English Learning Strategies Integrated with Technology in improving the Learning Outcomes of Junior High School Students in Palu City

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Abstract: This study investigates how English language learning strategies integrated with technology in improving the learning outcomes of junior high school students in Palu City. The research employs a mixed-methods approach, combining quantitative survey, pretest and posttest, qualitative interview with the teacher, and classroom observation. The population of this research are 150 students from three schools participated, providing data on their perceptions of technology in English learning and their proficiency in reading, writing, speaking, and listening skills. Quantitative analysis revealed significant improvements in all tested skills following the implementation of technology-integrated strategies, supported by statistical findings ($p < 0.05$). Survey indicated positive student attitudes towards technology, citing increased understanding and motivation in learning English. However, challenges such as limited digital access outside school hours were identified. Qualitative insight from teacher interview highlighted benefits like enhanced student agreement and also underscored the need for ongoing professional development with equitable access to digital resources. Classroom observation illustrated varied implementation and student engagement levels, emphasizing the importance of pedagogical alignment and effective with technology in language teaching. This study contributes to the discourse on technology-enhanced education in diverse contexts, offering practical recommendations in improving English language learning outcomes in junior high schools students in Palu city.

Keywords: English; Learning strategy; Technology

Abstrak: Penelitian ini menyelidiki bagaimana pengaruh strategi pembelajaran bahasa Inggris terintegrasi dengan teknologi terhadap hasil belajar siswa SMP di Kota Palu. Penelitian ini menggunakan pendekatan metode campuran, menggabungkan survei kuantitatif, tes sebelum dan sesudah, wawancara kualitatif dengan guru, dan observasi kelas. Populasi dalam penelitian ini sebanyak 150 siswa dari tiga sekolah yang berpartisipasi, memberikan data tentang persepsi mereka terhadap teknologi dalam pembelajaran bahasa Inggris dan kemahiran mereka dalam keterampilan membaca, menulis, berbicara, dan mendengarkan. Analisis kuantitatif menunjukkan peningkatan yang signifikan pada semua keterampilan yang diuji setelah penerapan strategi terintegrasi teknologi, didukung oleh temuan statistik ($p < 0,05$). Survei menunjukkan sikap siswa yang positif terhadap teknologi, dengan peningkatan pemahaman, motivasi, dan kesenangan dalam belajar bahasa Inggris. Namun, tantangan seperti terbatasnya akses digital di luar jam sekolah telah teridentifikasi. Wawasan kualitatif dari wawancara guru menyoroti manfaat seperti peningkatan keterlibatan siswa, namun juga menggarisbawahi perlunya pengembangan profesional berkelanjutan dan akses yang adil terhadap sumber daya digital. Observasi di kelas menggambarkan beragam implementasi dan tingkat keterlibatan siswa, menekankan pentingnya keselarasan pedagogi dan penggunaan teknologi secara efektif dalam pengajaran bahasa. Studi ini berkontribusi

pada wacana pendidikan berbasis teknologi dalam beragam konteks, menawarkan rekomendasi praktis untuk meningkatkan hasil pembelajaran bahasa Inggris di SMP Kota Palu.

Kata Kunci: Bahasa Inggris; Strategi belajar; Teknologi

INTRODUCTION

English language has been a significant subject to be taught in schools. It plays an important role in the process of globalization that has made it a necessity for students to master English as a tool for international communication and sharing information (Isadaud et al., 2022). This c junior high school students directed to the acquisition of English communicative competence, which includes English listening, speaking, reading, and writing skills. To reach the worthy and successfully use that technology, it is important to have conversant with language skill. Unfortunately, the Junior High School students in Palu City have limitations in learning. Based on interviews with English subjects teachers and analysis of English subject exam results, these limitations occur at each stage of skill achievement.

Over the past two decades, using technology in language learning has been identified as a transformational tool in accelerating and enhancing language learning practices. It allows learners to access more authentic resources, supports learning processes, and motivates the language learners towards meaningful learning. Along with the latest technological genius, digital games have emerged as a promising and efficient technology tool in language education. Digital games contain the ultimate form of entertainment that many learners desire, contributing to their increased motivation to learn. A number of studies have reported captivating, rewarding, and rich game environments where virtual experiences involve players and keep them focused on the language learning process (Saleem et al., 2021). In response, asking teachers to integrate technology, namely digital games, into language learning has consequently become an issue worthy of investigation. However, in Palu, there is a lack of research on whether an integrated technology English language learning strategy, in which digital games are integrated into the curriculum and instruction, can improve junior high school students' English language acquisition. This study seeks to address this gap in the literature.

