



STUDENTS' SATISFACTION IN ENGLISH LEARNING THROUGH WAYGROUND: A QUANTITATIVE STUDY IN INDONESIAN JUNIOR HIGH SCHOOL

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ABSTRACT

This study investigates students' satisfaction with English language learning facilitated through the Wayground application in an Indonesian Islamic junior high school context. Specifically, it examines students' levels of satisfaction across four key dimensions: perceived usefulness, perceived ease of use, system quality, and overall learning experience among eighth-grade learners. Employing a descriptive quantitative approach, the study involved 33 participants selected through a total sampling technique. Data were gathered using a 20-item questionnaire developed based on the Technology Acceptance Model (TAM) and the Information Systems Success Model, and subsequently analyzed using descriptive statistical methods. The results indicate that students report consistently high levels of satisfaction across all measured dimensions. The Wayground application is viewed as beneficial, user-friendly, and effective in enhancing students' engagement, motivation, and overall learning experiences in English language instruction. The findings offer valuable insights for English teachers, instructional designers, and educational policymakers seeking to integrate gamified digital learning platforms into EFL classrooms, particularly at the junior high school level. Furthermore, this study enriches the existing body of literature by providing empirical evidence on learners' satisfaction with the Wayground application within the context of Indonesian Islamic junior high schools, an educational setting that remains underrepresented in previous research.

Keywords: *English learning, EFL learning, student satisfaction, Wayground, gamified learning*

1. INTRODUCTION

English is taught as a foreign language (EFL), and achieving proficiency in the language has become increasingly essential for learners' academic advancement and future professional development (Ajaka, 2019). Junior high school students, in particular, are at a crucial stage of language acquisition, where both cognitive and affective factors influence their ability to engage effectively in English learning. However, many students face challenges, such as limited exposure to authentic language use, teacher-centered instruction, and low intrinsic motivation, which may reduce engagement and learning outcomes

(Badjie & Velankar 2023). In this regard, English learning should not only focus on general language instruction but also consider learners' actual needs, proficiency levels, and learning preferences. (Noviasmy, 2025) emphasize that needs-based English instruction can help learners engage with materials that are more relevant, practical, and meaningful to their learning context.

Technology-enhanced learning (TEL) has emerged as a promising strategy to address these challenges by offering interactive, flexible, and personalized learning environments (Malik, 2023). Mobile-assisted language learning is also

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relevant to this study because EFL learners generally show positive perceptions toward mobile applications as flexible and supportive tools for learning English (Darsih & Asikin, 2020). TEL encompasses e-learning platforms, mobile applications, and gamified learning, enabling students to interact with content, receive immediate feedback, and participate in collaborative activities. Gamification, as a core element of TEL, applies game-based elements such as points, badges, leaderboards, and levels to non-game learning contexts to increase motivation and engagement. A meta-analysis by (Sailer & Homner 2020) confirms that gamification can positively affect cognitive, motivational, and behavioral learning outcomes; therefore, the use of game-like elements in Wayground is theoretically relevant for English learning. Similarly (Huang et al., 2020) argue that gamification in educational settings can support learning outcomes, although its effectiveness depends on appropriate instructional design and classroom implementation. Prior research demonstrates that gamified learning platforms improve motivation, engagement, and satisfaction in EFL settings (Al-Khresheh 2025; Temel 2024)

Found that Kahoot Games Application improved eighth-grade students' vocabulary mastery, indicating that digital game-based tools can support vocabulary learning through interactive practice (Belinda, 2025). Reported that Kahoot! positively affects learning performance, classroom dynamics, students' attitudes, and anxiety, suggesting that game-based quiz platforms can create a more engaging classroom atmosphere (Wang & Hsu, 2020).

Empirical evidence from (Noviasmy et al., 2023), shows that Quizizz, as a gamified assessment tool in an EFL classroom, generated positive student responses, with 85% of students preferring Quizizz to paper-based assessment and Google Forms. This finding indicates that

interactive digital platforms can support students' engagement and satisfaction in language learning.

