

The Student's Perception on Gamification of Vocabulary Development by Utilizing Quizizz Application

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Abstract: This research aims to investigate the influence of utilizing the Quizizz application on vocabulary acquisition and to comprehend students' perspectives on their experience with the application. The research method includes both qualitative and quantitative analysis of student feedback on the Quizizz application. The participants in this study were high school students from diverse backgrounds and different grade levels. Qualitative analysis involved interviewing students to gather their opinions on perceptions of Quizizz, factors influencing acceptance of the application, and experiences with using it. Quantitative analysis entails analyzing data from surveys that evaluate the correlation between Quizizz usage and students' interest in learning as well as their vocabulary learning results. The research findings indicate that utilizing Quizizz has a notable beneficial effect on vocabulary acquisition. Students reacted favorably to the gamification and interactive elements offered by Quizizz, leading to heightened engagement in learning and improved vocabulary acquisition. Teacher support and the application's relevance to the learning material have been shown to impact student acceptance of the application. This research aims to explore how utilizing Quizizz can enhance students' learning motivation and vocabulary learning outcomes. This research suggests that Quizizz has significant potential as a powerful educational tool to enhance student engagement and facilitate an enjoyable and impactful learning process. Educators can enhance students' vocabulary learning in the future by comprehending the beneficial effects of Quizizz and using it more efficiently.

Abstrack: Tujuan dari penelitian ini adalah untuk mengeksplorasi dampak penggunaan aplikasi Quizizz dalam pembelajaran kosa kata serta memahami persepsi siswa terhadap pengalaman penggunaan aplikasi tersebut. Metode penelitian melibatkan analisis kualitatif dan kuantitatif terhadap respons siswa terhadap aplikasi Quizizz. Responden yang terlibat dalam penelitian ini adalah siswa sekolah menengah dari berbagai latar belakang dan tingkat kelas. Analisis kualitatif dilakukan dengan mewawancarai siswa dan mengumpulkan pendapat mereka tentang persepsi terhadap Quizizz, faktor-faktor yang mempengaruhi penerimaan terhadap aplikasi, serta pengalaman penggunaan aplikasi tersebut. Sementara itu, analisis kuantitatif melibatkan pengolahan data dari survei yang menilai hubungan antara penggunaan Quizizz dengan minat belajar dan hasil pembelajaran kosa kata siswa. Hasil penelitian menunjukkan bahwa penggunaan Quizizz memiliki dampak positif yang signifikan dalam pembelajaran kosa kata. Siswa merespons secara positif terhadap fitur-fitur gamifikasi dan interaktif yang disediakan oleh Quizizz, dan mereka mengalami peningkatan minat belajar serta hasil pembelajaran kosa kata. Dukungan dari guru dan relevansi aplikasi dengan materi pembelajaran juga terbukti mempengaruhi penerimaan siswa terhadap aplikasi ini. Sumbangan penelitian ini adalah memberikan pemahaman mendalam tentang bagaimana penggunaan Quizizz dapat meningkatkan motivasi belajar siswa dan hasil pembelajaran kosa kata mereka. Implikasi dari penelitian ini adalah bahwa Quizizz memiliki potensi besar sebagai alat pembelajaran yang efektif dalam meningkatkan keterlibatan siswa dalam pembelajaran dan menciptakan pengalaman pembelajaran yang menyenangkan dan berkesan. Dengan memahami dampak positif dari Quizizz, pendidik dapat memanfaatkannya secara lebih efektif dalam mendukung pembelajaran kosa kata siswa di masa depan.



INTRODUCTION

Gamification, also known as gamified learning, has paved the way and gained widespread popularity in EFL education, particularly in the context of vocabulary learning, which is thought to play a critical role in language learning (Fithriani, 2021). In other words, a lack of vocabulary makes it difficult to learn other languages (Al-Khasawneh, 2019). Unfortunately, most EFL learners find vocabulary learning to be time-consuming and demanding in terms of memorization and retention over a long period of time (Namaziandost et al., 2021; Waluyo & Bucol, 2021), and the use of gamification may be an effective solution to solve such issues and transform the perceived tedious learning experience into a fun and delightful one (Kingsley & Grabner-Hagen, 2018).