Teaching English as a foreign language in Indonesia is considered to be a significant challenge. In the last decade, English teaching for EFL learners has been increasingly focused on enabling a communication-based competence which is aimed at students achieving proficiency in the four skills (speaking, listening, reading, and writing) through meaningful learning. Similar to other EFL students in Indonesia, junior high school students in Palu have also faced challenges in mastering the English language. They are typically passive in learning and educators have found that their students' achievement in English for the four skills is low. To address these issues, teachers are expected to employ various learning strategies to ensure that students can actively engage in diverse learning processes. However, the educators' knowledge and implementation of such strategies is often still limited.

LITERATURE REVIEW

The integration of technology in English language learning has been a prominent area of research, particularly in enhancing learning outcomes among junior high school students. In Palu City, this approach can offer significant benefits, considering the diverse linguistic background and the necessity for improved English proficiency. This literature review explores various English language learning strategies integrated with technology and their impact on junior high school students' learning outcomes.

The theoretical underpinning of this study is based on constructivist learning theory, which emphasizes the importance of active student engagement and interaction with content through technology. Vygotsky's Social Development Theory also plays a crucial role, highlighting the social context of learning where technology serves as a mediator in language acquisition.

Technology-Enhanced Language Learning (TELL) encompasses a wide range of digital tools and resources that facilitate language learning. According to Chapelle (2001), TELL provides opportunities for authentic language use, immediate feedback, and personalized learning experiences. In the context of junior high school students, these features are crucial for maintaining engagement and improving proficiency.

Blended learning combines traditional face-to-face instruction with online learning activities. Studies by Graham (2006) indicate that blended learning environments enhance student motivation and provide flexibility in accessing learning materials. For junior high school students in Palu, this approach can cater to different learning paces and styles. Incorporating game elements in language learning, such as points, badges, and leaderboards, has been shown to increase student motivation and engagement. Deterding et al., (2011) suggest that gamification can make learning more interactive and enjoyable, leading to better retention and application of language skills.

Mobile devices offer a convenient and accessible platform for language learning. Kukulska-Hulme & Shield, (2008) highlight the benefits of MALL, including the ability to learn anytime and anywhere, personalized learning paths, and interactive language practice. In Palu, where mobile phone usage is prevalent, MALL can be an effective strategy. The flipped classroom model, where students access instructional content online before class and engage in interactive activities during class, has shown positive outcomes in language learning. Bergmann & Sams (2012) found that this approach promotes active learning and allows for more personalized teacher support.

Research indicates that integrating technology with language learning strategies significantly improves learning outcomes. For instance, a study by Liu et al., (2014) found that students using technology-enhanced learning tools demonstrated higher language proficiency and better academic performance compared to those in traditional learning environments. Additionally, a meta-analysis by Tamim et al., (2011) revealed that the use of educational technology is associated with moderate to significant positive effects on student achievement. Despite the potential benefits, integrating technology in language learning also presents challenges. Issues such as digital literacy, access to reliable internet, and the need for teacher training are critical factors to consider. Furthermore, Ertmer & Ottenbreit-

Leftwich (2010) emphasize the importance of aligning technological tools with pedagogical goals to maximize their effectiveness.

The integration of technology in English language learning offers promising strategies to enhance the learning outcomes of junior high school students in Palu City. Blended learning, gamification, mobile-assisted language learning, and the flipped classroom model are effective approaches that cater to diverse learning needs and preferences. However, addressing challenges related to access, training, and pedagogical alignment is essential for successful implementation. Future research should focus on longitudinal studies to assess the long-term impact of these strategies on language proficiency and academic achievement.

Despite the growing body of research on the integration of technology in language learning, there is limited empirical evidence on the specific impacts of such integration on junior high school students in Palu City. While studies have shown the general benefits of technology-enhanced learning, the unique educational, cultural, and technological contexts of Palu City remain underexplored. There is a need for focused research that addresses how specific English language learning strategies, when combined with technology, affect the learning outcomes of students in this particular region.

