

THE IMPACT OF TECHNOLOGY INTEGRATION ON EFL LEARNING OUTCOMES IN AN INDONESIAN JUNIOR HIGH SCHOOL

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Abstract

This study investigates the impact of technology integration on the English learning outcomes of seventh-grade students at MTs Muhammadiyah Al-Haq Palu. Employing a descriptive research design, data were collected through a combination of Likert-scale questionnaires, semi-structured interviews, classroom observations, and documentation. The findings reveal that technology-based platforms, such as E-learning Madrasah and audiovisual media, positively contribute to students' motivation, learning autonomy, and overall language outcomes. The majority of students reported that technological integration facilitated material comprehension and boosted their confidence in language skills. However, the study also identified significant barriers, including limited internet connectivity, inadequate device access, and learning distractions stemming from social media. The results emphasize that while technology offers constructive pedagogical benefits, its effectiveness relies heavily on strategic teacher intervention, robust infrastructure, and a blended approach that accommodates diverse learning styles.

Keywords: Educational technology, EFL learning outcomes, digital integration, blended learning.

BACKGROUND

In the contemporary educational landscape, technology is no longer merely an optional supplement; it has become a fundamental component of effective teaching and learning. Digital tools, including Learning Management Systems (LMS) and interactive platforms, expand access to instructional resources, promote independent learning, and enable students to engage with learning materials beyond the traditional classroom (Dancsa et al., 2023, p. 290; Wanritfen et al., 2025). In one example, it simplifies teachers' tasks through the use of LMS and provides students with access to digital learning resources, enabling them to enhance their learning abilities independently. According to an article (tekno.kompas.com: February 4, 2024), citing data from APJII, "Internet usage in Indonesia has reached 221.5 million people, or precisely 221,563,479 individuals." This

highlights the growing use of technology such as the internet, which increases annually.

At the secondary education level, the strategic use of technology can increase student participation, address diverse learning needs, and support innovative pedagogical approaches. Evidence from secondary-school research indicates that structured digital integration is significantly associated with improved academic achievement (Hillmayr et al., 2020). Consequently, technology integration should be viewed not simply as an enhancement to instruction but as an essential factor in improving learning outcomes.

Nevertheless, the educational benefits of technology cannot be assumed to continue automatically, particularly within specific socio-educational contexts

(Handayani, 2023), following the COVID-19 pandemic. During the pandemic, platforms such as Zoom and Google Classroom were used extensively to sustain emergency remote teaching. However, preliminary observations at MTs Muhammadiyah Al-Haq Palu reveal a substantial decline in technology use after the return to face-to-face instruction. Digital resources, including YouTube and web-based instructional platforms, have been used far less frequently and have largely been replaced by traditional textbooks. This regression exposes a critical weakness in the sustainability of post-pandemic technology integration: although digital tools can support learning, their impact depends on consistent, purposeful, and contextually appropriate use. Therefore, this study investigates the continuing impact of technology on English language learning outcomes among seventh-grade students. Specifically, it seeks to determine how digital tools influence learning and to identify practical ways to integrate them effectively and sustainably into the post-pandemic curriculum.

LITERATURE REVIEW

Definition of the use Technology in Education

The use of technology in education involves the application of digital tools and the internet, which has become essential in today's digital era to assist both students and teachers in the learning process. This includes the use of computers or laptops, tablets, projectors, various applications such as educational videos and online quizzes, as well as other online platforms designed to enhance the educational experience. According to Effendi & Wahidy (2019), implementing and adapting to technology in learning is key to success and responsibility in facing changes in the globalization era. They emphasize that the advancements in modern technology necessitate that school

education must adapt to the use of technology in teaching. This ensures that the education provided to students keeps pace with changes and helps teachers improve the quality of the teaching and learning process. Aside from that, according to the Association for Educational Communications and Technology, (AECT) (1977), educational technology is a complex and integrated process that involves elements such as individuals, procedures, ideas, devices, and organizations to analyze problems, design, implement, evaluate, and manage solutions related to learning. Based on these two quotes, it can be seen that the use of technology is highly necessary in the globalization era, as it can help provide solutions related to the improvement of learning processes.