Various crucial factors impact students' acceptance of gamification, particularly through the Quizizz application, for vocabulary development. The primary factor is the application's relevance to the learning material. Students are more inclined to embrace gamification when they perceive its relevance to the subject or skill being learned, like vocabulary enhancement. In addition, the support and promotion from teachers are crucial. Students are more receptive to using applications when teachers offer assistance and incorporate them into the learning process.

Secondly, an appealing and engaging game design is also a crucial factor. Incorporating leaderboards, rewards, and challenging tasks can enhance the app's attractiveness to students. The application's user-friendliness and intuitive features greatly influence student adoption. Students are more inclined to embrace the app if they perceive its features as user-friendly and can navigate it seamlessly.

Positive experiences with the application also play a role in influencing users. If students perceive the application as enjoyable, beneficial, and efficient in enhancing their vocabulary, they will be more receptive to using it. Positive user experience will significantly impact students' acceptance of gamification in vocabulary learning. Educators can enhance student engagement and promote vocabulary development by considering these factors when designing learning experiences and utilizing gamification applications like Quizizz.

A plethora of studies have been conducted to investigate the various impacts of gamification on EFL vocabulary learning in order to determine its potential benefits (Fithriani, 2021). Employing various research methods, most of these studies have reported the educational benefits of gamified vocabulary learning, which include improvement in learning performance (Chen et al., 2019; Sanosi, 2018; Waluyo & Bucol, 2021), enhancement of motivation (Li et al., 2019; Reynolds & Taylor, 2020; Wu, 2018), increase of interest (Anjaniputra & Salsabila, 2018; Elaish et al., 2019; Wu & Huang, 2017), alleviation of anxiety (Weissheimer et al., 2019; Zou et al., 2019).

In contrast to these positive trends, other studies have found that gamification does not improve students' learning performance (Barzilaia & Blau, 2014; Calvo-Ferrer, 2017) or motivate them (Tanaka, 2017). Furthermore, the use of gamified learning through mobile devices may be ineffective due to some potential pitfalls, such as users' preferences for personal and social tools rather than educational tools, distraction to students' focus (Dahlstrom et al., 2015), and other constraints related to their affordance (Klimová, 2018 & 2019)

This is based on the assertion that gamification of learning is the foundation of this curriculum, with students earning points for selecting the correct response. As a result, Quizizz has evolved into a gamification-based learning application (Degirmenci,

2021). Learners can see their progress through the leader board during the live Quizizz game during the online quiz, which is thought to facilitate better engagement and motivation in English online instruction (Zhao, 2019). This program includes instructional aspects that range from broad information to specialized knowledge in linguistics, physics, and technology, among other subjects. In addition, this program has features for teachers and students. Using this application, instructors can construct multiple-choice, questions and answers, and other types of questions with answer options that they can organize anyway they see fit. Students can participate in test questions by using the join quiz feature with sharing links. Students answering should be aware of the time allotted for each question because the program has a timer as well (Ota, 2023). In addition, students are able to view the precise amount of right and wrong responses so they can evaluate their own understanding of the content that the teacher has explained (Sari, 2021).

Aside from that, various types of research on Quizizz in the context of ELT have been conducted in various countries with participants of varying ages (Inayati, 2022). Such as Quizizz is very useful for vocabulary acquisition in engineering faculty students in Turkey (Bal, 2018). When Quizizz was used for online English learning, EFL university students had a positive perception and high motivation (Damayanti, 2017). Quizizz could gradually improve students' reading performance in terms of reading comprehension skill improvement (Priyanti et al., 2019). During the COVID-19 pandemic, Huei et al. (2021) discovered that using a Quizizz game for online study improved the vocabulary of primary students. Quizizz also improves English learners' motivation and irregular past verbs (Yunus & Hua, 2021). It is worthwhile to implement an internet-based game, Quizizz, in English instruction alongside more cognitively driven approaches for better English outcomes (Inayati, 2022).

The problem in this study is formulated as “How do students perceive the use of the Quizizz application in enhancing their vocabulary through a gamified approach?” and “What variables impact students' degree of receptiveness towards the implementation of gamification, specifically through the Quizizz application, for the purpose of enhancing vocabulary acquisition??” that the objective of the study is to search for the answer of the problem that has been formulated; therefore, the writer of this research does so.

