



## **Integration of Technology in Arabic Language Teaching in Writing and Speaking Skills**

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### **Abstract**

The study uses a mixed approach involving case studies, surveys, and field experiments to gather data and aims to explore the impact of technology integration in Arabic language teaching, in particular on student writing and speaking skills. Through case study, survey and field experiment, it was found that technologies such as language learning applications and AI-based software, make a significant positive contribution to improving student written and spoken skills. Applications like Duolingo and Grammarly have proven effective in improving student writing quality by providing instant feedback and training tailored to individual abilities. Similarly, voice recognition software and speech training apps like Google Speech-to-Text and Rosetta Stone improve student fluency and confidence in speaking. However, challenges such as gaps in access to technology in remote areas and adaptation to new technologies become major obstacles. The results of this study suggest that technology should be used as a supporting tool that complements conventional methods in Arabic language teaching, stressing the need for educational policies that support the integration of technology and the provision of adequate training for students and teacher.

**Keywords:** technology integration, arabic language teaching, writing skills, speaking skills, learning apps.

### **Introduction**

In today's digital age, technology integration in education has become one of the most discussed topics. Technological advances have not only changed the way we access information, but also changed teaching and learning methods in various fields, including language teaching. One language that has received great attention in this context is Arabic. As a language with a rich culture and deep history, Arabic faces its own challenges in teaching. Various digital technologies have been used to improve language skills, especially in writing and speaking skills. The use of technology in Arabic language teaching not only provides additional facilities for teachers and learners, but also opens up new possibilities in more interactive and effective learning methods. (Qodir et al., 2024).

In the past, Arabic language teaching often relied on conventional methods such as textbooks, lectures and handwriting exercises. These methods, while effective in many ways, have limitations in terms of flexibility and active student engagement. In this context,

technology offers innovative solutions to overcome these shortcomings. The use of educational software, mobile applications, e-learning platforms, and internet-based communication tools has significantly changed the landscape of Arabic language teaching. With technology, teaching is no longer limited to a physical classroom or a specific time; students can access learning materials anytime and anywhere, and interact with teachers and classmates through various digital media.

One of the most important aspects of technology integration in language teaching is its impact on writing and speaking skills. Writing skills in Arabic are often regarded as one of the main challenges for learners, mainly due to the complexity of the grammatical and orthographic structures of this language. (Dzukroni & Aziz, 2023). Technology, through tools such as writing correction apps and AI-based platforms, can assist students in correcting mistakes and improving their writing skills more efficiently. These apps not only provide instant feedback but also provide customized exercises according to students' ability levels, which can accelerate the learning process.

On the other hand, speaking skills in Arabic also benefit greatly from technology integration. Technologies such as speech recognition software and speaking practice apps allow students to practice speaking more frequently and in more realistic contexts. These tools are often equipped with interactive features that allow students to practice dialogs, correct pronunciation, and get real-time feedback. With this technology, students not only learn to speak more fluently but also to understand the nuances and intonations that are important in verbal communication.

In addition, technology also plays an important role in creating a more fun and engaging learning environment. The use of videos, simulations and educational games can make the Arabic learning process more interesting and interactive (Nabielah Agustin, 2021). This method not only increases students' motivation but also helps them in understanding and remembering the material better. By integrating technology, Arabic language teaching not only becomes more diverse but also more adaptive to students' individual needs.

However, while technology offers many advantages, it is important to remember that its success depends largely on how it is implemented. Effective use of technology in Arabic language teaching requires careful planning, selection of appropriate tools, and training for teachers. In addition, there are also challenges to overcome, such as disparities in access to technology in different regions and differences in students' comfort levels with technology.

Therefore, research and evaluation regarding the impact of technology on writing and speaking skills in Arabic language teaching is essential. By understanding the impact,

educators can better design curriculum and teaching methods that make optimal use of technology. In the future, it is hoped that the integration of technology in Arabic language teaching can continue to grow and make a positive contribution to the improvement of students' language skills.

