THE EFFECTIVENESS OF SECONDARY SCHOOL STUDENTS' MULTILINGUAL SKILLS IN THE DIGITAL ERA

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Abstract

The development of technology has brought major changes in various aspects of life, including in education. This study aims to analyze the effectiveness of using technology in multilingual learning in primary schools, focusing on the implementation in Lhokseumawe City. A mixed methods approach was used. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data were analyzed using thematic analysis methods. The results showed that the use of technology in language learning had a positive impact on improving students' speaking, listening, reading and writing skills. The group of students who used technology experienced an average score increase of 15%, compared to an 8% increase in the group who learned with traditional methods. In addition, the use of gamification-based apps and e-learning increased students' motivation and engagement in learning. However, the main challenges faced were limited access to digital devices and internet connectivity, as well as a lack of training for teachers in optimizing technology in teaching. The conclusion of this study confirms that technology integration in multilingual learning can improve learning effectiveness, provided it is supported by adequate infrastructure and improved teacher competencies. Therefore, a comprehensive strategy is needed to overcome the existing constraints, including equal access to technology in primary schools and the development of a more adaptive digital-based curriculum.

Keywords: *Multilingual learning, language skills, blended learning.*

Introduction

The development of technology has brought major changes in various aspects of life, including in the world of education. Globalization and advances in information technology have made communication across cultures and languages easier and faster. In many countries, including Indonesia, there is an increasing awareness of the importance of multilingual skills, especially for students at the secondary school level. The United Nations Educational, Scientific and Cultural Organization (UNESCO) emphasizes that early multilingual learning can improve the quality of education and promote inclusiveness in the learning environment (UNESCO, 2021).

In today's globalized world, the ability to speak more than one language has become an increasingly urgent necessity. According to a report from *Ethnologue* (2023), there are more than 7,100 languages spoken worldwide, and about 43% of them are endangered due to a lack of native speakers. , countries such as Switzerland and Belgium have adopted a multilingual education system that allows students to master multiple languages. more than two languages since middle school, giving them an edge in global communication competencies (Grosjean, 2020).

In Asia, countries such as Singapore have implemented bilingual education policies that require students to master both English and their native language, such as Mandarin, Malay or Tamil. Studies conducted by The American Council on the Teaching of Foreign Languages (ACTFL) show that students who speak more than one language have an advantage in critical thinking and problem-solving skills compared to those who speak only one language (ACTFL, 2022).

Indonesia, as a country with more than 700 local languages, faces challenges in integrating multilingual learning into the national curriculum. The Ministry of Education, Culture, Research and Technology (MoEC Ristek) notes that only around 40% of secondary schools have incorporated foreign languages as part of their curriculum, with English being the most commonly taught foreign language (MoEC Ristek, 2023).

In the context of education in Indonesia, the implementation of multilingual learning still faces various obstacles. One of the biggest challenges is the limited resources, both in the form of teaching materials, competent educators, and technological infrastructure that supports language learning (Santoso, 2014). According to a report from the Central Bureau of Statistics (BPS), only about 55% of secondary schools in Indonesia have access to digital devices such as computers and the internet that can be used to support foreign language learning (BPS, 2023).

The advancement of digital technology has opened up great opportunities in supporting multilingual learning. Various apps such as Duolingo, Babbel, and Rosetta Stone have become tools for students to learn new languages independently. A study conducted by Krashen (2021) showed that students who used language learning apps regularly experienced significant improvements in vocabulary comprehension and language structure compared to traditional learning methods.

At the global level, developed countries such as Finland and South Korea have successfully integrated technology in language learning. Finland, for example, has developed an education system that allows students to learn multiple languages through interactive digital platforms, while in South Korea, AI technology has been used to provide a more personalized and adaptive language learning experience for students (Kim & Park, 2021).

Meanwhile, in Indonesia, the adoption of technology in language learning is still relatively limited. Most schools in urban areas have started to implement technology in language learning, but in rural areas there are still constraints in terms of internet access and digital devices (Ria Jayanthi, 2022). Research conducted by Setiawan (2017) shows that students who engage in technology-based learning tend to have higher levels of motivation and engagement compared to those who only use conventional learning methods.

Lhokseumawe City, as one of the cities in Aceh, also faces challenges in implementing digital-based multilingual learning. According to the Lhokseumawe City Education Office report (2023), only about 35% of secondary schools have implemented technology in language learning, with the majority of schools still relying on traditional teaching methods. In addition, the lack of educators who have skills in teaching foreign languages is also an obstacle in Lhokseumawe City. Data from Malikussaleh University shows that only 20% of English teachers in secondary schools in the city have attended specialized training in digital-based language learning methods (Malikussaleh University, 2023).