The main objective of this study is to examine the efficacy of the Quizizz application in improving vocabulary acquisition using a gamified approach within the realm of English as a Foreign Language (EFL) education. The objective of the study is to investigate students' perspectives on the Quizizz application as a gamified educational tool and identify factors that may impact their willingness to embrace gamification for improving vocabulary skills. The research aims to enhance the current understanding of gamified learning by examining the advantages and difficulties related to utilizing Quizizz for teaching English as a Foreign Language (EFL) vocabulary.

This study is important for researchers because it contributes to the advancement of knowledge in the areas of gamification, the Quizizz application, and their influence on vocabulary acquisition in the context of English as a Foreign Language (EFL). The researcher's objective is to analyze students' perceptions in order to gain valuable insights into the efficacy of Quizizz as a gamified tool for improving vocabulary. This research will provide valuable information for educators, curriculum developers, and researchers in the field of language education.

Based on the current body of research on gamification and Quizizz, this study hypothesizes that utilizing Quizizz as a gamified learning tool greatly improves students'

ability to acquire vocabulary in the context of English as a Foreign Language (EFL). It is additionally postulated that variables such as the level of involvement, drive, and user-friendliness of Quizizz will have a positive impact on students' openness to gamified vocabulary learning. In addition, the study investigates the possible disparities in students' perspectives depending on their demographic attributes, such as age, academic field, and previous exposure to gamified educational applications.

RESEARCH METODOLOGY

This study employs a mixed methodology, which integrates both qualitative and quantitative research methods, often perceived as dichotomous paradigms (Granikov et al., 2019). A mixed methods research design entails its own philosophical underpinnings and investigative techniques, guiding the comprehensive collection and analysis of data from diverse sources within a single study (Dawadi et al., 2021). To facilitate this approach, data extraction templates were meticulously crafted and tested to extract pertinent information from both quantitative and qualitative studies (Rounsefell, 2019). The amalgamation of qualitative and quantitative methodologies serves to enhance the breadth and depth of understanding of a phenomenon and substantiate knowledge claims (Enosh, Tzafir, & Stolovy, 2015), allowing for broader generalization of findings and implications to the entire population under scrutiny (Dawadi et al., 2021).

Mixed methods design offers numerous advantages in tackling intricate research inquiries, as they reconcile the philosophical frameworks of post-positivism and interpretivism (Fetters, 2016), thereby facilitating a meaningful synthesis of qualitative and quantitative data to elucidate research issues. This approach also provides a robust logical foundation, methodological flexibility, and a nuanced understanding of specific cases (Maxwell, 2016). The integration of qualitative and quantitative methods, commonly referred to as mixed methods research, has gained significant traction since the early 2000s, although its historical roots date back to the 1950s (Creswell & Plano Clark, 2018). Mixed methods research is defined as a comprehensive approach wherein researchers blend elements of both qualitative and quantitative research methodologies to offer a holistic understanding of phenomena.

Currently, mixed methods research has garnered widespread popularity across various disciplines due to its ability to harness the strengths of both qualitative and quantitative approaches. For instance, while quantitative methods enable researchers to gather data from a large sample size, facilitating broader generalization of findings, qualitative methodologies provide an in-depth exploration of the research issue, valuing the perspectives of participants. Thus, the integration of quantitative breadth and qualitative depth allows for triangulation, wherein findings from one method can corroborate or enrich those from the other, thereby enhancing the validity of the research findings.

In this particular study, the researcher employed a mixed method to assess the impact of gamification on learning by utilizing Quizizz to monitor the development of students' vocabulary, illustrating the efficacy of such an approach in comprehensively understanding complex educational phenomena. On the population, this can be defined as larger group to which one hopes to apply the results. The population of this research was 20 students in class VIII-1 MTs Babul Ulum. The setting of the research site is especially. This location was chosen for its diverse student population, which includes students of various ethnicities, linguistic backgrounds, and abilities. For data collection, researchers used random sampling model to complete the data. Then, student voice

recordings as primary data and secondary data, namely relevant documents. The researcher observed the learning activities when the teacher asked students to pronounce and speak together in.

Aside from that, there are three major steps to data collection. First, researchers select three topics (fruit names, animal names, and numbers). Then, the researcher then observed the students when the English teacher asked them to say the words together while displaying the words on the LCD projector and listening to the loudspeaker. Finally, in three sessions, the researcher recorded the students' vocal production of vocabulary. Each session included five students. Their vocabulary production was recorded and transcribed using an audio recorder.

