



Enhancing English Learning Outcomes with Joyful Learning-Based Wordwall Media in Primary Schools

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ABSTRACT

This study examines the implementation of Joyful Learning-based Wordwall media aimed at enhancing English learning outcomes among primary school students. Employing a quasi-experimental design, the research involved 60 participants, randomly divided into an experimental group that utilized Wordwall for interactive learning and a control group that engaged in traditional teaching methods over an eight-week period. Quantitative data were collected through pre- and post-intervention assessments measuring English proficiency, while qualitative data were gathered from student feedback via questionnaires and focus groups. The results indicated a significant improvement in English learning outcomes among the experimental group, with average scores increasing from 65.4 to 82.7, contrasted with a minor increase in the control group from 64.5 to 68.2. Qualitative feedback revealed that 85% of students found the Wordwall activities enjoyable and engaging, fostering greater participation and collaboration. These findings highlight the critical role of integrating technology-driven, gamified learning tools in primary education, not only to bolster academic performance but also to enhance student motivation and engagement. The study advocates for broader adoption of interactive educational technologies and ongoing teacher training to create enriching learning environments in language education.

Keywords: *English Language Learning; Gamification; Joyful Learning; Primary Education; Wordwall.*

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INTRODUCTION

A critical issue in primary education is the necessity for innovative pedagogical approaches that align with the developmental stages of students, as traditional teaching methods often fail to engage young learners effectively. Media education must adapt to the characteristics of primary school students, indicating the importance of strategic curricular updates to address learning barriers (Rosyid, Marmoah, & Adi, 2024). Consequently, the incorporation of engaging and interactive learning tools like Wordwall emerges as a potential solution to bridge the gap in language education (Rahman, Bundu, & Samad, 2023). Moreover, the increased utilization of technology in education cannot be overstated. Research has shown that

children are significantly influenced by digital media exposure, which is essential for fostering relevant learning experiences (Nurmalisa et al., 2023).

This sentiment echoes in studies such as that of (Hasram et al., 2021) which emphasize that contemporary curriculum frameworks increasingly acknowledge the role of innovative media in enhancing educational outcomes, further supporting the selection of Wordwall as a tool that aligns technology with Joyful Learning methodologies. Additionally, the educational landscape is facing obstacles in student engagement and retention of knowledge. Current literature identifies that conventional learning environments often fail to maintain interest among primary school students, leading to suboptimal language learning results. Studies indicate that the integration of engaging technologies significantly boosts vocabulary acquisition. This supports the notion that Wordwall's interactive capabilities could catalyze better engagement, thereby promoting enhanced learning outcomes in English. It is also essential to consider the growing recognition of gamification as a powerful educational strategy. The research indicates that such interactive platforms not only make learning enjoyable but also facilitate deeper cognitive engagement, thus improving overall academic performance.

Finally, the educational context itself is evolving, necessitating a pragmatic shift. Finally, the educational context itself is evolving, necessitating a pragmatic shift towards student-centered learning approaches that prioritize enjoyment alongside learning outcomes. The shift towards Joyful Learning (Li, 2023), combined with effective media like Wordwall (Rahman, Bundu, & Samad, 2023), aligns well with this evolution, promising to enhance English learning outcomes in primary schools through an interactive and stimulating educational experience. In summary, the background problem encompasses the necessity to evolve educational practices to engage students effectively, the strategic integration of technology in language learning, and the implementation of gamified learning methodologies to improve English proficiency among primary school students (Sundaram & Ramesh, 2022).

The necessity to evolve educational practices in primary schools is imperative to effectively engage students, especially in the realm of English language learning. Traditional methods of instruction often fail to captivate young learners, leading to disengagement and poor learning outcomes (Hasanah, 2022). This challenge necessitates the implementation of innovative strategies that prioritize student engagement and enjoyment (Zarei & Fabregas, 2024). Research has indicated that traditional pedagogical approaches, often dominated by rote memorization and passive learning, significantly diminish students' intrinsic motivation and hinder their overall learning experiences (Setyawati, Wijaya, & Widjaja, 2022; Zitha, Mokganya, & Sinthumule, 2023; Karabiyik, 2024). Thus, it is essential to adopt approaches that foster a more dynamic and interactive learning environment. The strategic integration of technology into language learning is a vital aspect of this evolution. Platforms like Wordwall represent cutting-edge educational technologies that can transform conventional learning into an engaging, game-like experience. Although the study by (Yabo, 2020) focuses on joyful learning in mathematics, it highlights how a joyful approach enhances student motivation in a technology-integrated environment, suggesting similar potential for language learning. Furthermore, (Maming et al., 2023) argue that a Joyful Learning framework, especially through the use of engaging media such as songs and games, significantly enhances students' willingness to participate and succeed in their English language studies. By tapping into students' affinity for technology, we can create immersive learning experiences that promote language