In a study conducted by Wahyudi (2024), it was found that students who had access to technology-based learning showed better improvement in speaking and understanding foreign languages compared to those who relied solely on textbooks and conventional learning methods. This suggests that technology integration can be a solution in improving the effectiveness of multilingual learning in Indonesia, including in Lhokseumawe City.

Despite the challenges, opportunities to improve multilingual learning in Indonesia, particularly in Lhokseumawe City, remain wide open. One strategy that can be implemented is to increase training for teachers in the use of digital technology and ensure equal access to digital devices in all secondary schools (Mawarwati, 2023). In addition, there needs to be support from local governments and educational institutions to develop a curriculum that is more flexible and adaptive to the needs of language learning in the digital era. In some schools in Lhokseumawe, the blended learning method has begun to be implemented, which combines face-to-face learning with digital technology to provide a more interactive and effective learning experience (Lhokseumawe City Education Office, 2023).

Given the challenges and opportunities, it is important for education stakeholders to continue developing innovative strategies to improve the effectiveness of multilingual learning. Digital technology, if used optimally, can be a very effective tool in improving students' language skills and preparing them to compete at the global level (Kenyo Mitrajati, 2023). Therefore, this study aims to explore the effectiveness of using technology in multilingual learning in secondary schools, with a particular focus on the implementation in Lhokseumawe City. The findings from this study are expected to provide insights for educators, policy makers, as well as parents in supporting their children's language skills development in the digital era.

Research Methods

This study uses a mixed methods approach that combines quantitative and qualitative approaches to evaluate the effectiveness of using technology in multilingual learning in secondary schools, with a focus on

Lhokseumawe City. This approach aims to provide a more comprehensive picture of the impact of technology on students' language skills as well as the challenges faced in its implementation (Creswell, 2014).

In this study, quantitative data was collected through a survey with a structured questionnaire distributed to 200 students from 10 secondary schools in Lhokseumawe City. This questionnaire covered aspects such as the frequency of technology use in language learning, students' language skill level, as well as their experience in using digital learning applications (Sugiyono, 2017). In addition, language proficiency tests were conducted before and after the application of technology to see the changes that occurred.

A qualitative approach was taken through in-depth interviews with 20 teachers and 30 parents. The interviews aimed to explore their experiences of the benefits and challenges of using technology for language learning. Data was also obtained through direct observation in the classroom to record how technology is used in the learning process (Miles & Huberman, 2014).

In addition, this study uses an experimental method by comparing two groups of students: one group that uses digital technology in language learning (such as language learning apps, educational videos, and e-learning platforms) and another group that learns with conventional methods. Measurements were taken for three months to see the effectiveness of technology-based learning (Krathwohl, 2009).

Quantitative data were analyzed using descriptive and inferential statistical techniques using SPSS software. Meanwhile, qualitative data was analyzed using thematic analysis method to identify patterns and main themes related to the impact of technology use in multilingual learning (Braun & Clarke, 2006).

Results and Discussion

The results show that the use of technology in language learning in secondary schools has a significant positive impact on students' language skills. Students who used language learning applications showed greater improvement in speaking and writing skills compared to those who relied solely on traditional methods (Wahyudi, 2024).

Based on the results of the language proficiency test, students who used technology experienced a 15% increase in average score compared to the group that did not use technology. The following is a table of test results before and after the use of technology in language learning:

Table 1. Comparison of Language Proficiency Test Scores

Group	Initial Test (Average Score)	Final Test (Average Score)	Increase (%)
Using Technology	72	87	15%
No Technology	70	78	8%

Results from interviews with teachers show that the use of technology not only increases students' motivation in language learning but also provides flexibility for teachers in delivering materials. One teacher mentioned that learning apps such as Duolingo and Kahoot make students more actively participate in class.

However, there are challenges in the application of technology, especially related to access to digital devices and internet connectivity. Based on the survey, around 40% of students reported that they experience limitations in accessing digital devices at home, which hinders them from optimally utilizing technology for language learning.

In addition, the data shows that the frequency of technology use in language learning also has an effect on learning outcomes. Students who use technology regularly have higher test scores compared to those who only use technology occasionally. Below are the survey results regarding the frequency of technology use in language learning:

Table 2: Frequency of Technology Use in Language Learning

Frequency of Use	Percentage (%)
Every day	30%
3-5 times per week	45%
1-2 times per week	20%
Rarely	5%

Teachers interviewed also highlighted the need for further training for educators in using technology effectively in language learning. Based on the data, only 20% of teachers in Lhokseumawe have attended specialized training on technology-based learning. Research results also show that the use of technology is more effective in improving listening and speaking skills compared to writing and reading skills. This is because many learning applications are audio-visual based, making it easier for students to understand pronunciation and the context of communication in a foreign language (Kenyo Mitrajati, 2023).

