2) the emergence of independent learning strategies, and (3) self-confidence in solving multiplication problems.

### *Increased Motivation and Interest in Learning*

Seven out of 10 participants revealed that the Jarimatika method made them more interested and enthusiastic about learning multiplication. Participants stated that using their fingers as a tool made multiplication easier to understand.

- P01 (Male, 10 years old): "It's easier to use my fingers, so I'm more enthusiastic about studying on my own at home."
- P05 (Female, 10 years old): "Learning feels like playing, it's fun, so I don't get bored quickly."

### *The Emergence of Independent Learning Strategies*

Six participants revealed that they began taking the initiative to practice on their own outside of class. Several students admitted to using the Jarimatika method when doing homework without asking their parents for help.

- P07 (Male, 9 years old): "If there's multiplication homework, I try it using my fingers first, instead of asking my mom straight away."
- P03 (Female, 10 years old): “If it's difficult, I try again and again using my fingers until I can do it.”

***Confidence in solving questions***

Eight out of ten participants expressed greater confidence when working on multiplication problems after using the Jarimatika method. Students felt able to solve problems without fear of making mistakes.

- P02 (Male, 9 years old): "Now, when asked about multiplication, I can answer quickly using my fingers."
- P09 (Female, 10 years old): "Before, I was afraid of making mistakes, but now I'm more confident because I can calculate them myself."

Negative/Anomalous Data: Although the majority of students showed increased motivation and independence, two participants reported still having difficulties.

- P04 (Female, 9 years old): "Sometimes I get confused when the numbers are large, so I always ask my older siblings."
- P08 (Male, 10 years old): "When I'm in a hurry, I often make miscalculations even using my fingers."

This data shows that not all students immediately benefit from the Jarimatika method, especially when faced with problems involving larger numbers or when they are in a hurr. The results sho that the application of the Jarimatika method can improve students' motivation, independent learning strategies, and self-confidence in learning multiplication. This aligns with the research objective, which was to explore students' experiences in developing

Literasi Nusantara. vol.5 no. 3, July 2025 – October 2025
ISSN 2746 8208 (Online) and ISSN 2746 3575 (Print)

independent mathematics learning through the Jarimatika method. The data obtained indicated that students were more enthusiastic about learning when the material was presented in a fun and practical way. Furthermore, most students began to develop the habit of practicing independently without always relying on teachers or parents, which is an important indicator of independent learning. These findings are consistent with research by Masaliq et al. (2022), which stated that the Jarimatika method effectively improves students' understanding of multiplication concepts and makes them more active. These results also support Piaget's constructivist view (Alsys, 2020), which states that learning will be more meaningful if students are directly involved in constructing their knowledge. Furthermore, these results confirm Zimmerman's (2002) opinion regarding independent learning, stating that students who use independent learning strategies are better able to manage their time, control themselves, and take responsibility for their learning outcomes. However, unlike Anwarul's (2021) research which only emphasized improving academic grades, this research provides a new contribution by highlighting aspects of students' subjective experiences, such as motivation, self-confidence, and learning initiative.

Theoretically, this study adds to the literature on experiential mathematics learning methods that can enhance student learning independence. Practically, these findings provide recommendations for teachers to use the Jarimatika method not only as a calculation aid, but also as a means to foster student motivation and learning independence. This method can also be integrated with other student-centered learning strategies to create a more interactive and participatory learning environment. This study has several limitations. First, the number of participants was limited to only 25 fourth-grade elementary school students, so the findings cannot be broadly generalized. Second, data collection was conducted over a relatively short period of time, thus not capturing the long-term dynamics of student learning independence. Third, external factors such as parental support or teacher teaching style were not fully controlled for in this study. Therefore, further research with a larger number of participants, a longer period of time, and more consideration of external variables is needed to strengthen these findings.

## 4. Conclusion

This study confirms that the Jarimatika method significantly contributes to developing independent learning in mathematics among fourth-grade elementary school students, as addressed in the problem formulation. Results indicate that students experienced increased learning motivation, the emergence of independent learning strategies, and increased confidence in solving multiplication problems. Other findings revealed that a small number of students still experienced difficulty when faced with problems involving large numbers or when they were in a rush. This confirms that the learning experience through Jarimatika not only impacts arithmetic skills but also students' attitudes and independent learning habits.

Contribution to Knowledge: This study makes three main contributions. It provides an empirical understanding of students' subjective experiences in developing independent learning through the Jarimatika method, an aspect that has not been widely researched previously (1). It enriches the literature on constructivist-based mathematics learning by emphasizing the importance of direct experience and independent strategies in learning (2). It offers a new perspective that the Jarimatika method functions not only as a calculation technique but also as a pedagogical tool to foster students' motivation, self-confidence, and initiative in independent learning(3).

