

Enhancing Arabic Morphology Learning via Jigsaw: An Experimental Study in a Islamic Boarding School

¹Moh. Tohiri Habib

Email : ¹mohtohirihabib@uiidalwa.ac.id

¹ Universitas Islam Internasional Darullughah Wadda'wah, Indonesia

ABSTRACT

Arabic morphology (*Sharaf*) is essential in mastering the Arabic language, yet traditional rote-learning methods in Pesantren often lead to passive learning and low retention. This study explores the effectiveness of the Jigsaw Method a cooperative learning strategy in improving *Sharaf* learning at Madrasah Tsanawiyah Darullughah Wadda'wah, involving 60 students aged 13–15. Using a qualitative approach, data were gathered through classroom observations, interviews, and focus group discussions. The findings reveal that the Jigsaw Method significantly enhanced student engagement, motivation, comprehension, and confidence in peer-based learning. It also reduced anxiety and encouraged active participation. Despite these benefits, challenges such as vocabulary retention and the need for structured implementation remain. This study addresses a pedagogical gap in *Sharaf* instruction within Pesantren and supports the value of cooperative learning models in Arabic language education. Further research is recommended to assess long-term impacts and extend the method's application to areas like *Nahwu* and *Balaghah*.

Article history

Received 2025-03-13

Revised 2025-06-18

Accepted 2025-06-18

Keywords

Arabic Morphology
(*Sharaf*); Experimental
Study in A Islamic
Boarding School; Jigsaw
Method

This is an open access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Introduction

Arabic morphology, known as *Sharaf*, plays a crucial role in the mastery of the Arabic language, particularly in understanding word formation, derivation, and grammatical structures. Despite its significance, *Sharaf* remains one of the most challenging aspects of Arabic learning, especially for young learners in Islamic boarding schools (Pesantren) (Aliyah, 2018; Asbarin et al., 2024; Rosyadi, 2020). Many students struggle with memorizing patterns and applying them effectively in communication and writing. Traditional rote-learning methods often dominate Arabic instruction, leading to passive learning and a lack of engagement.

To address these challenges, innovative pedagogical approaches such as the Jigsaw Method have been proposed (Hasibuan & Fitriani, 2023). The Jigsaw Method, a cooperative learning technique, encourages students to actively engage with the material, collaborate with peers, and develop a deeper understanding of complex linguistic structures. Several studies have demonstrated its effectiveness in various subjects, including language acquisition. However, research on its application in *Sharaf* learning within the Pesantren context, particularly at the Madrasah Ibtidaiyyah level, remains limited.

Several studies have explored the effectiveness of the Jigsaw Method in various educational settings worldwide, demonstrating its potential to enhance student engagement, comprehension, and collaborative learning. Research from both Western and Eastern contexts has highlighted its success in fostering active participation and improving knowledge retention across disciplines. For instance, Chng et al. (2024) demonstrated its efficacy in clinical pharmacokinetics education in Singapore, while Chopra et al. (2023) and Khadem et al. (2022) reported positive perceptions among students and teachers in diverse academic environments such as medical education in India and Iran. Wu et al. (2023), in a comparative study in Taiwan, concluded that flipped Jigsaw learning outperformed traditional flipped classrooms in enhancing learning outcomes and collaboration.

In the realm of language education, the Jigsaw Method has shown significant promise internationally. Studies like Nalls & Amanda (2022) in the U.S. and Riant et al. (2024) in Europe emphasize its role in promoting motivation, reducing anxiety, and supporting peer-led environments that foster self-regulated learning. These global findings align with the core principles of cooperative learning and indicate the method's adaptability across cultural and institutional contexts.

In the Indonesian context, Al Ghozali & Mustamim (2023) applied Jigsaw in Arabic learning for Islamic education students, reporting marked improvements in comprehension and interaction. Fitriyah & Fauzi (2020) integrated the method into Arabic translation courses, enhancing student engagement and learning quality. In a Madrasah Aliyah setting, Muhajir (2024) also found it effective in boosting Arabic language acquisition. Mahmudah & Hanifansyah (2024) further demonstrated its success in teaching Maharah Qiro'ah at MA As-Sholach, showing high levels of engagement (93.5%) and comprehension (82.2%), although challenges remained in vocabulary retention and material suitability.