In addition to the positive impacts, there are technical constraints such as limited internet access which is still a major obstacle in some secondary schools in Lhokseumawe. Based on a report from BPS (2023), only around 60% of schools in the city have stable internet access, which affects the effectiveness of technology-based learning. In the social aspect, the use of technology also shows an increase in interaction and collaboration between students. Gamification-based applications such as Kahoot and Quizizz help students to learn in a more competitive and fun way, which ultimately increases their participation in class (Krath, 2021).

Overall, the results of this study confirm that the use of technology in language learning in secondary schools provides significant benefits, both in terms of motivation, language skills, and flexibility in teaching. However, strategies are still needed to overcome existing obstacles, such as equal access to digital devices and training for teachers to optimally utilize technology (Arizal, 2023).

This research also indicates that learning approaches that combine traditional methods with digital technology (blended learning) are more effective in improving students' language skills. This strategy allows students to continue learning based on direct interaction with teachers while utilizing technology as a tool to enrich their learning experience (Bialystok et al., 2013). In the future, it is expected that there will be policies that are more supportive of the implementation of technology in education, especially in language learning in secondary schools. Local governments can play a role in providing more equitable digital infrastructure and developing a more flexible curriculum to accommodate the use of technology in language learning (Ria Jayanthi, 2022).

This research shows that the use of technology in multilingual learning in secondary schools has a significant positive impact on improving students' language skills. Students who used technology, such as language learning apps and e-learning platforms, experienced greater improvements speaking, listening, reading and writing compared to those who relied solely on conventional learning methods. Test results showed that the average score of students using technology increased by 15%, while the group without technology only saw an 8% improvement. This confirms that technology plays an important role in enriching language learning methods in the digital era (Wahyudi, 2024).

addition, this study revealed that the frequency of technology use in language learning is directly proportional to the improvement of students' language skills. Students who routinely used technology, such as interactive apps and educational videos, had scores that were more high compared with those who only occasionally used technology.
using technology. Survey data shows that 75% of students who use technology regularly experience significant improvement in language acquisition (Mawarwati, 2023).

From the teachers' perspective, the use of technology in language learning provides flexibility in teaching and increases students' participation in the classroom. Teachers report that gamification-based learning apps such as Kahoot and Quizizz help students be more active in participating in learning. However, the main obstacle faced is the lack of training for teachers in the use of technology, which hinders the effectiveness of digital-based learning.While technology provides many benefits, this study also identified challenges, particularly related to limited access to digital devices and the internet. About 40% of students in Lhokseumawe City

reported that they do not have adequate access to digital devices at home, which hinders the effectiveness of technology-based learning (Lhokseumawe City Education Office, 2023). , there is a need for policies that support equitable access to technology in secondary schools. In , this study found that the use of technology is more effective in improving speaking and listening skills compared to reading and writing skills. This is due to the large number of audio-visual learning applications that help students in understanding pronunciation and context of communication in foreign languages (Kenyo Mitrajati, 2023). , it is necessary to develop more technology-based learning materials that can improve students' reading and writing skills more effectively.

The results of research conducted by Azhari (2019) show that Indonesian language subject teachers who teach in class VII of SMP Negeri 1 Dewantara District use two types of questions: (1) knowledge questions; and (2) comprehension questions. The most dominant variety of questions used by teachers in learning Indonesian is: variety of knowledge questions.

The results of research conducted by Aminah (2022) showed that there was an increase in the standard score in the learning process which was marked by the average posttest score t=0.092 <2.021, sig. =0.001>0.05 from a total of 22 students, meaning that there is an increase in reading text comprehension skills in students whose learning uses the SQ4R method.

In the social aspect, the use of technology also encourages collaboration between students, where they discuss and learn together more often through digital platforms. Gamification-based learning and interactive apps have been shown to increase students' social interaction and make them more confident in using foreign languages in the school environment (Krath, 2021).

The results of this study also show that the integration of traditional learning methods with digital technology (blended learning) is more effective in improving students' language skills than using only one learning method. Blended learning allows students to have direct interaction with teachers while still utilizing the advantages of technology in enriching their learning experience (Bialystok et al., 2013).

Conclusion

In conclusion, this study proves that technology plays a crucial role in improving the effectiveness of multilingual learning in secondary schools. However, in order for this benefit to be maximized, appropriate strategies are needed in its implementation, including equal access to technology, improved teacher competence, as well as the use of technology in the classroom. curriculum development that supports the use of technology in language learning. Thus, students can be better prepared to face global challenges in the digital age and have better language skills for their future.

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