Recommendations for Further Research. Based on the limitations of this study, several recommendations can be put forward for further study: Conduct longitudinal research to monitor the development of students' independent learning over a longer period (1). Expand the number and variety of samples across different schools and regions to increase the external validity and generalizability of the findings(2). Integrate external variables such as parental support, teacher teaching styles and the use of digital media in the context of Jarimatika implementation (3). Develop a more systematic Jarimatika-based intervention model so that it can be widely applied in mathematics learning in elementary schools (4).

Literasi Nusantara. vol.5 no. 3, July 2025 – October 2025
ISSN 2746 8208 (Online) and ISSN 2746 3575 (Print)

**References**

Abdulkarim, Y. A., Yabo, A. G., Dikko, M., Sarkingobir, Y., & Usman, M. (2023). A. Sativum in the Prevention of Schistosomiasis in Sokoto, Nigeria: Evaluation of Phytochemical Contents, Acute Toxicity, and Effect on Some Kidney Function Parameters in Rats. Journal of Multidisciplinary Science: MIKAILALSYS, 1(2), 137-145. https://doi.org/10.58578/mikailalsys.v1i2.1542

Anak Berkebutuhan Khusus Berdasarkan Mental Emosional Dan Akademik." *Morfologi: Jurnal Ilmu Pendidikan, Bahasa, Sastra Dan Budaya* 2(1):105–12. doi: 10.61132/morfologi.v2i1.295.

Behera, D. (2023). Technological Interventions in Education: An Empirical Review of Their Impact on Learning Outcomes. ALSYSTECH Journal of Education Technology, 1(1), 62-77. https://doi.org/10.58578/alsystech.v1i1.1674

Burhaein, Erick. 2017. "LEARNING SEBAGAI PENDIDIKAN KARAKTER BAGI ANAK TUNALARAS Erick Burhaein Universitas Negeri Yogyakarta PENDAHULUAN Karakter Sebagai Bentuk Kearifan Lokal Budaya Bangsa Indonesia Saat Ini Mengalami Pergeseran Dengan Kebudayaan Barat . Anak-Anak Jaman Sekara." *Jurnal Pembelajaran Olahraga* 3(1):55–68.

Daulay, Nur Afifa, Tria Mayanjani, Sahri Wulandari, and Nefi Darmayanti. 2023. "Pentingnya Mengenali Karakteristik Anak Berkebutuhan Khusus Tuna Laras." *Journal Of Social Science Research* 3(3):3652–58.

Eka Damayanti Nasution, Yang Gusti Feriyanti, and Zainal Efendi Hasibuan. 2025. "Mengenali Karakteristik Anak Berkebutuhan Khusus." *Ahsani Taqwim: Jurnal Pendidikan Dan Keguruan* 2(2):311–25. doi: 10.63424/ahsanitaqwim.v2i2.286.

Fronika, Dhea, Anisa Putri Listari, Dea Olivia, Messi Yulistina, and Nova Asvio. 2023. "Penanaman

Ghani, M., & Sulaiman, S. (2023). The Effect of Dhuha Study Activities on the Spiritual Intelligence of Students of Padang State University. ALSYSTECH Journal of Education Technology, 1(1), 89-105. https://doi.org/10.58578/alsystech.v1i1.1722

Karwati, Euis. (2020). Principal Performance and Professionalism in Building Quality

Meilanda, Angga Yuda. 2020. "Bahaya Labeling Negatif Terhadap Pembentukan Konsep Diri Pada Anak Tunalaras Dengan Tipe Gangguan Perilaku (Conduct Disorder) Dalam Perspektif Konseling Lintas Budaya." *Jurnal Bimbingan Dan Konseling Borneo* 2(1):1–9. doi: 10.35334/jbkb.v2i1.1466.

Myers, Taryn A. 2022. "Cognitive Behavioral Therapy." *Women's Health: Understanding Issues and Influences: Volume 1-2* 1(2):160–61.

Nilai-Nilai Islami Bagi Anak Berkebutuhan Khusus Tuna Laras." *GHAITSA : Islamic Education Journal* 4(2):339–46. doi: 10.62159/ghaitsa.v4i2.856.

Pada Desain Ruang Fasilitas Edukasi Anak Tunalaras Di Surabaya." *Seminar Nasional Sains Dan Teknologi Terapan* (1):477–84.

