

The Influence of Digital Technology on English Language Learning in Secondary Schools: An In-Depth Analysis

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh teknologi digital terhadap pembelajaran bahasa Inggris di sekolah menengah. Dengan pesatnya perkembangan teknologi digital, pentingnya penguasaan bahasa Inggris sebagai bahasa internasional telah meningkat secara signifikan. Penelitian ini menggunakan metode kuantitatif dengan kuesioner yang disebarakan kepada 200 siswa dan 50 guru di beberapa sekolah menengah di Jakarta. Hasilnya menunjukkan bahwa 75% siswa merasa bahwa teknologi digital telah meningkatkan pemahaman mereka terhadap bahasa Inggris, sementara 80% guru menyatakan bahwa penggunaan teknologi dalam pengajaran membuat proses pembelajaran lebih menarik. Namun, tantangan seperti kurangnya pelatihan bagi guru dalam menggunakan teknologi masih ada. Penelitian ini diharapkan dapat memberikan rekomendasi untuk pengembangan kurikulum dan metode pengajaran yang lebih efektif. Dalam konteks global yang semakin saling terhubung, kemahiran berbahasa Inggris telah menjadi salah satu keterampilan penting. Oleh karena itu, penelitian ini berfokus pada bagaimana teknologi digital dapat memfasilitasi pembelajaran bahasa Inggris di tingkat sekolah menengah. Dengan memanfaatkan teknologi, diharapkan proses pembelajaran dapat menjadi lebih interaktif, menarik, dan efektif. Melalui analisis mendalam, penelitian ini juga akan mengidentifikasi tantangan yang dihadapi dalam integrasi teknologi dalam pendidikan, serta memberikan rekomendasi untuk perbaikan.

Keyword: Teknologi Digital; Perkembangan Teknologi Digital; Pembelajaran Bahasa Inggris

ABSTRACT

This research aims to analyse the influence of digital technology on English language learning in secondary schools. With the rapid development of digital technology, the importance of mastering English as an international language has increased significantly. This study employs a quantitative method with a questionnaire distributed to 200 students and 50 teachers across several secondary schools in Jakarta. The results indicate that 75% of students feel that digital technology has enhanced their understanding of English, while 80% of teachers state that the use of technology in teaching makes the learning process more engaging. However, challenges such as the lack of training for teachers in using technology persist. This research is expected to provide recommendations for the development of a more effective curriculum and teaching methods. In an increasingly interconnected global context, proficiency in English has become one of the essential skills. Therefore, this research focuses on how digital technology can facilitate English language learning at the secondary school level. By leveraging technology, it is hoped that the learning process can become more interactive, engaging, and effective. Through in-depth analysis, this study will also identify the challenges faced in the integration of technology in education, as well as provide recommendations for improvement.

Keyword: Digital Technology; Development of Digital Technology; English Learning

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1. INTRODUCTION

The advancement of digital technology has drastically transformed the landscape of education. In recent years, digital technology has been widely adopted across various educational institutions, from primary to higher education. The integration of digital technology in education facilitates access to a broader array of information and learning resources while fostering a more interactive and engaging learning experience for students. Teachers can leverage video conferencing platforms such as Zoom or Google Meet to conduct virtual classes (Anderson & Elloumi, 2004), utilize social media to build learning communities (Selwyn, 2011), and employ interactive learning applications like Kahoot and Quizlet to enhance student engagement (Prensky, 2001). Furthermore, adaptive learning systems and artificial intelligence enable personalized learning experiences, tailoring lesson materials to match students' understanding and abilities (Means et al., 2010). However, despite these advantages, the implementation of digital technology in education also presents challenges. A significant issue is the technological access gap among students from diverse economic backgrounds (Van Dijk, 2020). While urban students generally have adequate access to technological devices and the internet, many students in rural areas still struggle to obtain the necessary resources (OECD, 2015). This disparity creates inequalities in educational quality (Livingstone & Helsper, 2007). Additionally, concerns regarding data privacy and security have emerged with the increasing use of digital platforms in education (Buckingham, 2007). Addressing these challenges requires collaboration among educators, students, government agencies, and educational institutions (Garrison & Vaughan, 2008). As digital technology continues to evolve, the future of education is expected to be increasingly integrated with technology, fostering a more efficient, effective, and inclusive learning environment (Laurillard, 2012).

In addition to digital technology, English language proficiency plays a crucial role in global communication, business, and technology. In Indonesia, proficiency in English is essential for enhancing students' competitiveness in the global market. According to data from the Central Statistics Agency (BPS) in 2021, only 20% of the Indonesian population is proficient in English, highlighting the need to improve English language skills among students (BPS, 2021). English language learning in secondary schools is particularly critical, as it not only enhances students' communication skills (Crystal, 2003) but also provides broader access to global information and opportunities (Graddol, 2006).