In addition, empirical evidence from Quizizz, a widely used gamified assessment tool, shows that interactive digital platforms can enhance student engagement, motivation, and confidence in EFL learning, providing a participatory and enjoyable experience (Noviasmy et al., 2023). A systematic review by (Lim & Yunus, 2021) also indicates that Quizizz is perceived by teachers as an effective, feasible, and motivating platform for English teaching and learning. These findings highlight the effectiveness of gamified and interactive applications in facilitating learning while supporting students' intrinsic motivation and metacognitive engagement.

The Wayground application is designed as an interactive, gamified tool for English learning, particularly to support vocabulary practice, quizzes, and classroom activities. Similar to findings on Quizizz, Wayground incorporates immediate feedback, gamification elements, and interactive tasks to foster engagement and motivation. According to the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use influence learners' attitudes and satisfaction toward technology-mediated instruction (Davis, 1989). Additionally, the Information Systems Success Model emphasizes the role of system quality, information quality, and service support in shaping user satisfaction (DeLone, W. H., & McLean, 2003).

Despite prior studies on gamification and TEL, limited research has explored students' subjective satisfaction with interactive platforms like Wayground in Indonesian junior high school EFL contexts. Most prior studies focus on motivation, engagement, or learning outcomes, rather than learners' personal satisfaction, which is crucial for evaluating educational quality

(Temel, 2024; Yu, 2023). The integration of Quizizz evidence further supports the rationale for using gamified, interactive applications in EFL instruction, highlighting the potential impact on engagement and enjoyment.

This study aims to investigate students' satisfaction in English learning using the Wayground application among eighth-grade students at MTs Nurul Ilmi Barukku, Indonesia. Specifically, it examines satisfaction across four dimensions: perceived usefulness, perceived ease of use, system quality, and learning experience. By providing empirical evidence, this research seeks to inform educators, instructional designers, and policymakers about effective ways to implement gamified applications in EFL classrooms, contributing to the growing literature on technology-enhanced, student-centered language learning

2. LITERATURE REVIEW

2.1 English Language Learning in the EFL Context

English as a Foreign Language (EFL) refers to the teaching and learning of English in countries where English is not the primary language of communication. In Indonesia, EFL learning is shaped by educational policies, cultural norms, and limited exposure to authentic English environments (Ajaka, 2019). Students often face challenges including insufficient instructional time, reliance on teacher-centered methods, and a lack of interactive practice opportunities, which can lead to low motivation, limited engagement, and suboptimal learning outcomes. Despite these challenges, Indonesian EFL students generally display positive attitudes toward learning English, but require dynamic and participatory approaches to achieve effective learning (Ajaka, 2019).

Active student engagement is essential for successful EFL learning.

Research indicates that students with higher engagement levels demonstrate improved academic performance, motivation, and autonomy. Traditional teacher-centered approaches often fail to sustain student involvement, prompting the adoption of innovative instructional strategies such as gamification, blended learning, and mobile-assisted language learning (Malik, 2023; Metwally, 2025). These methods aim to provide more interactive, meaningful, and engaging experiences, addressing gaps in conventional classroom practices.

2.2 Technology-Enhanced Learning and Gamification

Technology-enhanced learning (TEL) integrates digital tools into instruction to improve learning outcomes, motivation, and engagement (Al-Khalidi, 2021; Andoniou, 2024). TEL encompasses e-learning platforms, mobile applications, interactive simulations, and game-based learning, offering personalized, flexible, and self-paced learning experiences.

Gamification has been widely applied in language learning to enhance engagement, maintain interest, and improve knowledge retention (Al-Khreshah, 2025). Empirical evidence shows that gamified platforms positively affect motivation and satisfaction. For instance, (Yu, 2023) found that gamified vocabulary applications improved student satisfaction and perceived learning outcomes compared to traditional approaches. Similarly, (Temel et al., 2026), reported that gamification enhanced course satisfaction through mechanisms of autonomy, competence, and relatedness, supporting self-determination theory in educational contexts.