acquisition in a more relatable manner for primary school students. Furthermore, the implementation of gamified learning methodologies has shown considerable promise in addressing the deficits of motivation and engagement that many students exhibit.

Research by Sundaram and Ramesh illustrates how joyful, game-based learning can improve the educational experience, particularly during the adaptations necessitated by the COVID-19 pandemic, by creating engaging learning environments that can be applied to various subjects, including language learning (Sundaram & Ramesh, 2022). The study suggests that embedding gaming elements into educational content enhances students' motivation and can facilitate a more in-depth understanding of subject matter, including English (Wei et al., 2024).

Gamification effectively caters to students' social and psychological needs for interaction and achievement and aligns well with their natural inclinations toward play and discovery. Indeed, gamification serves as an effective catalyst for improving English proficiency among primary school students. Buckley and Doyle assert that gamified environments lead to a significant increase in student motivation compared to traditional instructional styles. This finding is supported by research indicating that interactivity and collaborative elements characteristic of gamified learning contribute to enhanced academic engagement and retention of knowledge (Buckley & Doyle, 2014). This pedagogical shift recognizes that learning outcomes can improve significantly when students find joy and meaning in their educational experiences. Additionally, the impact of a positive and joyful learning environment cannot be overstated.

As outlined by Waterworth, when learners operate within an atmosphere that evokes passion and excitement about the material, they are more likely to form deeper connections to the content being taught (Waterworth, 2020). Thus, creating such an environment through Joyful Learning is not merely a beneficial enhancement but a necessary evolution in pedagogical practices to nurture effective language learning. In conclusion, the development of engaging educational strategies, particularly the integration of technology and gamification, is crucial in addressing the urgent need to evolve primary school educational practices. These methods not only foster meaningful engagement but also significantly enhance English language proficiency among students, equipping them with the necessary skills to thrive in an increasingly competitive global context.

METHOD

This study adopted a quasi-experimental design incorporating both qualitative and quantitative methodologies. This design provided a robust framework for measuring the effectiveness of Wordwall media in enhancing English learning outcomes while also allowing for in-depth exploration of experiences and perceptions of the students. The selection of this design aligns with established methodologies in educational research where a mix of data types can reveal a complete picture of the educational phenomenon being examined. The participants consisted of 60 primary school students aged 8 to 12 years, enrolled in two separate classes at a selected primary school. The students were randomly assigned to two groups: an experimental group that received Joyful Learning-based instruction utilizing Wordwall media and a control group that underwent traditional teaching methods. This randomization helps ensure the validity of the results by minimizing selection biases (Mavilidi et al., 2018).

Parental consent was obtained prior to the study, and all ethical guidelines for research involving minors were strictly followed.

Once the groups were established, the following procedures were executed over a period of eight weeks:

- **Week 1:** Baseline assessment of students' English proficiency was conducted using a standardized English language test. This assessment covered key areas of vocabulary, grammar, reading comprehension, and listening skills.

- **Weeks 2-7:** The experimental group participated in lessons that incorporated Wordwall media for 45 minutes each week. These lessons embodied principles of Joyful Learning, emphasizing enjoyment, interaction, and creativity. Students were encouraged to collaborate and engage in peer learning through game-based activities tailored to the English curriculum. Conversely, the control group continued with conventional teaching methods, which primarily consisted of lectures and traditional worksheets.

- **Week 8:** A post-intervention assessment identical to the baseline test was conducted for both the experimental and control groups to measure improvements in English language proficiency. Data Collection Data were collected through multiple instruments to ensure a comprehensive evaluation of the study outcomes:

Quantitative data: Pre- and post-test scores provided objective measures of changes in English proficiency. This data was analyzed using statistical methods such as ANCOVA to assess the differences between the two groups while controlling for pre-intervention scores (Susanto et al., 2022). Student feedback was collected through questionnaires and focus group discussions. These instruments aimed to capture subjective experiences, attitudes towards learning, and the perceived benefits of using Wordwall media in the classroom (Hu & McGeown, 2020).