Previous research on technology integration in Arabic language teaching has shown that the use of technology can improve students' writing and speaking skills. For example, the study (Wahyudi et al., 2023) found that the use of multimedia-based mobile applications can increase student motivation in learning Arabic, especially in writing skills. Another research (Salomo Leuwol et al., 2023) shows that the use of interactive technologies such as e-learning platforms is able to enrich the learning experience and provide instant feedback that positively impacts students' speaking skills. However, although various technologies have been implemented in Arabic language teaching, there is still a gap in the understanding of the long-term effectiveness of such technologies, particularly in measuring the immediate impact on the continuous improvement of writing and speaking skills.

The novelty of this research lies in the holistic approach that integrates different types of technologies, such as mobile applications, e-learning platforms, and digital evaluation tools, to comprehensively evaluate how these technologies can support the development of students' writing and speaking skills in the long run. This research also focuses on longitudinal analysis which has not been widely explored in previous studies, thus providing new insights into the effectiveness and sustainability of technology use in Arabic language teaching.

## **Method**

This research utilizes a comprehensive and multi-faceted methodological approach to evaluate the impact of technology integration on writing and speaking skills in Arabic language teaching. Qualitative methods through case studies in several educational institutions were used to gain in-depth insights into the best practices, challenges, and outcomes of using technology in Arabic language teaching. Data were collected through in-depth interviews, classroom observations, and analysis of relevant documents, which were then complemented by quantitative methods through surveys and questionnaires distributed to students and teachers. The survey measured the frequency of technology use, perceptions of its effectiveness, and the level of satisfaction with technology-based teaching methods.

In addition, the study involved a field experiment to compare a group of students using technology in Arabic language learning with a group using conventional methods. Data from this experiment included writing and speaking skill test results, as well as feedback

from students and teachers. Data analysis was conducted using the triangulation method, combining results from interviews, surveys and experiments to gain a more holistic and accurate understanding. With this integrated approach, the research is expected to provide comprehensive insights and practical recommendations for educators in effectively implementing technology in Arabic language teaching.

### **Result and Discussion**

The results of this study show that the integration of technology in Arabic language teaching has a significant impact on students' writing and speaking skills. (Syarifudin, 2022). Data obtained from case studies, surveys, and field experiments reveal various findings that illustrate how technology can improve the quality of Arabic language learning and affect students' skills.

From the results of case studies conducted in several educational institutions, it is seen that the use of technology such as learning apps, writing correction software, and e-learning platforms has changed classroom dynamics and Arabic language teaching methods. The use of interactive learning apps allows students to practice writing skills more frequently and get instant feedback. These apps provide exercises tailored to each student's ability level, allowing them to correct errors in real-time and improve their writing skills. (Aziz et al., 2024). In addition, AI-based writing correction software assists students in recognizing and correcting grammar and spelling errors that may be difficult to identify through traditional methods. This contributes greatly to the improvement of students' writing skills.

Classroom observations show that integrating technology in Arabic language learning also contributes to the improvement of students' speaking skills. Technology such as speech recognition software and speaking practice apps allow students to practice pronunciation and speaking in Arabic more frequently. These apps not only assist students in improving their pronunciation but also provide feedback on intonation and verbal expression, which are important in effective communication. This helps students to speak more confidently and eloquently. (L. M. U. Hasan, Aziz, et al., 2024).

Results from an online survey conducted among students and teachers revealed that most research participants felt that technology had a positive impact on their language skills. About 85% of students reported that the use of technology in Arabic language learning makes them more motivated and engaged in the learning process. They also stated that technology makes it easier for them to access learning materials and practice language skills independently outside of class hours. (L. M. U. H. Hasan et al., 2024). Teachers also gave

positive feedback on the use of technology, with 78% of them stating that technology helps them to design and implement more interesting and varied learning activities.