The Indonesian Ministry of Education, Culture, Research, and Technology has issued several regulations regarding the use of technology in junior high schools (SMP). One of the latest regulations is issued by the Ministry of Education and Culture (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia, 2024), which governs the curriculum for elementary and secondary schools. This regulation emphasizes the importance of integration in the learning process and aims to improve the quality of education. In addition to the 2024 regulation, the government also sets standards for educational facilities and infrastructure (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia, 2023a). This regulation aims to ensure that schools have sufficient technological facilities to support effective teaching and learning processes. Thus, quality assurance in education is essential, as outlined in Permendikbudristek No. 53 tahun 2023, which addresses quality assurance in higher education in Indonesia. This regulation is established to systematically and sustainably enhance the quality of education. Therefore, based on the three regulations issued by the Ministry of

Education and Culture, education must continue to progress to achieve better outcomes by adopting technology in learning as a means of adaptation.

Benefits of Using Technology in Education

The use of technology can significantly impact student learning outcomes and bring changes to the experiences of educators. Technology provides quick access to information and resources that students want to explore and study. Teachers can also make classroom learning more engaging, preventing it from becoming monotonous and boring, by incorporating videos, simulations, and interactive applications. This approach can enhance student motivation and involvement during lessons. According to Mulyadi et al., (2021), the use of technology can facilitate both students and teachers in the teaching and learning process, especially in language education. Students have many opportunities to gain extensive knowledge, allowing them to create an enjoyable learning environment. In other words, the use of technology in language learning provides convenience and opportunities for both students and teachers, and also enables students to create a more enjoyable and effective learning environment.

According to Arafat & Fitriani (2020), the goal of successful students learning is to acquire or develop new knowledge and skills. In this context, the use of technology can offer a new learning experience in the classroom. In conclusion technology also benefits teachers by making it easier for them to find and provide accessible materials using the technology. Furthermore, according to Criollo-C et al., (2021), learning that utilizes m-learning technology allows for the provision of various learning models, enabling students of the current generation to become accustomed to multitasking. Meanwhile, Wangge (2020) explains that the use of technology can enhance the quality of learning, broaden access to education, assist

in visualizing abstract ideas, facilitate deeper understanding of the material being studied, and present learning content in a more engaging manner.

Based on the quotations from the experts above, it can be concluded that the use of technology not only enriches students' learning experiences but also enhances the effectiveness of teaching for teachers. Therefore, it can create a more productive and engaging collaborative learning environment.

Challenge of Using Technology in Education

The use of technology in education presents various challenges. One significant challenge is the limited infrastructure in remote areas, where access to computers and the internet remains difficult. According to Fu (2013), factors influencing technology use include the lack of availability of ICT equipment, time for lesson planning, technical and administrative support, the school curriculum, and the geographical location of the school.

Additionally, many teachers have not received training to effectively utilize technology in their teaching, leading to difficulties in adapting to these changes. Resistance to change also exists, as some educators and educational institutions continue to rely on traditional teaching methods. According to Fitriah et al., (2019), the condition of teachers does not fully support the current era of revolution, and many schools still have teachers who are not tech-savvy and are reluctant to educate themselves on technological advancements.

Furthermore, the use of technology can distract students, with smartphones and social media often diverting their attention from learning. According to Abidin et al., (2023), a major challenge for students in utilizing technology in classroom learning is that notifications from social media and other applications can distract them. Moreover, attention must be given to the

disparities in access, as not all students have smartphones or access to the internet.

Therefore, while technology offers numerous benefits in education, its effective implementation requires addressing infrastructure limitations, enhancing teacher training, overcoming resistance to change, and minimizing distractions for students. A holistic approach that includes adequate resources, professional development, and equitable access is essential to ensuring that technology serves as a tool for enhancing, rather than hindering, the learning experience.

Learning Outcomes

The learning outcomes achieved through the use of technology in education refer to the expected results during the learning process that leverages technology. With the integration of technology, students can develop critical skills such as problem-solving, creativity, and collaboration. Technology also provides access to a wide range of learning resources, accelerates mastery of material, and supports independent learning.

According to Bates (2015), technology can enrich the learning environment and help students develop critical thinking skills and digital competencies that will benefit them in the future. Additionally, Kozma (2003) states that technology can enhance student learning; when used effectively, it can transform the learning experience into a dynamic and interactive one, thereby improving learning outcomes. Based on these two quotes, it can be seen that the use of technology in education can transform students' critical thinking patterns while also providing a broader learning environment. This allows the learning experience to become more dynamic, ultimately enhancing students' learning outcomes.