2.3 Students' Satisfaction in Technology-Mediated Learning

Students' satisfaction is a key indicator of learning quality, particularly in technology-mediated environments ((Thakur,

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2019; Ali et al., 2023). It reflects learners' perceptions of usefulness, ease of use, engagement, and overall enjoyment (Zhao, 2024). Satisfaction is strongly associated with motivation, active participation, and continued use of digital tools, which ultimately contribute to improved learning outcomes (Karoui, 2025).

The Technology Acceptance Model (TAM) provides a theoretical framework to understand how perceived usefulness and ease of use influence satisfaction (Davis, 1989; Wedari et al., 2022). According to TAM, learners who perceive a system as beneficial and easy to operate are more likely to develop positive attitudes and satisfaction toward the technology. Additionally, the Information Systems Success Model emphasizes system quality, information quality, and service support as critical factors in shaping user satisfaction (DeLone, W. H., & McLean, 2003). Applied to EFL learning, these models suggest that interactive, reliable, and well-supported applications enhance students' satisfaction.

Interactive learning applications provide structured engagement, immediate feedback, and opportunities for collaboration. Features such as quizzes, gamification elements, and real-time tracking help maintain students' interest and reinforce learning outcomes (Amador et al., 2016; Prabowo et al., 2019). In EFL classrooms, these tools support vocabulary, grammar, and comprehension skills in an interactive and enjoyable manner, especially for adolescent learners who benefit from multimodal learning experiences (Nadolny et al., 2020; Van Ginkel et al., 2020).

The Wayground application exemplifies an interactive gamified platform for EFL learning. It integrates quiz-based exercises, immediate feedback, and gamification elements, fostering motivation and engagement. Research shows that such platforms can support self-paced learning,

immediate correction, and collaborative problem-solving, leading to higher satisfaction (Alegre, 2023). Wayground addresses common challenges in Indonesian EFL classrooms, including limited exposure to authentic language use and minimal interactive opportunities.

3. METHODS

This study employed a descriptive quantitative research design to examine students' satisfaction in English language learning using the Wayground application at MTs Nurul Ilmi Barukku. A quantitative approach was deemed appropriate as it allows systematic collection and statistical analysis of numerical data to describe students' perceptions and satisfaction objectively (Creswell & Creswell, 2017). The study focused on measuring satisfaction across four dimensions: perceived usefulness, perceived ease of use, system quality, and learning experience, guided by the Technology Acceptance Model (TAM) and the Information Systems Success Model (DeLone & McLean, 2003).

The participants consisted of 33 eighth-grade students, representing the total population of the target class. The study employed a total sampling technique, including all members of the population in the sample (Sugiyono, 2019). This method ensures that data reflects the perspectives of the entire class without sampling bias. All participants had prior experience using the Wayground application during English learning sessions, enabling them to provide informed responses regarding the platform's usability, effectiveness, and overall satisfaction.

Data were collected through a structured questionnaire adapted from TAM and the Information Systems Success Model (Davis, 1989; DeLone, & McLean, 2003). The instrument comprised 20 items categorized under perceived usefulness, perceived ease of use, system quality,

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learning experience, overall satisfaction, continuance intention, and recommendation intention. Responses were recorded using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), a common approach to quantifying subjective perceptions in satisfaction research (Yu, 2023; Temel et al., 2026).

Prior to data collection, the questionnaire underwent validity and reliability testing. Validity was assessed using the Pearson Product-Moment correlation to ensure that each item accurately measured students' satisfaction. Items with correlation coefficients exceeding the critical value at a 0.05 significance level were deemed valid. Reliability was measured using Cronbach's Alpha, which yielded a coefficient of 0.956, indicating excellent internal consistency and confirming that the instrument reliably measures students' satisfaction (Sugiyono, 2019; Creswell & Creswell, 2017).