Data Analysis Statistical analyses were performed using SPSS software. Pre-test and post-test score comparisons were conducted using paired sample t-tests and ANCOVA to determine if differences between the groups were statistically significant. Qualitative data from student feedback were analyzed using thematic analysis, identifying common themes and insights relevant to student engagement and perceived learning outcomes (Purnama et al., 2024). The combination of these methodologies ensures that the results of the study provide not only measurable improvements in English language proficiency but also a rich narrative about student experiences with Joyful Learning-based Wordwall media. This methodology is designed to be replicable, allowing educators and researchers to apply similar approaches in their contexts to explore the efficacy of innovative learning tools.

The primary material for this study was Wordwall, an interactive, web-based educational tool designed to create engaging learning activities tailored for young learners. Wordwall allows educators to develop a variety of game formats such as matching exercises, quizzes, and word searches, promoting active engagement and participation among students (Widyaningsih et al., 2023). Additionally, supplementary resources such as worksheets and digital flashcards were developed to integrate traditional learning tools with innovative Wordwall activities. The combination of these methodologies ensures that the results of the study provide not only measurable improvements in English language proficiency but also a rich narrative about student experiences with Joyful Learning-based Wordwall media. This methodology is designed to be replicable, allowing educators and researchers to

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RESULT AND DISCUSSION

The research aimed to evaluate the impact of implementing Joyful Learning-based Wordwall media on English learning outcomes in primary school students. This section presents the results derived from quantitative assessments and qualitative feedback, elaborating on the significance of findings and their implications for educational practices.

Quantitative Results

The quantitative data gathered from student assessments before and after the intervention revealed a significant enhancement in English proficiency scores within the experimental group that utilized Wordwall media. The pre-test average score of the experimental group was 65.4, while the post-test average increased to 82.7, signaling a substantial improvement of 17.3 points. The control group, which engaged in traditional teaching methods, only showed a minor increase from 64.5 to 68.2, with a difference of merely 3.7 points. Statistical analysis using paired sample t-tests confirmed that the difference in learning outcomes between the experimental and control groups was statistically significant, with a p-value of 0.0001, indicating that the use of Wordwall effectively enhances vocabulary comprehension and overall English language skills among primary school students.

The quantitative data gathered from student assessments before and after the intervention revealed a significant enhancement in English proficiency scores within the experimental group that utilized Wordwall media. The pre-test average score of the experimental group was 65.4, while the post-test average increased to 82.7, signaling a substantial improvement of 17.3 points. The control group, which engaged in traditional teaching methods, only showed a minor increase from 64.5 to 68.2, with a difference of merely 3.7 points. This notable rise in the experimental group's performance suggests that the interactive and engaging nature of Wordwall media facilitated better retention and understanding of the English language concepts compared to the more conventional, passive learning experiences in the control group. Specifically, the pedagogical approach associated with Joyful Learning, which emphasizes enjoyment, collaboration, and active participation, likely played a critical role in enhancing cognitive engagement among students. Several studies support the premise that interactive educational tools can substantially raise student achievement across diverse educational contexts. For instance, the technology-enhanced learning environments create avenues for better student interaction and active exploration of linguistic content, leading to improved learning outcomes.

Additionally, the findings from the current study align with previous research that underscores the effectiveness of using digital media in language learning. For instance, emphasized that digital platforms such as Wordwall encourage immediate feedback and adaptive learning experiences tailored to students' individual needs, which substantially contribute to their overall learning success. This immediate form of feedback helps to reinforce learned material, allowing students to make corrections and adjustments in real time. Moreover, the results suggest that a high level of engagement with the learning activity is fundamentally linked to the increase in scores observed in the experimental group.

Qualitative Feedback

Qualitative feedback corroborated the positive quantitative findings. Through focus groups and questionnaires, students expressed heightened engagement and motivation when learning with Wordwall. A significant 85% of students indicated that they found learning activities using the Wordwall application to be "fun" and "interesting." This aligns with Sa'diyah's findings, suggesting that game-based learning significantly impacts students' readiness and responsiveness in class (Sa'diyah, 2022). Additionally, many students reported that the interactive nature of Wordwall made them more willing to participate in lessons, thereby fostering a collaborative learning environment. Teachers also observed changes in student behavior, noting that the Wordwall activities promoted not only linguistic proficiency but also encouraged teamwork and communication skills among peers. Educators indicated that students were more proactive in completing assignments and participating in discussions, emphasizing the Wordwall's role in creating a joyful learning atmosphere.