This study aims to fill the existing research gap by providing a comprehensive analysis of the effectiveness of integrating technology with English language learning strategies specifically for junior high school students in Palu City. The novelty of this research lies in its context-specific approach, considering the local educational environment and the technological

infrastructure available in Palu. By doing so, it will offer tailored insights and practical recommendations for educators and policymakers in the region, contributing to a more localized understanding of technology-enhanced language learning.

This research aims to answer this question, how English language learning strategies integrated with technology impact the learning outcomes of junior high school students in Palu City?

METHOD

This study utilizes a mixed-methods approach, combining quantitative and qualitative data collection methods to provide a comprehensive understanding of the impact of technology-integrated English language learning strategies on the learning outcomes of junior high school students in Palu City. This approach allows for the triangulation of data, enhancing the validity and reliability of the findings (Creswell & Plano Clark, 2018).

The study involves junior high school students from three different schools in Palu City. A total of 150 students has been selected through stratified random sampling to ensure a representative sample across different academic levels and socio-economic backgrounds. Additionally, 10 English language teachers from these schools has been interviewed to gather qualitative insights.

Research Instruments

To investigate the impact of English language learning strategies integrated with technology on the learning outcomes of junior high school students in Palu City,

a combination of quantitative and qualitative instruments has been employed. The primary quantitative instrument has been structured questionnaire designed to measure students' perceptions and attitudes towards the use of technology in their English language learning. The questionnaire includes a series of Likert-scale items, ranging from "strongly disagree" to "strongly agree," to assess various aspects such as student engagement, motivation, and perceived effectiveness of the technology-enhanced learning strategies. Additionally, open-ended questions has been incorporated to capture more nuanced insights and specific feedback from the students.

To complement the questionnaire, standardized pre and posttest has been administered to objectively measure the students' English language proficiency across the four key skills: reading, writing, speaking, and listening. These tests signed to align with the curriculum and provide a comprehensive assessment of the students' progress over the course of the study.

Furthermore, semi-structured interviews with English language teachers has been conducted to gather in-depth qualitative data on their experiences, challenges, and observations related to the integration of technology in their teaching practices. Classroom observations using a systematic observation checklist also be conducted to directly observe the implementation of the technology-integrated strategies and to gauge student engagement and interaction during lessons. Together, these instruments provide a robust and multifaceted understanding of the effectiveness of integrating technology with English language learning strategies in improving student outcomes in Palu City.

Data Collection Techniques

The data collection for this study on English language learning strategies integrated with technology in Palu City whics prkuliahan employ several techniques to gather comprehensive and reliable data. Firstly, surveys using structured questionnaires will be distributed to junior high school students to assess their perceptions and experiences with technology-enhanced learning strategies. These surveys will utilize Likert-scale items to quantify student attitudes and beliefs, along with open-ended questions to capture qualitative insights into their learning experiences (Dörnyei, 2003).

Standardized pre- and post-tests amin carcarsy administered to measure the students' English language proficiency before and after the implementation of technology-integrated strategies. These tests cove reading, writing, speaking, and listening skills, aligning with curriculum standards to ensure consistency and validity in assessing learning outcomes (Alderson et al., 1995). semi-structured interviews sunbrn conducted with English language teachers from participating schools. These interviews has been provided qualitative data on teachers' perspectives regarding the effectiveness of technology in enhancing student learning outcomes. Classroom observations using an observation checklist complement these methods, allowing researchers to directly observe and record the implementation of technology-integrated strategies in real-time, capturing student engagement and interaction during lessons (Wragg, 2012).

Data Analysis

The collected data is undergo a rigorous analysis process to address the research questions effectively. Quantitative data from surveys and pre- and post-tests has been analyzed using descriptive statistics to summarize student responses and measure changes in English language proficiency over time. Inferential statistical techniques, such as paired t-tests or ANOVA, has been employed to determine the statistical significance of any observed differences in learning outcomes (Field, 2018).

Qualitative data from interviews and classroom observations has been analized be analyzed using thematic analysis to identify recurring patterns, themes, and insights related to the impact of technology-integrated learning strategies on student outcomes. This approach involves coding the qualitative data to uncover common themes and variations, thereby providing a deeper understanding of the factors influencing the effectiveness of these strategies (Braun & Clarke, 2006).

RESULT AND DISCUSSION

The integration of technology in education has revolutionized teaching and learning processes worldwide. In Palu City, Indonesia, where English language proficiency among junior high school students is a critical educational goal, the use of technology-integrated learning strategies presents an opportunity to enhance learning outcomes. This section presents the results of a mixed-methods study investigating the impact of such strategies on students' English language proficiency. The study employed quantitative surveys and pre- and post-tests, along with qualitative interviews and classroom observations, to provide a comprehensive analysis.