Despite these advancements, a critical gap persists in the application of the Jigsaw Method to Arabic morphology (*Sharaf*) a core linguistic domain that remains underrepresented in both global and local research. Most studies, both international and Indonesian, have focused on general language skills or translation, often within modern academic environments

that differ significantly from Pesantren-based education, which traditionally emphasizes memorization (sorogan and bandongan methods) and hierarchical teacher-centered instruction. Moreover, while international literature validates Jigsaw's impact in STEM and humanities disciplines, little attention has been given to its potential in morphology-based instruction, particularly in traditional Islamic schooling models.

Therefore, this study responds to a clear global and local research gap by examining how the Jigsaw Method influences student engagement, comprehension, and retention of *Sharaf* concepts in a Pesantren-based Madrasah Tsanawiyah. This contribution adds to the international discourse on cooperative learning by offering empirical insights from a culturally distinct and pedagogically unique educational setting.

While the Jigsaw Method has proven beneficial across various educational contexts, some challenges remain in ensuring its effective implementation. Structured lesson planning, adequate teacher training, and efficient classroom management are essential to facilitate meaningful peer interactions and maintain balanced group dynamics. Nonetheless, the overall findings indicate that Jigsaw can transform traditional learning into a more interactive, student-centered, and retention enhancing experience, particularly in linguistically complex subjects such as Arabic morphology (*Sharaf*), where memorization and pattern recognition are traditionally emphasized.

Furthermore, this study highlights the adaptability of the Jigsaw Method in non-Western, religious educational systems such as Pesantren. The promising outcomes suggest that cooperative learning strategies can bridge the pedagogical gap between traditional rote-based instruction and modern, constructivist approaches. This reinforces global discourse advocating for inclusive and culturally responsive teaching methods in diverse educational environments, especially in subjects and settings that have historically resisted learner-centered innovations.

This study aims to investigate how the Jigsaw Method enhances students' understanding and retention of *Sharaf* patterns. Specifically, the research seeks to address the following questions: To what extent does the Jigsaw Method improve *Sharaf* learning outcomes among students in a Pesantren-based Madrasah Ibtidaiyyah? How does cooperative learning influence student engagement and motivation in *Sharaf* lessons? By answering these questions, the study seeks to bridge the gap in existing research, which has largely focused on traditional approaches or modern technology-driven methods, rather than collaborative learning models like Jigsaw.

This research contributes to the field of Arabic language education by: Providing empirical evidence on the effectiveness of the Jigsaw Method in *Sharaf* instruction. Offering practical insights for educators in Pesantren-based Madrasah Ibtidaiyyah on implementing

cooperative learning techniques. Enhancing pedagogical strategies to make *Sharaf* learning more engaging, interactive, and student-centered.

The study is conducted in a Pesantren-based Madrasah Ibtidaiyyah, focusing on elementary-level students learning *Sharaf*. It examines the short-term impact of the Jigsaw Method on learning outcomes and motivation. However, it does not explore long-term retention or the method's effectiveness in other linguistic areas such as Nahwu or Balaghah.

By addressing these aspects, this study aims to provide a foundation for future research in enhancing Arabic linguistic education through collaborative and interactive learning methodologies.

Method

Research Design

This study employs a mixed-methods research design, integrating both quantitative and qualitative approaches to comprehensively examine the effectiveness of the Jigsaw Method in enhancing *Sharaf* (Arabic morphology) learning. The choice of mixed methods is grounded in the need to triangulate findings, strengthen validity, and capture both statistical outcomes and in-depth learning experiences (Creswell & Creswell, 2020).

Data Collection Techniques

The research was conducted at Madrasah Tsanawiyah Darullughah Wadda'wah, an Islamic boarding school (Pesantren) in Indonesia, involving 60 students aged 13–15 years who had been formally studying *Sharaf* as part of the Arabic language curriculum. This institution was selected due to its traditional instructional model and active implementation of Arabic morphological learning, which provided a rich environment to investigate pedagogical innovations.

The quantitative component adopted a quasi-experimental design involving pre-test and post-test assessments. Students were divided into two groups: the experimental group, which received instruction using the Jigsaw Method, and the control group, which continued with conventional teaching methods such as sorogan and direct translation. Both groups were given identical tests to assess their understanding and retention of morphological patterns. The data from these tests were analyzed using paired-sample t-tests and independent-sample t-tests to evaluate the effectiveness of the Jigsaw Method statistically.