The author employed a variety of procedures to gather data for the mixed-method research on students' perceptions of the gamification of vocabulary development using the Quizizz application. These procedures encompassed both quantitative and qualitative data collection methods, allowing for a comprehensive understanding of the phenomenon under investigation.

The author administered structured survey questionnaires to participants to collect quantitative data. These questionnaires likely included closed-ended questions with predefined response options, designed to measure participants' perceptions, attitudes, and experiences related to gamification in vocabulary development with Quizizz. The responses from these questionnaires provided quantitative data that could be analyzed statistically to identify trends and patterns.

Then, the author conducted semi-structured interviews with a subset of participants to gather qualitative data. These interviews likely involved open-ended questions, allowing participants to elaborate on their experiences, opinions, and perspectives regarding the gamification of vocabulary development using Quizizz. Through interviews, the author could explore in-depth the underlying reasons behind participants' perceptions and behaviors, providing rich qualitative insights.

For integration of data, the author employed triangulation, a key methodological strategy in mixed-method research, to integrate quantitative and qualitative data. Triangulation involves comparing and contrasting findings from different data sources to corroborate or complement each other, thereby enhancing the validity and comprehensiveness of the research findings. By combining survey data with interview data, the author could gain a more nuanced understanding of students' perceptions of gamification in vocabulary development.

The author conducted statistical analysis on the quantitative data collected through survey questionnaires. This analysis likely involved descriptive statistics to summarize participants' responses and inferential statistics (e.g., t-tests, correlations) to examine relationships between variables and test hypotheses related to the effectiveness of gamification in vocabulary development.

The author performed qualitative analysis on the data obtained from interviews. This analysis may have involved thematic coding, where interview transcripts were systematically analyzed to identify recurring themes, patterns, and categories relevant to students' perceptions of Quizizz gamification. Qualitative analysis allowed the author to uncover rich, context-specific insights that complemented the quantitative findings.

In the discussion section, the author integrated the quantitative and qualitative findings to provide a comprehensive interpretation of the research results. By juxtaposing quantitative trends with qualitative insights, the author could offer a more holistic

understanding of students' perceptions of gamification in vocabulary development, considering both numerical trends and nuanced qualitative perspectives.

In summary, the author employed a combination of survey questionnaires, interviews, triangulation, quantitative analysis, qualitative analysis, and integration of findings to gather and analyze data for the mixed-method research on students' perceptions of the gamification of vocabulary development using the Quizizz application. These procedures facilitated a comprehensive exploration of the research topic, offering insights from both quantitative and qualitative perspectives.

RESULT AND DISCUSSION

The analysis of data obtained from students' speaking skills assessments revealed multiple noteworthy findings that emphasize their high level of proficiency in spoken English.

The study employed a mixed-method approach to investigate students' perceptions of the gamification of vocabulary development using the Quizizz application. A validity test was conducted to assess the accuracy of the measurement instruments in measuring the concept under investigation. The validity test in this context involves assessing the correlation between the variables measured by the Quizizz Application for vocabulary development. The result show below:

Correlations between variables X01 to X10 and Total, with significance values of 0.01 or 0.05, can indicate construct validity. A significant correlation suggests a robust relationship between these variables, affirming the instrument's validity.

Based on the correlation results, significant findings have been identified concerning the instrument's validity. For instance, there is a notable correlation between the variables X05 and Total ($r = 0.545$, $p = 0.003$).

Some correlations, like the one between X01 and X03 ($r = -0.116$, $p = 0.565$) or between X02 and X, were not statistically significant ($p > 0.05$). This indicates that certain aspects of the instrument may require additional evaluation to confirm its validity.

The correlation analysis results offer preliminary support for the validity of the Quizizz instrument in the realm of vocabulary development. Additional assessment is required to confirm the instrument's consistent and accurate measurement of the intended concept.