The questionnaire was administered in a supervised classroom setting after students completed English learning activities using the Wayground application. Clear instructions were provided to guide participants in responding to each item, ensuring they had sufficient experience with the platform to provide meaningful evaluations.

Descriptive statistical analysis, including mean scores and standard deviations, was applied to summarize students' satisfaction levels across the different dimensions. Higher mean scores indicate higher satisfaction, while standard deviations provide insight into the consistency of responses among participants

(Creswell & Creswell, 2017). This analysis allowed the identification of which aspects of the Wayground application most strongly contributed to students' satisfaction and provided empirical evidence to guide future implementation of gamified learning tools in EFL classrooms.

4. RESULTS AND DISCUSSION

The study aimed to examine students' satisfaction in English language learning using the Wayground application. Data were collected from 33 eighth-grade students at MTs Nurul Ilmi Barukku using a 20-item questionnaire measured on a five-point Likert scale. Overall, students reported high levels of satisfaction across all measured dimensions, including perceived usefulness, perceived ease of use, system quality, and learning experience. Descriptive analysis indicated that most students rated the application positively, demonstrating that interactive digital tools can enhance engagement, motivation, and learning outcomes in EFL classrooms.

4.1 Students' Satisfaction Scores

Table 1 presents the mean scores of students' responses to each item. Scores ranged from 3.0 to 5.0, with the highest ratings observed for items related to overall satisfaction and willingness to continue using Wayground. The aggregate mean total score was 86.2 out of 100, reflecting generally positive perceptions of the learning application. Among the dimensions, learning experience recorded the highest mean score (4.4), followed by perceived usefulness (4.5), continuance intention (4.5), recommendation intention (4.5), perceived ease of use (4.3), and system quality (4.2).

Table 1. Students' Satisfaction Scores toward Wayground Application

| Aspect | Item | Mean Score | Interpretation |
|-----------------------|--------|------------|----------------|
| Perceived Usefulness | Q1–Q4 | 4.5 | High |
| Perceived Ease of Use | Q5–Q8 | 4.3 | High |
| System Quality | Q9–Q10 | 4.2 | High |

| | | | |
|--------------------------|---------|-----|-----------|
| Learning Experience | Q11–Q14 | 4.4 | High |
| Overall Satisfaction | Q15–Q16 | 4.6 | Very High |
| Continuance Intention | Q17–Q18 | 4.5 | High |
| Recommendation Intention | Q19–Q20 | 4.5 | High |

4.2 Interpretation and Discussion

The findings indicate that students perceive Wayground as a valuable, easy-to-use, and engaging tool for English learning. Perceived usefulness scored high, demonstrating that students found the application effective in enhancing vocabulary retention, comprehension, and overall learning outcomes (Wedari et al., 2022). Students noted that the application facilitated repetitive practice and interactive engagement, addressing the limited opportunities for authentic English exposure common in Indonesian junior high school classrooms (Badjie & Velankar, 2023; Sujiati et al., 2023).

Perceived ease of use was also positively rated ($M = 4.3$), reflecting students' recognition of the intuitive interface, clear instructions, and simple navigation (Karoui, 2025; Wang & Hsu, 2020). This ease of use reduces cognitive load, enabling learners to focus on language content rather than system navigation, which is particularly important for students with varying digital literacy levels.

System quality contributed significantly to satisfaction, with scores ranging from 4.2 to 4.3. Students reported minimal technical issues, smooth operation, and reliable performance. These results align with the Information Systems Success Model, emphasizing that system quality, reliability, and stability are critical factors influencing user satisfaction in technology-mediated learning (DeLone, W. H., & McLean, 2003; Al-Fraihat et al., 2020).