This research aims to explore the influence of digital technology on English language learning in secondary schools. By examining the impact of technology, this study seeks to identify strategies to improve the effectiveness of English language learning while addressing the challenges associated with technology integration. Additionally, this research aims to provide insights into the effectiveness of digital tools in enhancing student engagement, learning outcomes, and teacher-student interactions.

The rapid adoption of digital technology has enabled virtual classrooms, allowing students and teachers to engage in learning activities without being physically present in the same location. Online learning platforms provide students with flexible access to educational materials at their convenience (Means et al., 2010). Digital tools such as automatic translators and spell checkers further support language acquisition by helping students correct errors in speaking and writing (Graddol, 2006). In this digital era, English language learning has moved beyond the confines of traditional classrooms, offering students a more interactive, enjoyable, and efficient learning experience (Selwyn, 2011). This shift presents significant opportunities for students to enhance their language skills and prepare for future global challenges.

Given the integral role of digital technology in modern learning environments, this research also seeks to evaluate the effectiveness of various technology-based learning methods. The study will analyze how digital tools such as online platforms, mobile applications for vocabulary practice, and interactive multimedia resources contribute to English language learning (Ng, 2012). By assessing student performance before and after the integration of digital tools, this research aims to identify the tangible benefits of technology in language education (Means et al., 2010). Additionally, feedback from teachers will be collected to understand their perspectives on the effectiveness of digital learning tools and how these technologies can be better integrated into the English language curriculum (Selwyn, 2011).

To achieve these objectives, this study will employ a comprehensive methodology that includes data collection from various secondary schools in both urban and rural areas. The research will involve interviews with teachers and students, direct classroom observations, and an analysis of technological devices used in the learning process (Cohen, Manion, & Morrison, 2018). A literature review on digital technology in English language learning will also be conducted to provide a theoretical foundation for the study (Creswell, 2014). Through this research, a deeper understanding of the positive and negative impacts of digital technology in English language learning will be established (Selwyn, 2011). The findings of this study are expected to contribute to the development of more effective and innovative teaching methods in secondary schools while offering recommendations for optimizing the use of digital technology in education (Garrison & Vaughan, 2008). The insights gained from this research may serve as a valuable reference for policymakers in enhancing the quality of English language education in Indonesia (Graddol, 2006).

By analyzing the effectiveness of technology-based learning methods, this study aims to explore the potential benefits of mobile applications, e-learning platforms, and social media in English language education (Stockwell, 2012). A deeper understanding of these methods can facilitate the discovery of innovative strategies to optimize English language learning in secondary schools (Kukulska-Hulme & Traxler, 2019). As a result, students will be better equipped to develop their English language skills efficiently, while teachers will gain clearer guidelines for designing a curriculum that integrates digital technology into English language instruction (Garrison & Vaughan, 2008). Ultimately, improving English language education through digital technology will contribute to better preparing students for global challenges in the future (Graddol, 2006).

2. RESEARCH METHOD

This research adopts a quantitative approach, which offers advantages in collecting large amounts of data and analyzing it objectively without being influenced by subjective opinions or interpretations (Creswell, 2014). Through a structured and consistently measurable survey design, the validity and reliability of the collected data can be ensured (Bryman, 2012). The systematic data collection process, conducted through surveys involving randomly selected respondents or those meeting specific criteria, ensures adequate representation of the population or sample under study (Fowler, 2013). Additionally, statistical methods such as regression analysis and hypothesis testing allow researchers to identify significant patterns or relationships among the variables studied (Field, 2018). The use of a quantitative approach and survey design in this research is expected to contribute substantially to understanding the phenomenon under investigation and provide a solid basis for evidence-based decision-making (Babbie, 2020). The findings are anticipated to be beneficial not only for this study but also as a reference for future research in related fields (Trochim & Donnelly, 2008), thereby making a sustainable contribution to knowledge development and offering practical benefits to society.