Meanwhile, the qualitative component aimed to capture the depth of student experiences and perceptions. It included classroom observations, semi-structured interviews with selected students and teachers, focus group discussions (FGDs) with student groups (6–8 members per session), and document analysis involving student worksheets and lesson

plans. These data sources provided insights into engagement, collaborative learning behavior, and instructional challenges.

Data Analysis Techniques

For data analysis, quantitative data from pre- and post-tests were processed using SPSS software, while qualitative data were coded thematically using NVivo. Emerging themes included peer interaction, comprehension strategies, vocabulary retention, and perceived benefits of the Jigsaw Method. The qualitative findings were used to contextualize and enrich the interpretation of quantitative results, thus enabling a more nuanced understanding of how the method influenced learning outcomes.

Primary data were obtained from student test results, observation field notes, interview transcripts, and student learning documents, while secondary data included literature on cooperative learning and Arabic pedagogy. Informants included 4 Arabic language teachers and 30 purposively selected students from both the experimental and control groups.

Ethical clearance was secured from school administrators, with informed consent obtained from all participants. Identities were anonymized, and participation was voluntary. This mixed-methods approach allowed for a robust and holistic investigation of the pedagogical effectiveness of the Jigsaw Method in a unique, religious-educational setting.

Result and Discussion

This section presents the findings from classroom observations, interviews, and focus group discussions (FGDs) conducted with 60 students and teachers at Madrasah Tsanawiyah Darullughah Wadda'wah. The results are analyzed based on the research questions, highlighting the impact of the Jigsaw Method on *Sharaf* learning, student engagement, and motivation. The discussion further connects these findings with previous studies to critically examine their implications.

Students' Perception of the Jigsaw Method in Enhancing *Sharaf* Learning

The implementation of the Jigsaw Method in *Sharaf* instruction demonstrated a positive impact on students' comprehension and retention of morphological patterns. Classroom observations revealed that students who learned *Sharaf* through the Jigsaw approach were more engaged, interactive, and confident in explaining derivational patterns compared to those in traditional rote-learning settings. Students in Jigsaw groups were able to analyze word structures collaboratively, which improved their ability to recognize root words and patterns (*wazn* and *mawzun*). The peer teaching process within groups encouraged active learning, with students explaining *Sharaf* rules to their peers, reinforcing their understanding (Mahmudah

et al., 2024). Unlike conventional teacher-centered methods, Jigsaw minimized student passivity, as each learner had a specific role in the learning process.

Interviews with students provided deeper insights into how the Jigsaw Method influenced their learning experience. One student (S1) expressed:

"Previously, I memorized Sharaf patterns without fully understanding them. But when I had to explain it to my group members, I finally understood the logic behind it." Another student (S2) stated:

"Learning Sharaf with my friends in groups made it much easier. I was not afraid to make mistakes, and my friends helped me correct them." A teacher (T1) noted:

"The Jigsaw Method forced students to take responsibility for their learning. Instead of just listening to explanations, they had to engage actively. I noticed significant improvement in their ability to recognize and apply morphological rules."

These findings indicate that peer collaboration in Jigsaw learning enhances cognitive processing in *Sharaf* acquisition. Collaborative learning enhances student engagement and facilitates deeper comprehension of complex linguistic structures. Interaction among students strengthens retention by allowing them to construct their understanding through active discussions (Hanifansyah & Mahmudah, 2024). In the context of *Sharaf*, this approach enables students to associate morphological patterns with real-world applications, making them easier to recall and implement. Additionally, active involvement in discussion-based learning fosters student confidence in constructing their own understanding, aligning with the way the Jigsaw Method promotes exploration and comprehension through teamwork (Nur Hanifansyah et al., 2024).

The Impact of Cooperative Learning on Student Engagement and Motivation

One of the major benefits observed was a significant increase in student motivation and engagement during *Sharaf* lessons. Compared to traditional lectures, where students often struggled to maintain focus, the Jigsaw Method created a dynamic and interactive learning atmosphere. Students in Jigsaw groups showed higher participation rates, engaging more actively in discussions, asking and answering questions within their groups. Additionally, students who previously avoided answering in class became more willing to contribute after Jigsaw activities. The method also reduced anxiety levels, as students felt more comfortable learning in small peer groups than in a whole-class setting.