Learning experience emerged as the most highly rated dimension ($M = 4.4$), highlighting the critical role of gamified

quizzes, interactive features, and immediate feedback in promoting engagement, enjoyment, and motivation (Rajavel & Kushalkar, 2014; Parusheva et al., 2024). Competitive and reward-based elements enhanced intrinsic motivation and a sense of accomplishment, consistent with self-determination theory, which emphasizes autonomy, competence, and relatedness as key drivers of motivation (Temel et al., 2026; (Al-Khresheh, 2025)). These results are reinforced by prior studies showing that gamified digital tools improve students' learning confidence, engagement, and willingness to continue using the platform (Noviasmy et al., 2023; Jaya et al., 2025).

Integrating TAM and the Information Systems Success Model provides a comprehensive framework to interpret these findings. High perceived usefulness and ease of use contributed to overall satisfaction, while system quality ensured uninterrupted, efficient learning experiences. This integration demonstrates that both psychological perceptions and technical functionality are essential determinants of learner satisfaction in EFL classrooms.

Although overall satisfaction was high, some participants reported lower ratings for complex navigation or highly competitive tasks, suggesting that instructional design and adaptive difficulty are essential considerations. Overemphasis on game mechanics without proper scaffolding may lead to superficial learning or stress for learners with diverse skill levels (Al-Khresheh, 2025).

The findings have several practical implications for educators, instructional designers, and policymakers. Prioritizing

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user-friendly interfaces, reliable system performance, and engaging gamified elements can enhance students' motivation, engagement, and satisfaction. Continuous monitoring and feedback are recommended to ensure that digital learning tools address diverse learner needs effectively. Overall, Wayground appears to be a highly effective application for junior high school EFL instruction, complementing traditional teaching methods and providing an interactive, student-centered learning environment.

5. CONCLUSION

The findings of this study indicate that the Wayground application serves as an effective digital learning platform for enhancing students' satisfaction in English language learning among eighth-grade learners at MTs Nurul Ilmi Barukku. Participants expressed consistently high levels of satisfaction across all evaluated dimensions, namely perceived usefulness, perceived ease of use, system quality, and overall learning experience. The application's gamified and interactive components including quiz-based activities, instant feedback mechanisms, and reward-oriented features were identified as the primary factors contributing to increased learner engagement, motivation, and favorable educational outcomes.

Furthermore, the results substantiate the growing body of evidence suggesting that technology-enhanced learning environments, when characterized by strong usability, system reliability, and meaningful interactivity, can effectively complement conventional EFL instructional practices while fostering a more student-centered learning experience. The study highlights the potential of interactive educational applications such as Wayground to facilitate deeper cognitive processing, strengthen vocabulary acquisition and retention, and

cultivate learners' intrinsic motivation toward English language learning.

From a practical perspective, the findings underscore the importance of integrating gamified learning technologies into classroom instruction through a balanced emphasis on technical performance and pedagogical interactivity. Educators are encouraged to systematically evaluate learners' perceptions and feedback to optimize instructional effectiveness and accommodate diverse learning preferences. In addition, educational policymakers and instructional designers may draw upon the insights generated by this study to develop and implement more effective technology-supported English language learning initiatives in comparable educational settings.

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7. REFERENCES

- Ajaka, L. (2019). EFL: An exploration of the novel aspects of learning and using English as a foreign language. *Centre for Applied Linguistics Research Journal*, 10. <https://doi.org/10.60149/WCAU2014>