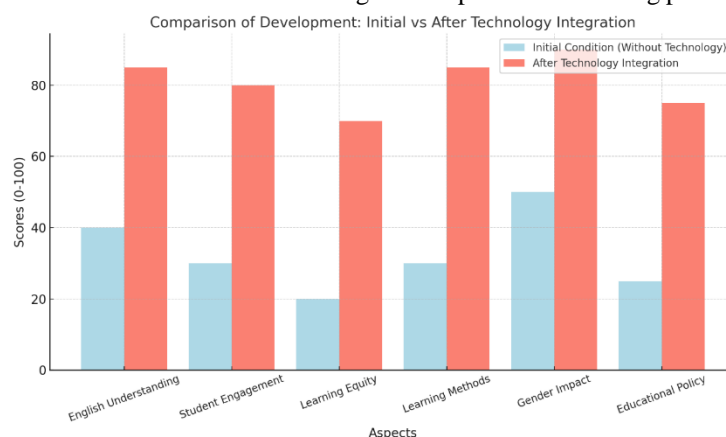


Figure 1. Comparison of Development

In addition to employing a quantitative approach, this study utilizes a descriptive research method to gain an in-depth understanding of the influence of digital technology on English language learning in secondary schools. Detailed data collection enables researchers to comprehensively illustrate how digital technology is applied in English language learning (Cohen, Manion, & Morrison, 2018), while also identifying the benefits and challenges associated with its integration in the learning process (Selwyn, 2011). This deeper understanding is expected to lead to practical recommendations for optimizing digital technology use in English language education (Ng, 2012). These recommendations are anticipated to contribute positively to creating an innovative and effective learning environment, maximizing student engagement and facilitating their academic potential and holistic personal development (Graddol, 2006).

This research involves various stakeholders, including students, teachers, and policymakers in secondary schools in Jakarta. With a study population of approximately 10,000 students and 500 English teachers, this research aims to provide a comprehensive overview of how digital technology is utilized in the English learning process. The large population size ensures that the data collected accurately reflects real conditions and provides deeper insights into the effectiveness of existing English language learning programs. Additionally, this study seeks to identify the challenges encountered by students and teachers in integrating digital technology into the learning process. The insights gained are expected to offer valuable guidance for decision-makers in efforts to improve the quality of English language education in secondary schools. Beyond benefiting students and teachers directly involved in this research, the findings are anticipated to have a broader impact on the development of English language education in Indonesia. This research serves as an important milestone in improving educational quality, equipping students with better preparation to face global

challenges, and contributing to the advancement of the education system through collaborative and data-driven efforts.

To ensure a representative sample, this study employs a stratified random sampling technique, which is particularly effective in heterogeneous populations. This method ensures that the selected sample accurately represents the diversity within the population, thereby enhancing the validity and generalizability of the research findings. The sample selection process is conducted meticulously, considering key factors such as location and school type. A total of 200 students and 50 teachers will participate in this study as respondents. By using stratified random sampling, the research aims to provide a detailed and accurate depiction of educational conditions in the selected schools. The data obtained is expected to serve as a strong foundation for decision-making and policy formulation in the education sector. Consequently, this research is expected to offer tangible benefits to society by providing new insights and better solutions for addressing various educational challenges, ultimately contributing to the broader goal of improving the quality of English language education.

To collect data, this research utilizes several instruments, including questionnaires, interviews, and classroom observations. The questionnaire is designed with careful consideration of various factors influencing digital technology use in English language learning. The questions are formulated based on relevant literature and previous studies to ensure their relevance and ability to yield meaningful information. The collected data is expected to provide a comprehensive understanding of the extent to which digital technology has been integrated into English language learning. Through meticulous and in-depth data analysis, this research aims to identify trends and patterns in technology use that can serve as a basis for improving learning methods. The findings from the questionnaire will not only enhance our understanding of technology use in education but also provide valuable guidance for educators and policymakers in optimizing the effectiveness of digital learning tools. With a commitment to improving educational quality, this research aims to make a positive contribution to the continuous innovation of English language learning.

In addition to questionnaire data, interviews are conducted with ten English teachers to gain deeper insights into their experiences integrating digital technology into their teaching methods. The interviews reveal varying levels of technological proficiency among teachers, with some facing significant adaptation challenges while others are more adept at utilizing digital tools. A common theme among the responses is the need for continuous learning and professional development in technology use, as the educational landscape and digital tools continue to evolve. Many teachers recognize the importance of staying updated with technological advancements to maintain teaching effectiveness. To overcome technological barriers, teachers employ various creative strategies, such as collaborating with colleagues to exchange ideas, participating in training programs, and experimenting with different digital tools through trial and error. The insights gained from these interviews provide valuable perspectives on the opportunities and challenges of digital technology integration in education. By understanding these experiences, this research aims to contribute to the development of more effective strategies for enhancing the use of digital technology in English language learning.