During FGDs, students were asked about their motivation levels before and after using the Jigsaw Method. A student (S3) commented:

"Before, I found Sharaf confusing and boring. But when we worked in teams, it became like solving a puzzle. I actually started enjoying it." Another student (S4) stated:

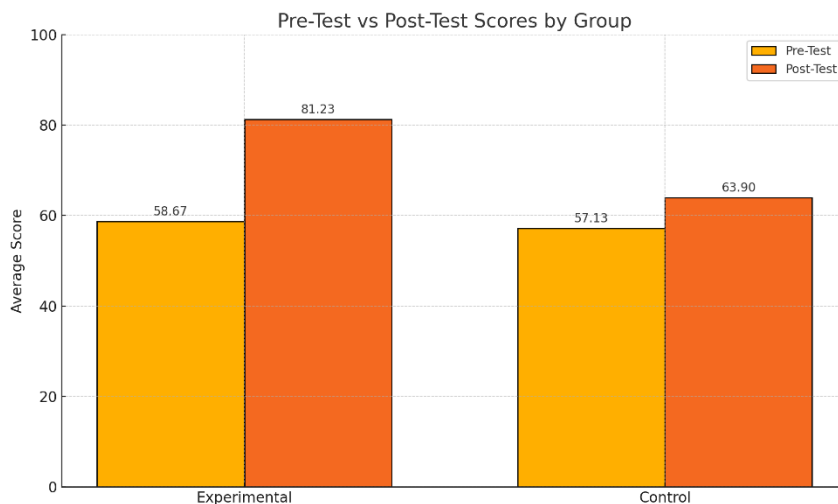
"I used to memorize patterns without knowing why they were important. Now, by teaching my friends, I see the connections between words, and that helps me remember them better."

These findings suggest that cooperative learning transforms student engagement, making *Sharaf* more approachable and less intimidating. Within the *Pesantren* context, collaborative learning environments not only increase motivation but also reduce anxiety, particularly when dealing with intricate aspects of Arabic morphology (Nur Hanifansyah, Mahmudah, et al., 2024). The Jigsaw Method creates a supportive classroom dynamic where students assist one another in understanding morphological structures without excessive pressure. Peer tutoring strategies within this model further build confidence, as students refine their linguistic skills by teaching one another.

The quantitative findings reveal that the implementation of the Jigsaw Method significantly enhanced students' understanding of *Sharaf* concepts compared to traditional instruction methods. A total of 60 students participated in the pre-test and post-test evaluations, with 30 in the experimental group and 30 in the control group.

The quantitative results of this study indicate a significant improvement in students' mastery of *Sharaf* concepts following the implementation of the Jigsaw Method. A total of 60 students participated, with 30 in the experimental group and 30 in the control group. In the experimental group, the average pre-test score was 58.67 (SD = 6.45), while the post-test average increased to 81.23 (SD = 5.71). A paired-sample t-test showed a statistically significant difference, $t(29) = 12.34, p < 0.001$, indicating a substantial learning gain. In contrast, the control group, which received traditional instruction, had a pre-test average of 57.13 (SD = 7.12) and a post-test average of 63.90 (SD = 6.89), with a smaller yet significant increase, $t(29) = 4.27, p < 0.01$. Further comparison using an independent-sample t-test on post-test scores between the two groups revealed a statistically significant difference, $t(58) = 8.57, p < 0.001$, with the experimental group outperforming the control group by a mean difference of 17.33 points. The effect size (Cohen's d) was calculated at 1.55, which denotes a large effect. These findings affirm that the Jigsaw Method effectively enhances students' comprehension and retention of Arabic morphological structures, outperforming traditional methods. The results are consistent with Vygotsky's sociocultural theory, especially the role of peer collaboration in supporting learners through the Zone of Proximal Development. The data provide strong empirical support for integrating cooperative learning models in *pesantren*-based Arabic language instruction.

Figure 1.
Comparison of Pre-Test and Post-Test Scores between Experimental and Control Groups.



The bar graph in Figure 1 clearly illustrates the disparity in learning gains between the experimental and control groups. Students who were taught using the Jigsaw Method experienced a marked improvement in their Sharaf scores, rising from an average of 58.67 to 81.23. This gain, visually represented in the chart, not only indicates statistical significance but also highlights the practical value of collaborative learning approaches in enhancing linguistic competence. In contrast, the control group showed only a modest increase from 57.13 to 63.90, suggesting that traditional rote-based instruction is less effective in promoting deep morphological understanding.