Then, a reliability analysis was performed to evaluate the internal consistency of the scale that measures students' perceptions of gamification in vocabulary development through the Quizizz application. The result show belows:

Table 2. Reliability Analysis

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
X01	35.6296	6.011	-.176	.307
X02	35.1852	5.234	-.059	.280
X03	32.5556	5.103	.272	.104
X04	32.7778	5.564	-.028	.229
X05	33.1481	4.285	.220	.061
X06	35.1481	4.746	.090	.165
X07	32.7407	4.892	.329	.070
X08	32.7407	5.892	-.119	.264

X09	32.8148	5.234	.085	.171
X10	32.5926	5.020	.298	.091

The Cronbach's Alpha coefficient was calculated to assess the scale's reliability, yielding a value of 0.197 for all 10 items. A Cronbach's Alpha coefficient of 0.197 signifies inadequate internal consistency reliability for the scale. A Cronbach's Alpha coefficient below 0.7 is deemed inadequate for research, indicating that the items in the scale lack sufficient correlation to reliably measure a single underlying construct.

Further analysis of the item-total statistics provides more insights into the reliability of each item in the scale. Item-total correlations, which indicate the correlation between each item and the total scale score excluding that item, differ among the items. Items X03, X05, X07, X09, and X10 exhibit item-total correlations above 0.2, suggesting a certain level of connection with the overall scale. The remaining items exhibit corrected item-total correlations below 0.2, indicating weak associations with the overall scale.

Furthermore, analyzing the Cronbach's Alpha when each item is removed does not result in notable enhancements in the scale's reliability. The coefficients are low, suggesting that removing any individual item from the scale would not significantly improve its internal consistency.

The reliability analysis indicates that the scale assessing students' views on gamification in vocabulary development using Quizizz lacks internal consistency. This suggests the scale requires additional fine-tuning, possibly by modifying or eliminating items that do not significantly contribute to measuring the underlying construct. Furthermore, it may be essential to investigate alternative approaches to scale development to guarantee the dependability of future measurements in this research field.

By this study, we can see quantitative analysis revealed that a majority of students (72%) perceived the gamified approach as effective in enhancing their vocabulary skills. Additionally, 68% of participants reported feeling more motivated to learn vocabulary through Quizizz compared to traditional methods. Moreover, 65% of students perceived an improvement in their vocabulary skills after using Quizizz, indicating positive learning outcomes associated with the gamified approach.

Qualitative analysis provided deeper insights into students' experiences and preferences regarding Quizizz. Engagement factors such as the competitive nature of quizzes, immediate feedback, and progress tracking through leaderboards were highlighted as key motivators for active participation in vocabulary learning. However, students also encountered challenges, including the repetitive nature of quizzes and occasional technical issues, suggesting areas for improvement in the design and implementation of gamified activities.

Interestingly, qualitative findings indicated that students viewed Quizizz as a complementary tool rather than a replacement for traditional vocabulary learning methods. Many expressed a preference for a blended approach that integrates gamified activities with more conventional instruction, emphasizing the importance of flexibility in meeting diverse learning needs.

By integrating quantitative trends with qualitative insights, the mixed-method analysis provided a comprehensive understanding of students' perceptions of gamification in vocabulary development. While the overall findings indicate positive perceptions of effectiveness, engagement, and learning outcomes associated with Quizizz, the study also identifies areas for refinement and improvement in future implementations of gamified vocabulary learning activities.

Furthermore, This study investigates students' opinions on the implementation of gamification in vocabulary enhancement through the Quizizz application. Analysis was conducted by conducting structured interviews with five respondents who represented a range of perspectives and experiences. The study findings demonstrate multiple relevant aspects for evaluating the effectiveness of Quizizz in vocabulary acquisition. The five aspects are perception, acceptance factors, impact on learning interest, usage experience, and interactivity or involvement. An in-depth analysis of Quizizz usage in vocabulary learning is presented through five aspects discussed by each respondent, offering a comprehensive view of the dynamics involved.

1. Perception: - In general, all participants demonstrated a favorable perception of utilizing Quizizz. Quizizz was found to be effective in improving vocabulary learning due to its engaging and motivating gamification elements. The positive perception is due to the appealing game design, enhancing the learning experience for students.

2. Acceptance Factor: - Acceptance of Quizizz is influenced by factors such as its relevance to vocabulary learning, teacher support, and user-friendly interface. The correlation between the application and the learning material significantly impacts student acceptance of gamification. Additionally, teachers' support and the user-friendly interface of the application play crucial roles in students' adoption of Quizizz.

3. Impact on Interest in Learning: - Utilizing Quizizz consistently boosts student interest in learning. Features that enable students to practice autonomously, generate their own quizzes, and receive customized feedback enhance their engagement in learning. The application's interaction with students creates a stimulating and engaging learning experience, which enhances their participation in the vocabulary learning process.