Classroom observations are conducted to provide direct insights into how digital technology is implemented in the teaching and learning process. These observations allow researchers to analyze teacher-student interactions, assess the use of technological tools such as laptops, tablets, and projectors, and evaluate how effectively digital technology supports learning. By observing various aspects of the teaching process, researchers can identify best practices and areas for improvement in technology-enhanced learning. Furthermore, student responses to digital technology use are examined to determine whether it significantly enhances their understanding of lesson materials. Observations serve as a crucial method for assessing the impact of technology on classroom dynamics and instructional effectiveness, contributing to the development of more interactive and innovative learning approaches.

The data collected in this study is analyzed using both quantitative and qualitative techniques. Descriptive statistical methods are employed to provide an overview of key trends and characteristics in the dataset. Measures such as mean, median, and standard deviation allow for a clearer understanding of student and teacher responses regarding digital technology use in English language learning. Additionally, inferential statistical methods, including regression analysis and hypothesis testing, are used to draw broader conclusions and establish significant relationships between variables. The results of this analysis are expected to provide valuable insights for educational policymakers and practitioners, enabling them to enhance the quality of English language learning by effectively leveraging digital technology.

For qualitative data, thematic analysis is applied to identify patterns and recurring themes in interview responses and observational data. This approach allows researchers to explore underlying relationships between different aspects of digital technology use in education. By systematically categorizing themes, researchers can construct a comprehensive narrative that encapsulates teachers' experiences and classroom dynamics. The thematic approach facilitates a deeper understanding of the challenges and opportunities presented by digital technology, ultimately leading to more informed recommendations for its effective

integration into English language education. Through rigorous and detailed analysis, this study aims to contribute to the continuous improvement of technology-enhanced learning strategies, ensuring that students and educators can maximize the benefits of digital innovations in the educational landscape.

3. RESULTS AND DISCUSSION

A. *Interpretation of Findings*

The integration of digital technology in education has opened numerous opportunities for students to learn more effectively and enjoyably. With internet access, students can quickly and easily search for information from various reliable sources while utilizing applications and online learning platforms that facilitate learning without physical limitations. Additionally, digital technology fosters collaborative learning, enabling students to share knowledge, ideas, and experiences through online communication platforms such as email, discussion forums, and social media. This interaction not only strengthens their comprehension of lesson materials but also enhances their social and cooperative skills. As a result, the use of digital technology significantly broadens and deepens students' learning experiences, improving their learning outcomes while equipping them with essential competencies to navigate the increasingly complex and digital-driven future. Given this reality, it is imperative for educators to continuously integrate digital technology into their teaching processes to ensure students receive quality and relevant learning experiences.

These findings align with previous research and contribute valuable insights to the argument that digital technology holds significant potential in enhancing student learning outcomes. Research conducted by Lai and Hwang (2016) demonstrated that the use of digital technology fosters a more interactive and engaging learning environment, particularly in the context of English language learning. The increased interactivity and engagement positively impact student motivation and participation, leading to improved learning outcomes. Furthermore, the integration of technology in education is no longer merely an option but a necessity. In an era where technological advancements influence nearly every aspect of life, students must be equipped with the skills and knowledge necessary to navigate and compete in an increasingly technology-driven job market. The findings of this study reinforce the urgency of embedding digital technology as an integral component of pedagogical approaches in schools. The implications of this research not only deepen the understanding of how digital technology enhances student learning outcomes but also emphasize the necessity for educational systems to continually adapt to technological developments. As key stakeholders in education, it is crucial to advocate for the integration of technology into the curriculum to ensure that students are adequately prepared to face challenges and seize opportunities in the digital era.

B. *Implications for Education*

The effective integration of digital technology into education requires proactive measures from educators, particularly in refining instructional methodologies. Teachers are encouraged to implement technology-based learning strategies, including online learning and blended learning approaches, which combine digital and traditional classroom interactions. These methods enhance the interactivity of lessons and contribute to a more engaging and dynamic learning experience for students. The application of digital tools in language learning, particularly in English education, has proven to be instrumental in fostering student engagement and skill development. Additionally, digital technology enables teachers to monitor students' progress in greater detail and provide timely feedback. Through continuous assessment and real-time tracking, educators can identify students' specific learning needs and tailor instructional strategies accordingly. This personalized approach ensures that students receive support that aligns with their individual learning styles and academic development. Thus, the integration of digital technology in English language learning presents a significant opportunity for enhancing the overall quality of education in schools.