The significant post-test difference between groups, supported by a large effect size (Cohen's $d = 1.55$), reinforces the theoretical assumption derived from Vygotsky's Zone of Proximal Development (ZPD), wherein students benefit cognitively from interaction with peers during the learning process. By engaging in peer teaching and shared problem-solving, learners in the experimental group internalized complex morphological patterns more effectively than those who passively received instruction.

This finding corroborates previous studies (e.g., Al Ghazali & Mustamim, 2023; Mahmudah & Hanifansyah, 2024) that reported similar benefits of Jigsaw in Arabic language instruction, though mostly in areas such as reading or translation. The present study adds to the discourse by extending empirical evidence to the domain of Arabic morphology (Sharaf), which is typically overlooked in cooperative learning research. Moreover, in the pesantren context, where pedagogical innovation often encounters structural and cultural resistance, the successful integration of Jigsaw marks a transformative shift toward student-centered learning.

Nonetheless, while the improvement is clear, the chart also hints at the need for ongoing support. The relatively lower scores in the control group raise questions about the effectiveness of current teaching strategies and call for more widespread adoption of interactive methods. Furthermore, while the graph captures short-term outcomes, it remains essential to investigate whether these gains are sustained over time and whether Jigsaw can be successfully adapted for other linguistic domains such as Nahwu and Balaghah.

The findings of this study align with previous research on the effectiveness of the Jigsaw Method in language learning and other academic disciplines. Consistent with the results of Al Ghozali & Mustamim (2023), this study demonstrates that Jigsaw significantly enhances student comprehension and interaction, particularly in the context of *Sharaf* learning. The structured division of learning materials within groups encourages students to actively process information and explain concepts to their peers, reinforcing linguistic retention. Similar improvements were observed in Fitriyah & Fauzi (2020), where Jigsaw was implemented in Arabic translation courses and led to higher engagement and improved learning quality. The current study further supports these findings, indicating that when applied to *Sharaf* instruction, Jigsaw facilitates a deeper understanding of morphological structures, moving beyond mere memorization.

In an Islamic educational setting, the study's results corroborate the findings of Muhajir (2024), who examined Jigsaw at the Madrasah Aliyah level and found it effective in enhancing Arabic language acquisition. While previous studies have focused primarily on syntax (Nahwu) and translation, this study extends the scope of Jigsaw's applicability to morphology (*Sharaf*), a subject that traditionally relies on rote memorization rather than interactive learning. The integration of cooperative learning techniques in *Sharaf* instruction fosters a more student-centered approach, allowing learners to actively engage with linguistic patterns, similar to how Jigsaw was applied to Maharah Qiro'ah (reading skills) in Mahmudah & Hanifansyah (2024).

Beyond language studies, research in other disciplines has also highlighted the versatility of the Jigsaw Method. Chng et al. (2024) found that Jigsaw enhanced retention and comprehension in pharmacokinetics education, while Chopra et al. (2023) and Khadem et al. (2022) emphasized positive student and teacher perceptions of Jigsaw's collaborative nature. The findings of this study resonate with these results, demonstrating that breaking down complex linguistic structures into smaller, manageable units within peer-learning environments significantly enhances comprehension. Similar to the way Jigsaw promotes conceptual understanding in STEM fields, its structured, cooperative framework in *Sharaf* instruction enables students to internalize derivational patterns and word structures more effectively than in traditional lecture-based approaches.

The motivational benefits of the Jigsaw Method also emerge as a key theme in this study, reinforcing the claims of Nalls & Amanda (2022) and Riant et al. (2024) that Jigsaw supports self-regulated learning and reduces classroom anxiety. Many students in this study reported feeling more confident and less intimidated when discussing *Sharaf* concepts in smaller, peer-led groups rather than in teacher-dominated lessons. This aligns with Wu et al. (2023), who found that flipped Jigsaw classrooms enhanced learning outcomes more effectively than traditional flipped learning models. The interactive and engaging nature of Jigsaw creates a supportive learning environment, encouraging students to take ownership of their learning and reducing their reliance on passive memorization.

However, despite its strengths, some challenges remain in the implementation of Jigsaw in *Sharaf* instruction. Similar to the findings of Mahmudah & Hanifansyah (2024), this study observed difficulties related to material suitability and vocabulary retention. The structured nature of the Jigsaw Method requires careful selection of materials to ensure that students receive equally distributed linguistic concepts across groups. Additionally, as seen in Maharah Qiro'ah instruction, pre-teaching strategies and teacher training are necessary to maximize the effectiveness of Jigsaw, particularly in addressing conceptual gaps and ensuring balanced group participation.