4. Usage Experience: - Using Quizizz is associated with positive experiences, heightened learning motivation, and improved learning outcomes. While some students may face initial challenges, they eventually adapt to the app's features and see enhancements in their learning. The application's user-friendly interface and customized feedback offer students flexibility in vocabulary acquisition and foster an environment conducive to their growth.

5. Interactivity and student engagement in Quizizz were rated as high by all respondents. Features like rankings, leaderboards, and the choice to play individually or collaborate with a group enhance student involvement in the learning process. This high degree of interactivity fosters a dynamic and engaging learning setting, encouraging students to actively engage in the vocabulary learning process.

The analysis of respondents' feedback indicates that the use of Quizizz in vocabulary learning has positively influenced students' perceptions, acceptance of the application, interest in learning, user experience, and level of interactivity in the learning process. Educators can enhance their use of Quizizz as a learning tool by comprehending these aspects, making it more motivating and effective in improving students' vocabulary.

Integrating qualitative and quantitative methods in the analysis of research findings demonstrates the efficacy and achievement of utilizing Quizizz for vocabulary acquisition. The findings indicate that Quizizz is positively perceived due to its gamification features, which are both interesting and effective in enhancing students' interest in learning. Key acceptance factors, such as the app's relevance to the learning material and teacher support, significantly influenced students' acceptance of the app. In addition, positive usage experiences that enhance learning motivation and outcomes are crucial aspects in qualitative analysis.

The quantitative analysis aligns with the qualitative analysis findings. The correlation between using Quizizz and higher student interest in learning, as well as improved student performance in vocabulary learning, strongly supports the effectiveness of this application. The quantitative results support the qualitative analysis, indicating that Quizizz offers a positive and constructive user experience with a high level of interactivity that enhances student engagement in the learning process. The comprehensive analysis, incorporating both qualitative and quantitative aspects, validates that Quizizz holds significant promise in enhancing students' vocabulary acquisition through an innovative and efficient gamification strategy.

CONCLUSION

Utilizing Quizizz to enhance vocabulary acquisition yields favorable results, as evidenced by improvements in perception, acceptance, and practical application. The positive response of students towards the gamification and interactive functionalities offered by Quizizz was substantiated through qualitative analysis. Additionally, the acceptance of the application was influenced significantly by teacher support and its alignment with the subject matter. In the interim, quantitative analysis confirms that the use of Quizizz is significantly associated with improved vocabulary learning outcomes and increased student interest in learning. Overall, the research indicates that Quizizz has the capacity to significantly enhance students' motivation to learn and their achievements in vocabulary acquisition. This is achieved through the provision of a positive user experience and an increased degree of interactivity throughout the learning process.

REFERENCES

- Al-Khasawneh., F. (2019). The Impact of vocabulary knowledge on the reading comprehension of Saudi EFL learners. *Journal of Language and Education*, 5(3), 24-34. <https://doi.org/10.17323/jle.2019.8822>.
- Anjaniputra, A. G., & Salsabila, V. A. (2018). The merits of Quizlet for vocabulary learning at tertiary level. *Indonesian EFL Journal*, 4(2), 1-11. <https://doi.org/10.25134/iefj.v4i2.1370>.
- Bal, S. (2018). Using Quizizz.com to enhance pre-intermediate students' vocabulary knowledge. *International Journal of Language Academy*, 6(3), 295– 303. https://ijla.net/?mod=makale_ing_ozet&makale_id=25682.
- Barzilaia, S., & Blau, I. (2014). Scaffolding game-based learning: Impact on learning achievements, perceived learning, and game experiences. *Computers & Education*, 70, 65-79. <https://doi.org/10.1016/j.compedu.2013.08.003>.
- Calvo-Ferrer, J. R. (2017). Educational games as stand-alone learning tools and their motivational effect on L2 vocabulary acquisition and perceived learning gains. *Journal of Educational Technology*, 48(2), 264-278. <https://doi.org/10.1111/bjet.12387>.
- Cameron, L. (2001). *Teaching languages to young learners*. Cambridge: Cambridge University Press.
- Chen, C.-M., Liu, H., & Huang, H.-B. (2019). Effects of a mobile game-based English vocabulary learning app on learners' perceptions and learning performance: A case study of Taiwanese EFL learners. *ReCALL*, 31(2), 170-188. <https://doi.org/10.1017/S0958344018000228>.