Beyond instructional practices, curriculum development plays a crucial role in ensuring that educational programs remain relevant and responsive to technological advancements. In the context of digital transformation, it is essential to integrate digital technology into the curriculum in a way that fosters adaptability and innovation. A flexible and responsive curriculum provides students with opportunities to explore diverse learning modalities that suit their individual needs and preferences. Additionally, the inclusion of digital literacy components within the curriculum equips students with essential technological skills that are vital for their future academic and professional pursuits. The collaboration between educational institutions and technology providers is equally important in supporting the effective implementation of a technology-integrated curriculum. By fostering partnerships with technology experts and resource providers, schools can access the necessary tools, training, and technical support required to optimize digital technology use in language learning. This strategic collaboration ensures that students benefit from high-quality learning experiences that are both effective and sustainable.

The thoughtful incorporation of digital technology into curriculum planning is a critical step toward enhancing the quality of education and preparing students for the demands of a digitally driven world. By

equipping students with the necessary competencies to navigate technological advancements, the education sector can play a pivotal role in fostering future-ready learners. The findings of this study highlight the potential for digital technology to transform English language learning and offer valuable insights for policymakers, educators, and institutions in designing more effective and innovative learning strategies. Moving forward, it is imperative to continue exploring and refining the integration of digital tools in education to ensure that students receive the best possible learning experiences and are well-prepared for future challenges in an increasingly digitalized world.

4. CONCLUSION

The findings of this research indicate that the integration of digital technology in English language learning in secondary schools significantly enhances students' learning outcomes, motivation, and engagement in the learning process. Compared to conventional learning methods, digital technology provides access to a broader range of learning resources and interactive applications, allowing students to learn in a more engaging and effective manner. The flexibility offered by digital technology enables students to tailor their learning experiences according to their individual learning styles, adjusting the time and place of study as needed. Additionally, interactive features embedded within digital platforms foster student engagement, helping them maintain focus and absorb lesson material more effectively. The use of digital technology also expands students' access to diverse and up-to-date information, contributing to a deeper understanding of English and enriching their knowledge in the field. The potential of digital technology in improving learning quality and student performance underscores the need for collaboration among school administrators, teachers, and students. By working together, stakeholders can optimize the benefits of digital technology, creating a more modern, effective, and enjoyable learning environment.

Despite the valuable insights provided by this study, certain limitations must be acknowledged. This research focuses on a specific city with a limited number of respondents, making it difficult to generalize the findings to the broader Indonesian education system. The influence of digital technology on English language learning may vary across different regions due to disparities in infrastructure, access to technology, and pedagogical approaches. To obtain a more comprehensive understanding, future research should involve a larger sample size across diverse locations in Indonesia. By incorporating a wider range of respondents, future studies can provide a more accurate depiction of the role of digital technology in language learning, offering stronger empirical evidence for educational policymakers and practitioners. The expansion of research scope will contribute to more informed decision-making in the integration of digital technology into English language learning across the country.

Further research should explore additional aspects of digital technology in language education to deepen understanding and optimize its implementation. Conducting surveys on digital technology users in foreign language learning would help identify user preferences and challenges associated with digital learning platforms. Additionally, longitudinal studies could track the progression of language skills among students utilizing digital tools, providing valuable insights into the long-term effectiveness of technology in language education. Future studies could also compare various digital learning platforms, such as mobile applications, educational websites, and language learning software, to assess their respective advantages and limitations. This comparative analysis would inform the design of more effective and efficient digital learning strategies. Moreover, research should examine the long-term effects of digital technology on students' learning motivation and sustained interest in language acquisition. Understanding these dynamics will contribute to the development of pedagogical strategies that optimize technology use for improved learning outcomes.

In terms of research methodology, a mixed methods approach is recommended for future studies to gain a more holistic perspective on digital technology in education. By integrating qualitative and quantitative methodologies, researchers can generate more comprehensive insights into how digital technology impacts learning. Surveys can provide a broad overview of technology adoption rates among students and teachers, while interviews can capture detailed experiences, perceptions, and challenges encountered in implementing digital learning tools. Classroom observations further enrich the data by offering direct insights into real-world applications of digital technology in educational settings. By combining these approaches, future research can produce more nuanced findings that contribute to evidence-based educational policies and the development of more effective digital learning strategies. The use of a mixed methods approach ensures that research findings are not only data-driven but also contextually rich, enabling educators and policymakers to implement more informed and effective improvements in digital learning environments.

As digital technology continues to evolve, its integration into English language learning will become increasingly indispensable. Future studies should aim to refine educational strategies, develop more adaptive curricula, and explore innovative ways to maximize the benefits of technology in education. By continuously advancing research in this field, educational institutions can ensure that students are well-equipped to navigate the complexities of a digitalized world while achieving better learning outcomes. The insights gained from this

study and future research will serve as valuable contributions to shaping the future of education, fostering a more dynamic and technology-integrated learning ecosystem.

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