With established learning outcomes, each school sets a Minimum Competency Criteria (KKM) as a benchmark to assess whether students have achieved the expected

learning goals throughout the teaching and learning process by the end of the academic year. According to national standards (Kementerian Pendidikan dan Kebudayaan Republik Indonesia, 2013), KKM is a criterion that outlines the mechanism, procedures, and assessment instruments for evaluating student achievement. Educational assessment is part of a process of collecting and processing information to measure students' learning outcomes. In English lessons at MTs Muhammadiyah Al-Haq Palu, the English teacher has set the KKM at an average score of 75. The Minimum Mastery Criteria (KKM) set by the English teacher is based on the assessment of class participation, attendance, assignment scores, exam scores, and attitudes.

METHOD OF THE RESEARCH

Research Design

This study employed a descriptive mixed-methods approach to provide a comprehensive analysis of how technology impacts English learning outcomes. This design was selected because it allows for the integration of quantitative survey data to measure students' broader perceptions, alongside in-depth qualitative data to explore the underlying pedagogical experiences and instructional strategies utilized by the teacher.

Participants and Setting

The research was conducted at MTs Muhammadiyah Al-Haq Palu. The participants consisted of a purposive sample of 15 seventh-grade students and one English teacher. This specific cohort was selected to evaluate the transitional impact of technology use in post-pandemic classroom settings.

Data Collection Instruments

Data were gathered through four complementary instruments to ensure triangulation:

Questionnaire: A Likert-scale questionnaire was administered to the 15 students to quantitatively assess their perceptions, engagement levels, and perceived benefits of technology in English learning.

Semi-Structured Interviews: Face-to-face interviews were conducted with the English teacher to explore their instructional experiences, challenges, and perspectives on integrating digital tools (e.g., E-learning platforms and audiovisual media).

Observation: Direct classroom observations were carried out to monitor student participation and the practical implementation of technology-based versus traditional teaching methods.

Documentation: Academic records, including students' daily assignment scores (using platforms like the Madrasah Digital Report Card/RDM), lesson plans, and learning activity sheets (LKPD), were collected to corroborate the primary data.

Data Analysis

The data analysis followed a concurrent procedure. The quantitative data derived from the student questionnaires were analyzed using descriptive statistics, categorizing students' responses into three performance ranges: High (76-100), Middle (61-75), and Low (0-60). Concurrently, the qualitative data from interviews and observations were analyzed using an interactive model (adapted from Sugiyono, 2013), which encompasses three continuous stages: data reduction (filtering and simplifying raw interview transcripts and field notes), data display (organizing information into narrative text and analytical tables), and conclusion drawing/verification (synthesizing the integrated findings to formulate a cohesive understanding of technology's impact on learning outcomes).

FINDING AND DISCUSSION

Findings

This section presents the empirical findings derived from the data collection process, which encompasses the student questionnaires, in-depth teacher interviews, and direct classroom observations. To comprehensively address the research objectives, the results are synthesized and presented under two primary themes. The first theme explores the direct impact of technological integration on the seventh-grade students' English learning outcomes and their overall pedagogical perceptions. The second theme examines the practical realities of this integration, detailing the instructional strategies employed by the teacher, the readiness of school facilities, and the inherent challenges encountered during the implementation process.

The Impact of Technology on Students' English Learning Outcomes

To evaluate the impact of technology on students' learning outcomes, data were gathered through questionnaires and direct classroom observations. The quantitative results from the questionnaire involving 15 seventh-grade students demonstrated a generally positive reception toward technology integration. The data revealed that 1 student (6.7%) achieved a high-range score (76–100), a significant majority of 11 students (73.3%) fell into the middle-range category (61–75), and 3 students (20%) were in the low-range category (0–60). This indicates that while technology serves as a beneficial platform for English learning, its maximum potential has yet to be fully realized for all students.

Qualitatively, the majority of the students reported that digital tools significantly aided their comprehension of the material, stimulated their learning interest, and fostered independent study habits outside of school hours. These perceptions were corroborated during classroom observations. When the teacher

utilized a projector to display an animated YouTube video, the students exhibited active engagement; they effectively responded to the teacher's comprehension questions and successfully completed a follow-up task requiring them to retell the story in writing.

Teachers' Strategies, Facilities, and Challenges in Technology Integration

Interviews with the English teacher and further classroom observations highlighted the practical implementation and ongoing challenges of educational technology. The school provides adequate technological facilities, including Wi-Fi access, projectors, and an official E-learning Madrasah platform. The teacher confirmed that digital platforms, such as YouTube for material enrichment, E-learning for formal activities, and the Madrasah Digital Report Card (RDM) for evaluation, serve as an effective support system that has motivated students to engage with varied and challenging materials.