Padila1, Setiawati2, Iin Inayah3, Henny Suzana Mediani4, Chatarina Suryaningsih5. 2020. "EMOSI DAN HUBUNGAN ANTAR SEBAYA PADA ANAK TUNALARAS USIA SEKOLAH ANTARA TERAPI MUSIK KLASIK (MOZART) DAN MURROTAL (SURAH AR-RAHMAN)." *EMOSI DAN HUBUNGAN ANTAR SEBAYA PADA ANAK TUNALARAS USIA SEKOLAH ANTARA TERAPI MUSIK KLASIK (MOZART) DAN MURROTAL (SURAH ARRAHMAN)* 21(1):1–9.

Permatasari, C. D., I. Ratniarsih, and S. Sukarnen. 2018. "Penerapan Konsep Representatif Intensif

Prasrihamni, Mega, Asep Supena, and Tiurida Intika. 2022. "Gambaran Psikologis Anak Tuna Laras." *Jurnal Pendidikan Kebutuhan Khusus* 6(1):99–107. doi: 10.24036/jpkk.v6i1.620.

Purba Bagus Sunarya, Muchamad Irvan, and Dian Puspa Dewi. 2018. "Kajian Penanganan Terhadap Anak Berkebutuhan Khusus." *Jurnal Abadimas Adi Buana* 2(1):11–19. doi: 10.36456/abadimas.v2.i1.a1617.

Rohmawati, Ulva Badi'. 2017. "Peran Keluarga Dalam Mengurangi Gangguan Emosional Pada Anak Berkebutuhan Khusus." *Al Ulya: Jurnal Pendidikan Islam* 2(2):108–27.

Roller, M. C., Zori, S. (2017). The impact of instituting Process-Oriented Guided-Inquiry Learning (POGIL) in a fundamental nursing course. *Nurse Education Today*, 50, 72-76. https://doi.org/10.1016/j.nedt.2016.12.003

Ruiz-Gallardo, J., Castaño, S., Gómez-Alday, J.J., Valdés, A. (2011). Assessing student workload in Problem Based Learning: Relationships among teaching method, student workload and achievement. A case study in Natural Sciences. *Teaching and Teacher Education*, 27 (3), 619-627. https://doi.org/10.1016/j.tate.2010.11.001

Saputra, Angga. 2018. "Kebijakan Pemerintah Terhadap Pendidikan Inklusif." *Golden Age: Jurnal Ilmiah Tumbuh Kembang Anak Usia Dini* 1(3):1–15. doi: 10.14421/jga.2016.13-01.

Setiawaft, Atang. 2009. "Mengembangkan Motivasi Belajar Anak Tunalaras." *Jassi* 8(1):54–60.

Subandi. 2011. "Deskriptif Kualitatif Sebagai Salah Satu Metode Penelitian Pertunjukan." *Harmonia* 11(2):173–79.

Susi Saswita, Cory Octavia, Ahamad Pauzan Hermandi, and Opi Andriani. 2024. "Penggolongan

Literasi Nusantara. vol.5 no. 3, July 2025 – October 2025
ISSN 2746 8208 (Online) and ISSN 2746 3575 (Print)

Travelancya, Terza, and Intan Sa'adatul Ula. 2022. "Pendidikan Inklusif Untuk Anak Dengan Gangguan Emosi Dan Perilaku (Tunalaras) Inclusive Education for Children with Emotional and Behavioral Disorders (Tunalaras)." *Absorbent Mind: Journal of Psychology and Child Development* 2(1):23–28.

Wally, Nyoman, Nurul Aprilya Umasangaji, Nurul Magfira, and Wilda Syam Tonra. 2023. "Penanganan Anak Tunalaras Ringan Melalui Metode Ejaan Dan Tracing The Dots." *Jurnal Ilmiah Cahaya Paud* 5(1):55–61. doi: 10.33387/cahayapd.v5i1.5812.

Widiastuti, Ni Luh Gede Karang. 2020. "Layanan Pendidikan Anak Berkebutuhan Khusus Dengan Gangguan Emosi Dan Perilaku." *Indonesian Journal Of Educational Research and Review* 3(2):1. doi: 10.23887/ijerr.v3i2.25067.

Yarfin, La Ode, and Suyadi. 2020. "Pendidikan Akhlak Pada Anak Tunalaras Di Sekolah Luar Biasa Prayuwana Yogyakarta." *Jurnal Pendidikan Islam* 11(1):68–85. doi: 10.22236/jpi.v11i1.5036. Yumpi R., Festa. 2017. "Identifikasi Kebutuhan Untuk Perancangan Intervensi Anak Gangguan Emosi Dan Perilaku." *Prosiding Temu Ilmiah X Ikatan Psikologi Perkembangan Indonesia* 1(1):285–98.