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- Al-Fraihat, D., Joy, M., Masa'deh, R., & Sinclair, J. (2020). Evaluating e-learning systems success: An empirical study. *Computers in Human Behavior*, *102*, 67–86. <https://doi.org/10.1016/j.chb.2019.08.004>
- Al-Khalidi, I. (2021). Using the Triple E framework as an instructional design tool for the assessment of technology integration in a variety of TESOL contexts. *Asian ESP Journal*, *17*(2), 47–72.
- Al-Khresheh, M. H. (2025). The cognitive and motivational benefits of gamification in English language learning: A systematic review. *The Open Psychology Journal*, *18*. <https://doi.org/10.2174/0118743501359379250305083002>
- Alegre, E. M. (2023). Technology-driven education: Analyzing the synergy among innovation, motivation, and student engagement. *International Journal of Membrane Science and Technology*, *10*(2), 1477–1485. <https://doi.org/10.15379/ijmst.v10i2.1507>
- Ali, Q., Abbas, A., Raza, A., Khan, M. T. I., Zulfiqar, H., Iqbal, M. A., Nayak, R. K., & Alotaibi, B. A. (2023). Exploring students' perceived effectiveness of online education during the COVID-19 pandemic: Empirical analysis using structural equation modeling (SEM). *Behavioral Sciences*, *13*(7). <https://doi.org/10.3390/bs13070578>
- Amador, V. B., Broisin, J., Arteaga, J. M., & Mendoza, J. E. G. (2016). Extension of IEEE LOM standard for describing educational interactive application: An accessibility approach. *IEEE Latin America Transactions*, *14*(8), 3847–3855. <https://doi.org/10.1109/TLA.2016.7786372>
- Andoniou, C. (2024). Technology integration and digital transformation in post-COVID-19 hybrid education. In *Technical and Vocational Education and Training* (Vol. 38, pp. 303–315). Springer. https://doi.org/10.1007/978-981-99-6909-8_27
- Badjie, O., & Velankar, Y. (2023). Problem-based learning: A catalyst for teacher and student motivation in K–12 schools. In *2023 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE 2023)*. IEEE. <https://doi.org/10.1109/TALE56641.2023.10398301>
- Belinda. (2025). The use of Kahoot games application to improve vocabulary mastery of the eighth-grade students. *13*(1), 935–944.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.
- Darsih, E., & Asikin, N. A. (2020). Mobile-assisted language learning: EFL learners' perceptions toward the use of mobile applications in language learning. *English Review: Journal of English Education*, *8*(2). <https://doi.org/10.25134/erjee.v8i2.2999>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319–340. <https://doi.org/10.2307/249008>
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, *19*(4), 9–30. <https://doi.org/10.1080/07421222.2003.11045748>
- Huang, R., Ritzhaupt, A. D., Sommer, M., Zhu, J., Stephen, A., Valle, N., Hampton, J., & Li, J. (2020). The impact of gamification in educational settings on student learning outcomes: A meta-analysis. *Educational Technology Research*