Despite these advantages, several significant barriers were identified. Technical issues, such as internet network disruptions, unexpected power outages, and occasional hardware malfunctions (e.g., audio issues during video playback), frequently disrupt the learning flow. To mitigate these infrastructural challenges, the teacher proactively prepares printed student worksheets (Lembar Kegiatan Peserta Didik or LKPD) as an alternative. Furthermore, the teacher emphasized that the most prominent challenge originating from the students is the distraction caused by social media notifications, which necessitates strict supervision to keep students focused on the learning objectives. Consequently, the teacher advocates for a blended approach, combining traditional teaching methods with technology-based learning to accommodate diverse learning styles effectively

Discussion

The primary objective of this study was to analyze the impact of technology integration on the English learning outcomes of seventh-grade students at MTs Muhammadiyah Al-Haq Palu. The findings comprehensively demonstrate that the utilization of digital platforms positively influences students' motivation, academic engagement, and material comprehension. The active participation observed during audiovisual sessions and the predominance of middle-to-high scores in the student questionnaire support the assertion made by Kozma (2003), who noted that technology transforms the learning experience into a dynamic and interactive environment, thereby improving overall learning outcomes. Furthermore, the students' positive responses align with Mulyadi et al. (2021), stating that technology in language education provides extensive opportunities for students to acquire knowledge and creates a highly enjoyable learning environment.

However, the study also highlights that integrating technology is not without its pedagogical and infrastructural challenges. The students' self-reported difficulties regarding distractions from social media validate the findings of Abidin et al. (2023), who identified smartphone notifications as a major disruptive factor in classroom focus. This phenomenon underscores the necessity of the teacher's role not merely as a facilitator of digital tools but as an active supervisor who guides students in filtering information and maintaining digital discipline.

Additionally, systemic issues such as limited internet connectivity and power outages were identified as significant barriers. These findings corroborate Fu (2013), who argued that the lack of availability of ICT equipment and infrastructural support are primary factors inhibiting effective technology use in education. To overcome this, the teacher's strategy of preparing alternative printed

materials (LKPD) and blending traditional methods with technological tools demonstrates the adaptive thinking necessary in modern pedagogy. This blended strategy supports Handayani's (2023) perspective on the importance of contextual analysis in educational technology, ensuring that digital implementation aligns realistically with the specific infrastructural readiness and unique needs of the educational institution.

In conclusion, while educational technology substantially enriches students' English learning experiences and outcomes, its success is not solely dependent on the presence of the technology itself. Instead, it relies heavily on a synergistic approach involving adequate infrastructure, strategic teacher intervention, and a balanced integration with traditional instructional methods.

CONCLUSION AND SUGGESTION

Conclusion

Based on the findings and discussion, it can be concluded that the integration of technology in English learning at MTs Muhammadiyah Al-Haq Palu has a positive impact on the learning outcomes of seventh-grade students. The utilization of technological platforms, such as E-learning Madrasah, YouTube, projectors, and digital report systems (RDM), enhances students' motivation, interest, and engagement. Students reported that technology helped them better understand English materials, learn independently, and practice their language skills with greater confidence.

Furthermore, data from the teacher interview and classroom observations confirmed that technology serves as an effective support system that promotes active student participation and facilitates better comprehension of the lessons. However, practical challenges remain, including infrastructural issues (e.g., internet instability and power outages) and learning

distractions caused by social media. Therefore, while technology significantly contributes to improving learning outcomes, its optimal implementation requires a blended pedagogical approach, active teacher supervision, and adequate infrastructural support

Suggestion

Based on the research findings, several suggestions are proposed to enhance the effectiveness of technology integration in English language learning:

1. For the School: It is suggested that the institution continue to improve its technological infrastructure by ensuring stable internet access and providing backup power sources, such as generators, to minimize disruptions during the learning process.
2. For the Teachers: Teachers are encouraged to integrate technology while balancing it with traditional methods to accommodate various student learning styles. Crucially, teachers must actively supervise and guide students to maintain focus and prevent distractions when using gadgets.
3. For the Students: Students should be continuously motivated to use technology responsibly for educational purposes. This will help improve their self-discipline and maximize the benefits of independent learning opportunities.
4. For Future Researchers: Future studies are encouraged to involve a wider range of digital platforms and different educational settings. This will provide a deeper understanding of the long-term impacts of technology on EFL students' learning outcomes.

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