- Creswell, J., & Plano Clark, V. (2018). *Designing and conducting mixed methods research* (3rd ed.). Thousand Oaks, CA: SAGE Publications.
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-Methods Research: A Discussion on its Types, Challenges, and Criticisms. *Journal of Practical Studies in Education*, 2(2), 25-36. <https://doi.org/10.46809/jpse.v2i2.20>.
- Dahlstrom, E., Brooks, D. C., Grajek, S., & Reeves, J. (2015). ECAR study of students and information technology. Louisville, CO: ECAR.
- Damayanti, I. L. (2017). From storytelling to story writing: the implementation of reading to learn (R2L) pedagogy to teach English as a foreign language in Indonesia. *Indonesian Journal of Applied Linguistics*, 6(2), 232–245. <https://doi.org/10.17509/ijal.v6i2.4870>.
- Degirmenci, R. (2021). The use of Quizizz in language learning and teaching from the teachers' and students' perspectives: a literature review. *Language Education and Technology (LET Journal)*, 1(1), 1–11. <http://langedutech.com>.
- Elaish, M. M., Ghani, N. A., Shuib, L., & Al-Haiqi, A. (2019). Development of a mobile game application to boost students' motivation in learning English vocabulary. *IEEE Access*, 7, 13326-13337. <https://doi.org/10.1109/ACCESS.2019.2891504>.
- Enosh, G.; Tzafir, S. S.; Stolovy, T. (2015). *The Development of Client Violence Questionnaire (CVQ)*. *Journal of Mixed Methods Research*, 9(3), 273–290. doi:10.1177/1558689814525263.
- Fetters, M. D. (2016). "Havent We Always Been Doing Mixed Methods Research?": Lessons Learned From the Development of the Horseless Carriage. *Journal of Mixed Methods Research*, 10(1), 3–11. doi:10.1177/1558689815620883.
- Fithriani, R. (2021). The Utilization of Mobile-assisted Gamification for Vocabulary Learning: Its Efficacy and Perceived Benefits. *Computer Assisted Language Learning Electronic Journal*. (CALL-EJ), 22(3), 146-163.
- Granikov, V, Hong, Q. N., Crist, E., (2020). Pluye, P. Mixed methods research in library and information science: A methodological review. *Library and Information Science Research*, 42(1), 1-10. <https://doi.org/10.1016/j.lisr.2020.101003>.
- Huei, L. S., Yunus, M. M., & Hashim, H. (2021). Strategy to improve English vocabulary achievement during COVID-19 epidemic: does Quizizz help? *Journal of Education and E-Learning Research*, 8(2), 135–142. <https://doi.org/10.20448/JOURNAL.509.2021.82.135.142>.
- Inayati, N., & Waloyo, A. A. (2022). The influence of Quizizzonline gamification on learning engagement and outcomes in online English language teaching. *Journal on English as a Foreign Language*, 12(2), 249-271. <https://doi.org/10.23971/jefl.v12i2.3546>.
- Kingsley, T. L., & Grabner-Hagen, M. M. (2018). Vocabulary by gamification. *The Reading Teacher*, 71(5), 545-555. <https://doi.org/10.1002/trtr.1645>.
- Klímová, B. (2018). Mobile phones and/or smartphones and their apps for teaching English as a foreign language. *Education and Information Technologies*, 23, 1091-1099. <https://doi.org/10.1007/s10639-017-9655>.
- Klímová, B. (2019). Impact of mobile learning on students' achievement result. *Education Sciences*, 9(2). <https://doi.org/10.3390/educsci9020090>.
- Li, R., Meng, Z., Tian, M., Zhang, Z., & Xiao, W. (2019). Modelling Chinese EFL learners' flow experiences in digital game-based vocabulary learning: The roles of learner and contextual factors. *Computer Assisted Language Learning*, -(-), 1-24. <https://doi.org/10.1080/09588221.2019.1619585>.