The survey aimed to assess students' perceptions and experiences with technology-integrated learning strategies in English language classes. A total of 150 junior high school students from three schools in Palu City participated in the survey. The results indicated a generally positive attitude towards the use of technology for learning English. Over 80% of the students agreed or strongly agreed that technology helped them understand English better, enhanced their motivation to learn, and made learning more enjoyable. However, a notable finding was that access to reliable internet and digital devices outside school hours posed challenges for some students, affecting their ability to fully engage with technology-enhanced learning activities.

To measure the impact on learning outcomes, standardized tests assessing reading, writing, speaking, and listening skills were administered before and after the implementation of technology-integrated strategies. The pre-test results showed a baseline level of English proficiency among students, with varying levels of proficiency across different skills. After the intervention period, significant improvements were observed in all four skills. Statistical analysis using paired t-tests revealed statistically significant differences ($p < 0.05$) between pre- and post-test scores, indicating that the technology-integrated strategies contributed positively to enhancing students' English language proficiency.

Semi-structured interviews were conducted with 10 English language teachers from the participating schools. The interviews aimed to gather insights into teachers' experiences, perceptions, and challenges in integrating technology into their teaching practices. Overall, teachers expressed enthusiasm about the potential of technology to support language learning. They highlighted benefits such as increased student

engagement, personalized learning experiences, and access to authentic language resources. However, challenges such as inadequate training in using educational technology, limited access to digital resources, and the need for ongoing technical support were also noted as barriers to effective implementation.

Classroom observations were conducted throughout the intervention period to directly observe the implementation of technology-integrated strategies and student engagement during lessons. The observations revealed varied levels of student interaction with technology, with some students demonstrating high levels of engagement and active participation in digital activities, while others showed less enthusiasm or technical proficiency. Teachers' instructional strategies ranged from using interactive apps and online simulations to incorporating multimedia presentations and collaborative projects, reflecting a diverse approach to integrating technology in teaching English.

Discussion

The findings from this study underscore the potential of technology-integrated learning strategies to positively impact the English language learning outcomes of junior high school students in Palu City. The quantitative results demonstrated significant improvements in students' reading, writing, speaking, and listening skills following the intervention. Statistical analyses, including paired t-tests ($p < 0.05$), indicated clear advancements in these language competencies, affirming the effectiveness of technology-enhanced learning approaches. These findings align with previous research indicating that technology can enhance language learning by providing interactive and immersive learning experiences (Godwin-Jones, 2018). By leveraging digital tools such as interactive apps, multimedia resources, and online simulations, educators can create dynamic and engaging learning environments that cater to diverse learning styles and foster deeper comprehension and application of English language skills. The study's outcomes highlight the transformative potential of integrating technology into language education, emphasizing its role in preparing students for global communication and digital literacy in Palu City's junior high schools.

The survey results highlighted students' positive perceptions of technology in learning English, emphasizing its role in improving understanding and motivation. Over 80% of surveyed students agreed or strongly agreed that technology helped them grasp English concepts better and made learning more enjoyable. However, challenges such as digital access disparities outside school and the need for adequate technical support remain critical issues that educators and policymakers must address to ensure equitable access to technology-enhanced learning opportunities (Warschauer, 2006). Students expressed concerns about inconsistent internet connectivity and limited access to digital devices at home, which could hinder their ability to fully engage with technology-integrated learning activities. These findings underscore the importance of addressing infrastructure gaps and providing ongoing support to enable all students to benefit equally from technology in their English language education. By addressing these challenges, educators and policymakers can create a more inclusive and effective learning environment for junior high school students in Palu City.

Qualitative insights from teacher interviews provided valuable perspectives on the implementation of technology in English language classrooms. Teachers

acknowledged the benefits of technology, such as increased engagement and personalized learning, but also raised concerns about the digital divide and the importance of ongoing professional development to effectively integrate technology into pedagogical practices (Hockly, 2013). These interviews highlighted the dual nature of technology as both a tool for enhancing educational experiences and a potential barrier when access and training are unequal. Educators emphasized the need for continuous support and training to harness the full potential of technology in fostering language learning skills among students in Palu City's junior high schools. Integrating these insights with quantitative data strengthens the study's comprehensive analysis and provides actionable recommendations for enhancing English language education through strategic technology integration.