This observation posited that Joyful Learning promotes a safe and attractive learning environment conducive to exploring new ideas without fear of failure. The use of interactive games decreased the pressure typically associated with formal assessments and encouraged students to engage more deeply with the content. Interestingly, students also appreciated the immediate feedback they received through the Wordwall platform, which allowed them to identify areas for improvement in real-time. This instant feedback mechanism is crucial in educational settings, as it aligns with the framework proposed by (Mettarikanon et al., 2023), where engagement in gameplay, feedback, and meta-reflection are essential elements of effective learning experiences. By reinforcing learning content interactively, the Wordwall media fostered an environment where students could self-correct and enhance their understanding through playful exploration. Moreover, qualitative responses illustrated a shift in perspective toward group work. Many students noted that collaborative Wordwall activities allowed them to learn from their peers, thereby enhancing their social learning skills which emphasizes that cooperative learning activities can significantly improve learning outcomes, as they leverage the collective knowledge of the group.

Overall, the qualitative feedback strongly reinforces the notion that the implementation of Wordwall media significantly enhances not only the engagement and motivation of students but also fosters a collaborative and supportive learning environment. The positive experiences articulated by the students make a compelling case for the inclusion of interactive, gamified learning tools in primary education settings. As educators continually seek effective methods to enhance student learning outcomes, adopting platforms like Wordwall could serve as a vital strategy for creating more engaging and meaningful educational experiences.

Implications for Pedagogy

The results of this study highlight the necessity for integrating technology-driven, engaging learning tools in primary education, particularly in language acquisition contexts. The findings align with those (Hidayah & Andriani, 2023), who noted that the Wordwall application positively impacts student interest and motivation, encouraging educators to consider such interactive tools to enhance student engagement and learning outcomes. The gamification elements inherent in Wordwall facilitate an enriched learning experience, transforming traditional rote

learning into dynamic, interactive encounters that are essential for effective language mastery. Moreover, the study underscores the importance of continuous professional development for teachers to effectively integrate such technologies into their teaching practices. Training on interactive applications like Wordwall is crucial in ensuring teachers are equipped to create compelling learning environments for their students.

Research supports the positive impact of gamification on learning performance. This mirrors the findings of Aguilar et al., who emphasized that the effective application of gamification strategies leads to deeper engagement in educational contexts, ultimately influencing learning outcomes positively (Aguilar et al., 2023). Such insights significantly bolster the argument that gamification extends beyond mere entertainment, serving as a powerful pedagogical tool to motivate students and deepen their learning experiences.

Moreover, the transformative potential of gamification underscores the importance of continuous professional development for teachers. For effective integration of technologies like Wordwall into teaching practices, it is imperative that educators receive adequate training and support. Professional development should focus on both the technical aspects of using gamification tools and pedagogical strategies that maximize these tools' instructional benefits. As noted by Asiri, teachers' positive perceptions and attitudes toward technology integration significantly predict their willingness to adopt new teaching methods (Asiri, 2019). These findings emphasize that empowering teachers through targeted training programs can equip them with the necessary skills to create compelling learning environments where gamification can thrive.

Additionally, the successful implementation of gamified learning strategies relies heavily on teachers' understanding of their students' needs and learning styles. Training on interactive applications like Wordwall enables teachers to tailor their instructional approaches, making them more responsive to the diverse learning paces and preferences of their students. Such adaptability further enhances the effectiveness of gamification in the classroom. In summary, the combination of gamification elements present in Wordwall creates a stimulating and engaging learning atmosphere that positively influences language acquisition among students. However, the successful integration and utilization of such technologies hinge on well-prepared educators who are equipped to navigate and maximize these resources effectively. Continuous professional development is therefore essential, ensuring that teachers can foster an enriched educational environment that embraces innovative pedagogies.

CONCLUSION

In conclusion, the implementation of Joyful Learning-based Wordwall media has proven to significantly enhance English learning outcomes among primary school students, promoting engagement and collaborative skills in a joyful atmosphere. As educational paradigms shift towards more interactive and technology-integrated approaches, the findings from this study provide a compelling case for the broader adoption of gamified learning tools in primary schools. The positive reception from both students and teachers emphasizes that innovative educational practices can lead to meaningful improvements in language acquisition and overall academic success.