- and Development*, 68(4), 1875–1901.
<https://doi.org/10.1007/s11423-020-09807-z>
- Jaya, A., Hartono, R., Wahyuni, S., & Yulianto, H. J. (2025). From silent to supreme: The transformative power of project-based learning on language learners. *Multidisciplinary Reviews*, 8(8), 2025258. <https://doi.org/10.31893/multirev.2025258>
- Karoui, C. (2025). Determinants of students' satisfaction using e-learning platforms: The technology acceptance model approach. *Journal of Ecohumanism*, 4(2), 2167–2188. <https://doi.org/10.62754/joe.v4i2.6614>
- Lim, T. M., & Yunus, M. M. (2021). Teachers' perception towards the use of Quizizz in the teaching and learning of English: A systematic review. *Sustainability*, 13(11), Article 6436. <https://doi.org/10.3390/su13116436>
- Malik, R. (2023). Impact of technology-based education on student learning outcomes and engagement. In *Proceedings of the 17th INDIACom: 2023 10th International Conference on Computing for Sustainable Global Development* (pp. 784–788).
- Metwally, A. A. (2025). Digital technology in EFL education: Students' emotional and cognitive reflections from Blackboard discussions. *International Journal of Information and Education Technology*, 15(9), 1939–1951. <https://doi.org/10.18178/ijiet.2025.15.9.2394>
- Nadolny, L., Valai, A., Cherrez, N. J., Elrick, D., Lovett, A., & Nowatzke, M. (2020). Examining the characteristics of game-based learning: A content analysis and design framework. *Computers & Education*, 156, Article 103936. <https://doi.org/10.1016/j.compedu.2020.103936>
- Noviasmy, Y. (2025). English language needs assessment for economics students: An ESP analysis. *Journal of English Language Teaching and Applied Linguistics*, 6(1), 140–155. <https://doi.org/10.56185/jelita.v6i1.860>
- Noviasmy, Y., Dalle, A., & Hasanah, N. (2023). Applying Quizizz application as an assessment tool. *Inspiring: English Education Journal*, 6(1), 12–22. <https://doi.org/10.35905/inspiring.v6i1.4835>
- Parusheva, S., Bankov, B., & Kasabova, G. (2024). Interactive tools in learning management systems: Trends in their use. In *World Conference on Internet of Things: Applications & Future* (pp. 411–422).
- Prabowo, A., Thohari, A. H., & Kurniawan, D. E. (2019). Development of interactive learning application for vocational high school. In *Proceedings of the 2019 2nd International Conference on Applied Engineering (ICAE 2019)*. IEEE. <https://doi.org/10.1109/ICAE47758.2019.9221674>
- Rajavel, D., & Kushalkar, R. (2014). Clicker: Device-independent student response system developed for classroom and remote learning to provide instant response and feedback. In *Proceedings of the IEEE 6th International Conference on Technology for Education (T4E 2014)* (pp. 62–65). IEEE. <https://doi.org/10.1109/T4E.2014.4>
- Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. *Educational Psychology Review*, 32(1), 77–112. <https://doi.org/10.1007/s10648-019-09498-w>
- Sugiyono. (2019). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Sujiati, R., Jaya, A., Rosmiyati, E., & Noviati. (2023). EFL teachers' attitudes and

- experiences on the implementation of multiliteracies. *Esteem Journal of English Education Study Programme*, 7(1), 85–96. <https://doi.org/10.31851/esteem.v7i1.12653>
- Temel, T. (2024). The effect of gamification with Web 2.0 tools on EFL learners' motivation and academic achievement in online learning environments. *SAGE Open*. <https://doi.org/10.1177/21582440241247928>
- Temel, T., Grubješić, I., Ivanjko, T., & Hajdek, M. (2026). Gamification and course satisfaction in English for specific purposes: A self-determination theory perspective. *Education Sciences*, 16(4), 629. <https://doi.org/10.3390/educsci16040629>
- Thakur, S. (2019). A study of student satisfaction in different universities covering the area of Delhi NCR. *International Journal of Scientific and Technology Research*, 8(11), 3289–3310.
- Van Ginkel, S., Ruiz, D., Mononen, A., Karaman, C., de Keijzer, A., & Sitthiworachart, J. (2020). The impact of computer-mediated immediate feedback on developing oral presentation skills: An exploratory study in virtual reality. *Journal of Computer Assisted Learning*, 36(3), 412–422. <https://doi.org/10.1111/jcal.12424>
- Wang, Y.-C., & Hsu, L. (2020). Shall we go to the MALL? Students' perceptions of a business English learning app. *International Journal of Information and Education Technology*, 10(2), 110–116. <https://doi.org/10.18178/ijiet.2020.10.2.1348>
- Wedari, L. K., Fatihah, A. N., & Rusmanto, T. (2022). Zoom application acceptance in online learning: An analysis with the technology acceptance model. *International Journal of Information and Education Technology*, 12(9), 821–830. <https://doi.org/10.18178/ijiet.2022.12.9.1690>
- Yu, Z. (2023). Learning outcomes, motivation, and satisfaction in gamified English vocabulary learning. *SAGE Open*. <https://doi.org/10.1177/21582440231158332>
- Zhao, H. (2024). Design of English viewing, listening, and speaking mobile teaching software based on an interactive digital media algorithm. *Journal of Intelligent & Fuzzy Systems*, 46(2), 3505–3515. <https://doi.org/10.3233/JIFS-233741>