Overall, this study reinforces existing literature on the effectiveness of Jigsaw in enhancing student engagement, comprehension, and motivation across various disciplines. It extends previous research by demonstrating its applicability in Arabic morphology (*Sharaf*), an area where interactive learning methods are still relatively underexplored. Future research should examine long-term retention effects and the integration of Jigsaw with digital learning tools, which could further optimize cooperative learning experiences in *Sharaf* instruction.

Conclusion

This study examined the effectiveness of the Jigsaw Method in enhancing *Sharaf* learning among students in a Pesantren-based Madrasah Tsanawiyah setting. The findings indicate that Jigsaw significantly improves student engagement, comprehension, and motivation, reinforcing its effectiveness as an alternative to traditional rote-learning approaches. By fostering collaborative learning and peer interaction, students demonstrated a deeper understanding of morphological patterns and word derivation while gaining confidence in explaining *Sharaf* concepts to their peers. These results align with previous studies on cooperative learning strategies, extending their applicability to Arabic morphology instruction. Additionally, the study highlights the psycholinguistic benefits of interactive learning, which help reduce language anxiety and enhance self-regulated learning.

Despite these positive outcomes, some challenges remain in material suitability, vocabulary retention, and structured group participation, requiring pre-teaching strategies, scaffolding, and teacher training to optimize the learning experience. The findings suggest that future research should explore long-term retention effects, the integration of Jigsaw with digital learning tools, and its application in other linguistic areas such as Nahwu and Balaghah. Expanding this research to different educational contexts could further validate Jigsaw's role as an innovative and effective pedagogical strategy in Arabic language education, particularly in Pesantren-based institutions seeking to modernize traditional learning methods. To advance this research, future studies should examine the long-term retention effects of the Jigsaw Method, its integration with digital tools, and its application to other linguistic areas such as Nahwu and Balaghah. Comparative research across various Pesantren settings and educational levels is also needed to assess cultural adaptability and developmental suitability. These directions will help validate the Jigsaw Method as an effective and contextually relevant strategy in Arabic language education within traditional Islamic institutions.

References

- Al Ghozali, M. D. H. & Mustamim. (2023). Model Pembelajaran Bahasa Arab Basis Kooperatif Jigsaw Pada Mahasiswa Pendidikan Agama Islam. *Ukazh: Journal of Arabic Studies*, 4(2), 550–559. <https://doi.org/10.37274/ukazh.v4i2.860>
- Aliyah, A. (2018). Pesantren Tradisional Sebagai Basis Pembelajaran Nahwu Dan Sharaf Dengan Menggunakan Kitab Kuning. *Al-Ta'rib : Jurnal Ilmiah Program Studi Pendidikan Bahasa Arab IAIN Palangka Raya*, 6(1), Article 1. <https://doi.org/10.23971/altarib.v6i1.966>
- Asbarin, A., Amalia, N. N., & Mukhlisoh, M. (2024). Evaluating the Regular Sharaf Learning Program at the Foundation of Islamic and Arabic Language Learning In Indonesia. *Journal of Arabic Language Learning and Teaching (JALLT)*, 2(2), 101–110. <https://doi.org/10.23971/jallt.v2i2.181>
- Chng, H. T., Ng, H. Y., Teo, Z., Liew, S. D., & Gan, M. J. S. (2024). Evaluation of jigsaw collaborative learning strategy on students' learning of clinical pharmacokinetics of special populations. *Currents in Pharmacy Teaching and Learning*, 16(11), 102162. <https://doi.org/10.1016/j.cptl.2024.102162>
- Chopra, D., Kwatra, G., Bhandari, B., Sidhu, J. K., Rai, J., & Tripathi, C. D. (2023). Jigsaw Classroom: Perceptions of Students and Teachers. *Medical Science Educator*, 33(4), 853–859. <https://doi.org/10.1007/s40670-023-01805-z>
- Fitriyah, T., & Fauzi, Moh. F. (2020). Improving Quality of Arabic Translation Course through Jigsaw Cooperative Learning. *Izdiyar: Journal of Arabic Language Teaching, Linguistics, and Literature*, 3(1), 17–30. <https://doi.org/10.22219/jiz.v3i1.11033>
- Hanifansyah, N., & Mahmudah, M. (2024). Enhancing Arabic Vocabulary Mastery Through Communicative Strategies: Evidence from Malaysia. *Al-Ta'rib : Jurnal Ilmiah Program Studi Pendidikan Bahasa Arab IAIN*, 12((2)), 263–278. <https://doi.org/10.23971/altarib.v12i2.9082>