The findings of the current study align with prior research, reinforcing the idea that gamified learning promotes not only content mastery but also essential social

skills such as teamwork and communication among peers. Furthermore, as educational paradigms increasingly embrace interactive and technology-integrated approaches, the evidence gathered from this study advocates for a broader adoption of gamified learning tools in primary schools. Educators and stakeholders should recognize the potential of these tools, as their implementation can lead to more meaningful and effective learning experiences for students. Positive reactions from both students and teachers regarding these innovations underline that well-designed, technology-integrated pedagogies can significantly enhance language acquisition and overall academic success.

Nonetheless, adopting these innovative practices requires ongoing professional development for educators. As highlighted in relevant findings, comprehensive training on interactive applications like Wordwall is essential. This foundational knowledge is crucial for creating environments where joy and learning coexist, thus maximizing the benefits of gamified learning strategies. In summary, the encouraging outcomes achieved through the use of Wordwall media exemplify the necessity for educators to adapt to modern technological advancements. By actively engaging students in their learning processes and nurturing collaborative skills, innovative programs like Wordwall can redefine conventional teaching approaches and contribute significantly to improving educational outcomes in primary schools.

REFERENCES

- Aguilar, G. F., Grau, M. P., Gavira, J. F., & Llerena, A. M. (2023). "I learned more because I became more involved": Teacher's and students' voice on gamification in physical education teacher education. *International Journal of Environmental Research and Public Health*, 20(4), 3038. <https://doi.org/10.3390/ijerph20043038>
- Asiri, M. J. (2019). Do teachers' attitudes, perception of usefulness, and perceived social influences predict their behavioral intentions to use gamification in EFL classrooms? Evidence from the Middle East. *International Journal of Education and Practice*, 7(3), 112–122. <https://doi.org/10.18488/journal.61.2019.73.112.122>
- Buckley, P. G., & Doyle, E. (2014). Gamification and student motivation. *Interactive Learning Environments*, 24(6), 1162–1175. <https://doi.org/10.1080/10494820.2014.964263>
- Hasanah, S. (2022). Stabilizing student engagement in teaching English at SDIT At-Taqwa Surabaya. *Education and Human Development Journal*, 7(1), 33–41. <https://doi.org/10.33086/ehdj.v7i01.2715>
- Hasram, S., Nasir, M. K. M., Mohamad, M., Daud, M. Y., Rahman, M. J. A., & Mohammad, W. M. R. W. (2021). The effects of WordWall online games (WOW) on English language vocabulary learning among Year 5 pupils. *Theory and Practice in Language Studies*, 11(9), 1059–1066. <https://doi.org/10.17507/tpls.1109.11>
- Hidayah, V., & Andriani, A. (2023). The use of WordWall learning media on student interest and motivation in IPAS learning at elementary school. *Proceedings of the 4th International Conference on Educational Technology and Online Learning (ICETOL)*. <https://doi.org/10.4108/eai.22-7-2023.2335123>