Classroom observations complemented these findings by illustrating the varied implementation of technology-integrated strategies and student responses in real-time. The observations underscored the importance of pedagogical alignment with curriculum objectives and ongoing teacher training in maximizing the potential of technology to support language learning outcomes (Kessler, 2016). They revealed diverse instructional approaches, ranging from interactive apps to multimedia presentations, highlighting the adaptability of technology in catering to different learning styles. Moreover, these observations provided insights into student engagement levels and interaction patterns during technology-enhanced lessons, emphasizing the role of educators in scaffolding digital literacy skills and fostering meaningful learning experiences. Overall, the study's integrated approach offers valuable insights for educators, policymakers, and stakeholders seeking to enhance English language education through effective integration of technology in Palu City's junior high schools.

CONCLUSION

In conclusion, this study provides empirical evidence supporting the effectiveness of technology-integrated learning strategies in improving the English language learning outcomes of junior high school students in Palu City. The combined use of quantitative and qualitative methods offered a comprehensive understanding of the impacts, challenges, and potential of technology in language education. By addressing the identified challenges and leveraging the benefits of technology, educators can enhance learning experiences and empower students to achieve higher levels of English proficiency in an increasingly digital world.

REFERENCES

Alderson, J. C., Clapham, C., & Wall, D. (1995). *Language test construction and evaluation*. Cambridge University Press.

Bergmann, J., & Sams, A. (2012). *Flip Your Classroom: Reach Every Student in Every Class Every Day*. International Society for Technology in Education.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Chapelle, C. A. (2001). *Computer Applications in Second Language Acquisition: Foundations for Teaching, Testing and Research*. Cambridge University Press.

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research (3rd ed.)*. Sage Publications Ltd.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From Game Design Elements to Gamefulness: Defining "Gamification." *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*.

Dörnyei, Z. (2003). *Questionnaires in second language research: Construction, administration, and processing*. Lawrence Erlbaum Associates.

Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher Technology Change: How Knowledge, Confidence, Beliefs, and Culture Intersect. *Journal of Research on Technology in Education*, *42*(3), 255–284.

Field, A. (2018). *Discovering statistics using IBM SPSS Statistics (5th ed.)*. Sage Publications Ltd.

Godwin-Jones, R. (2018). Emerging technologies, language learning, and research: A look ahead. *Language Learning & Technology*, *22*(1), 6–11.

Graham, C. R. (2006). Blended Learning Systems: Definition, Current Trends, and Future Directions. In C. J. Bonk & C. R. Graham (Eds.), *The Handbook of Blended Learning: Global Perspectives, Local Designs*. Pfeiffer.

Hockly, N. (2013). *Learning technologies for adult education: Trends, opportunities and challenges*. British Council.

Isadaud, D., Fikri, M. D., & Bukhari, M. I. (2022). The Urgency of English in The Curriculum in Indonesia to Prepare Human Resources for Global Competitiveness. *DIAJAR: Jurnal Pendidikan Dan Pembelajaran*, *1*(1), 51–58.

Kessler, G. (2016). *Teaching ESL/EFL listening and speaking*. Routledge.

Kukulska-Hulme, A., & Shield, L. (2008). An Overview of Mobile Assisted Language Learning: From Content Delivery to Supported Collaboration and Interaction. *ReCALL*, *20*(3), 271–189.

Liu, M., Navarrete, C., & Wivagg, J. (2014). Mobile Learning and English Language Learners: A Case Study of Using iPod Touch as a Teaching and Learning Tool. *Journal of Interactive Learning Research*, *25*(3), 373–403.

Saleem, A. N., Noori, N. M., & Ozdamli, F. (2021). Gamification Applications in E-Learning: A Literature Review. *Technology, Knowledge and Learning*, *27*(1), 139–159.

Tamim, R. M., Bernard, R. M., Borokhovski, E., Abrami, P. C., & Schmid, R. F. (2011). What Forty Years of Research Says About the Impact of Technology on Learning: A Second-Order Meta-Analysis and Validation Study. *Review of Educational Research*, *81*(1), 4–28.

Warschauer, M. (2006). *Laptops and literacy: Learning in the wireless classroom*. Teacher College Press.

Wragg, E. C. (2012). *An introduction to classroom observation (Classic edition)*. Routledge.