- Hasibuan, R., & Fitriani, L. (2023). Innovative Approach to Reading Skill Development: Jigsaw Strategy and Crossword Puzzle Media. *Journal of Arabic Language Learning and Teaching (JALLT)*, 1(2), 61–74. <https://doi.org/10.23971/jallt.v1i2.98>
- Khadem, A. M., Khoshkholgh, R., sani, F. V., & Dolatabadi, Z. (2022). Using the Jigsaw (Puzzle) Method in Academic Environments: Benefits and Challenges. *Medical Education Bulletin. Medical Education Bulletin*, 3(2), 465–473. <https://doi.org/10.22034/meb.2022.333390.1053>
- Mahmudah, M., & Hanifansyah, N. (2024). Implementation of the Jigsaw Learning Method for Maharah Qiro'ah Learning at MA As-Sholach, Kejeran Boyeman, Gondangwetan, Pasuruan. *Lughawiyah: Journal of Arabic Education and Linguistics, Universitas Islam Negeri Mahmud Yunus Batusangkar, Indonesia*, Vol 6(No 2), 165–184. <http://dx.doi.org/10.31958/lughawiyah.v6i2.13456>
- Mahmudah, M., Nurhanifansyah, N., & Khalid, S. M. S. bin. (2024). Psycholinguistic Approaches to Enhancing Arabic Speaking Proficiency through Comic Strips. *Arabiyyatuna: Jurnal Bahasa Arab*, 8(2), 804–826. <https://doi.org/10.29240/jba.v8i2.11349>
- Muhajir, M. R. (2024). Arabic Language Learning Development In The Use Of Jigsaw Method At Madrasah Aliyah Al-Washliyah Class X. Tembung Percut Sei Tuan. *Jurnal Al-Hibru*, 1(2), 43–55. <https://doi.org/10.59548/hbr.v1i2.263>
- Nalls, & Amanda. (2022). *Teachers' Perceptions of the Acceptability of the Jigsaw Method: An Exploration of Implementation Barriers and Faciliators* [University of Southern Maine]. <https://digitalcommons.usm.maine.edu/etd/423>
- Nur Hanifansyah, Mahmudah, M., & Syakur, S. A. (2024). Peer Tutoring as a Collaborative Approach in Arabic Language Learning. *Lahjatuna: Jurnal Pendidikan Bahasa Arab*, 4(1), 26–43. <https://doi.org/10.38073/lahjatuna.v4i1.2181>
- Nur Hanifansyah, Menik Mahmudah, & Sultan Abdus Syakur. (2024). Mnemonic Storytelling As A Psycholinguistic Approach To Enhancing Arabic Writing Competence. *El-Jaudah: Jurnal Pendidikan Bahasa Dan Sastra Arab*, 5(2), 31–52. <https://doi.org/10.56874/ej.v5i2.2029>
- Riant, M., De Place, A.-L., Bressoux, P., Batruch, A., Bouet, M., Bressan, M., Brown, G., Butera, F., Cepeda, C., Cherbonnier, A., Darnon, C., Demolliens, M., Desrichard, O., Ducros, T., Goron, L., Hémon, B., Huguet, P., Jamet, E., Martinez, R., ... Pansu, P. (2024). Does the Jigsaw method improve motivation and self-regulation in vocational high schools? *Contemporary Educational Psychology*, 77, 102278. <https://doi.org/10.1016/j.cedpsych.2024.102278>
- Rosyadi, F. I. (2020). 'Anāshir Su'ūbāt Ta'allum Al-Nahw wa Al-Sharf: Dirāsah Tahlīliyah bima'had Al-Īmān Al-Islāmiy Mantilan Jawa Al-Wustha. *Al-Ta'rib: Jurnal Ilmiah Program Studi Pendidikan Bahasa Arab IAIN Palangka Raya*, 8(1), 49–64. <https://doi.org/10.23971/altarib.v8i1.1860>
- Wu, T.-T., Sari, N. A. R. M., & Huang, Y.-M. (2023). Flipped jigsaw II versus conventional flipped classroom: Which approach better improves learning outcomes in the International Marketing Management course? *The International Journal of Management Education*, 21(3), 100855. <https://doi.org/10.1016/j.ijme.2023.100855>