- Hu, X., & McGeown, S. (2020). Exploring the relationship between foreign language motivation and achievement among primary school students learning English in China. *System*, 89, 102199. <https://doi.org/10.1016/j.system.2020.102199>
- Karabiyik, Ü. (2024). Investigation of the effect of gamified learning on motivation and success in math class. *Journal of Education and Practice*, 8(1), 32–52. <https://doi.org/10.47941/jep.1645>
- Li, Y. (2023). English teaching practice and research under the joyful English philosophy. *Yixin Publisher*, 1(4), 59–65. <https://doi.org/10.59825/jet.2023.1.4.59>
- Maming, K., Patahuddin, P., Nasrullah, N., Sianna, & Arsyad, N. A. (2023). Joyful learning as a worthwhile instructional activity for English beginner students in the post-COVID-19 pandemic era. *Ethical Lingua: Journal of Language Teaching and Literature*, 10(1). <https://doi.org/10.30605/25409190.569>
- Mavilidi, M. F., Lubans, D. R., Eather, N., Morgan, P. J., & Riley, N. (2018). Preliminary efficacy and feasibility of “Thinking While Moving in English”: A program with physical activity integrated into primary school English lessons. *Children*, 5(8), 109. <https://doi.org/10.3390/children5080109>
- Mettarikanon, D., Tawanwongsri, W., Wanchai, A., & Chookerd, N. (2023). Comparison of the efficacy between game-based learning and pamphlet on enhancing recognition of common cutaneous malignancies in Thai younger adults. *Contemporary Educational Technology*, 15(2), ep419. <https://doi.org/10.30935/cedtech/13013>
- Nurmalisa, Y., Sunyono, S., Yulianti, D., & Sinaga, R. (2023). An integrative review: Application of digital learning media to developing learning styles preference. *International Journal of Information and Education Technology*, 13(1), 187–194. <https://doi.org/10.18178/ijiet.2023.13.1.1795>
- Purnama, Y., Wijayanto, P. W., Barlian, Y. A., Nurbani, S., & Syathroh, I. L. (2024). Transforming English language learning in elementary schools through augmented reality. *Jurnal Pedagogi Dan Pembelajaran*, 7(1), 112–123. <https://doi.org/10.23887/jp2.v7i1.66711>
- Rahman, S., Bundu, P., & Samad, S. (2023). The development of social science learning media based on WordWall digital game in elementary schools. *Asian Journal of Education and Social Studies*, 44(2), 9–19. <https://doi.org/10.9734/ajess/2023/v44i2957>
- Rosyid, H., Marmoah, S., & Adi, F. (2024). Efforts to overcome barriers in the application of digital learning media in the implementation of Merdeka Belajar curriculum in primary schools. *Social Humanities and Educational Studies (SHES) Conference Series*, 7(1), 106. <https://doi.org/10.20961/shes.v7i1.84296>
- Sa’diyah, I. H. (2022). Embracing technology in ESP classes: Is it a learning tool or just cool tool? *Academic Journal Perspective Education Language and Literature*, 10(2), 139. <https://doi.org/10.33603/perspective.v10i2.7260>
- Setyawati, A., Wijaya, S., & Widjaja, D. (2022). Effect of student’s perception of learning innovation on student engagement and student satisfaction. *Petra International Journal of Business Studies*, 5(2), 198–205. <https://doi.org/10.9744/ijbs.5.2.198-205>
- Sundaram, S., & Ramesh, R. (2022). Effectiveness of joyful game-based blended learning method in learning chemistry during COVID-19. *International Journal of*

- Evaluation and Research in Education (IJERE)*, 11(4), 2140.
<https://doi.org/10.11591/ijere.v11i4.22427>
- Susanto, S., Nanda, D. S., Dharmawan, Y. Y., Hartini, T. N., Septiyana, L., & Firmansyah, B. (2022). Students' perception in learning extensive listening by using cartoon movies. *Beyond Linguistika*, 5(1).
<https://doi.org/10.36448/bl.v5i1.2649>
- Waterworth, P. (2020). Creating joyful learning within a democratic classroom. *Journal of Teaching and Learning in Elementary Education*, 3(2), 109.
<https://doi.org/10.33578/jtlee.v3i2.7841>
- Wei, T. X., Yunus, M. M., & Said, N. E. M. (2024). Level up literacy: Unveiling English teachers' gamified learning adventure in primary education. *International Journal of Academic Research in Progressive Education and Development*, 13(3).
<https://doi.org/10.6007/ijarped/v13-i3/21529>
- Widyaningsih, Y., Nadiroti, N., Hamdani, N. A., Nurfaadilah, S., & Febriyanti, N. (2023). WordWall application as an interactive learning media in mastering English vocabulary at elementary school. In *Proceedings of the International Conference on Education* (pp. 446-457). https://doi.org/10.2991/978-2-38476-056-5_46
- Yabo, R. S. (2020). The joyful experience in learning mathematics. *Southeast Asian Mathematics Education Journal*, 10(1), 55-67.
<https://doi.org/10.46517/seamej.v10i1.85>
- Zarei, N., & Fabregas, I. (2024). Innovative and creative English teaching strategies: A conceptual framework. *Recoletos Multidisciplinary Research Journal*, 12(1), 73-84.
<https://doi.org/10.32871/rmrj2412.01.06>
- Zitha, I., Mokganya, G., & Sinthumule, O. (2023). Innovative strategies for fostering student engagement and collaborative learning among extended curriculum programme students. *Education Sciences*, 13(12), 1196.
<https://doi.org/10.3390/educsci13121196>