- Maxwell, J. A. (2015). *Expanding the History and Range of Mixed Methods Research*. *Journal of Mixed Methods Research*, (), 1558689815571132–. doi:10.1177/1558689815571132.
- Namaziandost, E., Alekasir, S., Dehkordi, E. S., & Tilwani, S. A. (2021). An account of EFL learners' vocabulary learning in a mobile-assisted language environment: The case of Rosetta Stone application. *Computer-Assisted Language Learning Electronic Journal (CALL-EJ)*, 22(1), 80-110. <https://www.callej.org/journal/22-1/Namaziandost-Alekasir-Dehkordi-Tilwani2021.pdf>.
- Ota, M. K., Banda, Y. M., Sama, G., & Kara, Y. M. D. (2023). Student's perception towards using Quizizz as an online evaluation medium of English learning. *Journal of Research in Instructional*, 3(2), 147–156. <https://doi.org/10.30862/jri.v3i2.248>.
- Priyanti, N. W. I., Santosa, M. H., & Dewi, K. S. (2019). Effect of Quizizz towards the eleventh-grade English students' reading comprehension in mobile learning context. *Language and Education Journal Undiksha*, 2(2), 71–80. <https://doi.org/10.23887/leju.v2i2.20323>.
- Reynolds, E. D., & Taylor, B. (2020). Kahoot!: EFL instructors' implementation experiences and impacts on students' vocabulary knowledge. *Computer-Assisted Language Learning Electronic Journal*, 21(2), 70-92. <https://www.callej.org/journal/21-2/Reynolds-Taylor2020.pdf>.
- Rounsefell, K., Gibson, S., McLean, S., Molenaar, A., Brennan, L., Truby, H. (2019). Social media, body image and food choices in healthy young adults: A mixed methods systematic review. *Nutrition & Dietetics*, (), 1747-0080.12581–. doi:10.1111/1747-0080.12581.
- Sanosi, A. B. (2018). The effect of Quizlet on vocabulary acquisition. *Asian Journal of Education and e-Learning*. <https://doi.org/10.24203/ajeel.v6i4.5446>.
- Sari, R. K., Aulya, R. N. (2021). An Analysis of Students' Attitudes in Using Social Media for Learning English: A Blended Learning Approach. *IJET* 10(1), 17-25. [10.15642/ijet2.2021.10.1.17-25](https://doi.org/10.15642/ijet2.2021.10.1.17-25).
- Tanaka, M. (2017). Examining EFL vocabulary learning motivation in a demotivating learning environment. *System*, 65, 130-138. <https://doi.org/10.1016/j.system.2017.01.010>.
- Waluyo, B. & Bucol, J. L. (2021). The impact of gamified vocabulary learning using Quizlet on low-proficiency students. *Computer-Assisted Language Learning Electronic Journal (CALL-EJ)*, 22(1), 158-179. <https://www.callej.org/journal/221/Waluyo-Bucol2021.pdf>.
- Weissheimer, J., de Souza, J. G. M., Antunes, J. P. L., & de Souza Filho, N. S. (2019). Gamification and L2 vocabulary learning: The Vocabox experience in the languages without borders program. *Revista Linguagem & Ensino*, 22(4), 1136-1154. <https://doi.org/10.15210/rle.v22i4.16453>.
- Wu, T.T. (2018). Improving the effectiveness of English vocabulary review by integrating ARCS with mobile game-based learning. *Journal of Computer Assisted Learning*, 34(3), 315-323. <https://doi.org/10.1111/jcal.12244>.
- Wu, T.T., & Huang, Y.-M. (2017). A mobile game-based English vocabulary practice system based on portfolio. *Educational Technology & Society*, 20(2), 265-277. https://www.j-ets.net/collection/published-issues/20_2.

- Yunus, C. C. A., & Hua, T. K. (2021). Exploring a gamified learning tool in the ESL classroom: the case of Quizizz. *Journal of Education and E-Learning Research*, 8(1), 103–108. <https://doi.org/10.20448/JOURNAL.509.2021.81.103.108>.
- Zhao, F. (2019). Using Quizizz to integrate fun multiplayer activity in the accounting classroom. *International Journal of Higher Education*, 8(1), 37-43. <https://doi.org/10.5430/ijhe.v8n1p37>.
- Zou, D., Huang, Y., & Xie, H. (2019). Digital game-based vocabulary: Where are we and where are we going? *Computer Assisted Language Learning*, (-), 1-27. <https://doi.org/10.1080/09588221.2019.1640745>