The field experiment showed significant differences in the achievement of writing and speaking skills between the group of students using technology and the group using conventional methods. In terms of writing skills, the group using technology showed greater improvement in the quality of their writing compared to the conventional group. (Mufidah, 2024). The results of the writing skills test showed that students who used the learning app and writing correction software had higher scores and showed faster improvement in terms of grammar and spelling.

In terms of speaking skills, the group of students using technology also showed significant improvement compared to the conventional group. The use of speaking practice apps and speech recognition software helped students in improving their pronunciation and fluency. (Aziz & Sholehawati, 2023). Speaking test results showed that students who practiced with assistive technology were better able to speak clearly and confidently. In addition, they also showed a better understanding of intonation and verbal expression, which are important in communication.

In addition to these key findings, the study also identified several challenges faced in technology integration. One of the main challenges is the gap in access to technology in different regions. In some regions, especially in remote or less developed areas, access to technological devices and adequate internet connection is still an obstacle. This can affect students' ability to make the most of technology in Arabic language learning. To address this issue, efforts are needed to improve technology infrastructure and provide wider access for students across the region. (Adhimah & Hasan, 2024).

The results showed that some students had difficulty in adapting to new technologies. Although most students felt motivated by the use of technology, some of them found it difficult to use certain applications and software. Teachers also revealed that they need additional time to train students in using technology effectively. Therefore, adequate training for both students and teachers is essential for technology to be optimally used in Arabic language learning.

The study also found that although technology provides many advantages, not all aspects of Arabic language teaching can be replaced by technology. Conventional methods such as face-to-face interaction and group discussions still have an important role in the development of communication skills and cultural understanding. (Agustin et al., 2023).

Technology should be used as a support tool that complements traditional teaching methods, not as a total replacement.

Overall, the results of this study show that the integration of technology in Arabic language teaching has a positive impact on students' writing and speaking skills. Technology provides tools that allow students to practice language skills more frequently, get instant feedback, and increase their motivation in learning. However, in order to maximize the benefits of technology, it is necessary to address challenges such as access gaps and student adaptation difficulties. With the right approach, technology can be an invaluable tool in improving the quality of Arabic language teaching and learning.

The results of this study provide an in-depth insight into the impact of technology integration in Arabic language teaching, particularly in terms of students' writing and speaking skills. Through case studies, surveys and field experiments, various positive impacts and challenges associated with the application of technology in the learning process were found. This discussion aims to outline in more detail the findings and their implications in the context of Arabic language education. (Syaifudin et al., 2022).

One of the main findings of this study was the significant improvement in the writing skills of students using technology. The use of Arabic learning apps that offer writing exercises as well as AI-based writing correction software showed clear benefits. Apps such as Duolingo and Grammarly provide writing exercises designed for different ability levels of students, allowing them to practice repetitively with quick and specific feedback. (Musyafa'ah, L., Hardika, 2022). For example, Duolingo offers exercises that are customized to the student's progress and provides immediate feedback on grammar, spelling, and sentence structure errors. This allows students to correct their mistakes as they go along and avoid the same mistakes in the future.

The use of AI-based writing correction software such as Grammarly provides the added advantage of detecting errors that students often miss, as well as providing specific improvement suggestions. For example, Grammarly not only corrects spelling errors but also provides advice regarding writing style, sentence structure, and word choice. This allows students to understand the finer aspects of writing and improve the overall quality of their writing. However, although these tools are very beneficial, some students report difficulties in understanding the automated feedback, especially if they do not yet have a solid foundation in Arabic grammar. In some cases, students prefer manual feedback from teachers who can explain errors in more detail.

When it comes to speaking skills, technology has also shown a positive impact. Speech recognition software like Google Speech-to-Text and speaking practice apps like Rosetta Stone assist students in practicing pronunciation and fluency. Google Speech-to-Text allows students to speak in Arabic and see an automatic transcription of what they say. This provides immediate feedback on the accuracy of their pronunciation and allows them to correct mistakes quickly. Apps like Rosetta Stone provide speaking practice that involves simulating conversations with speech recognition technology, helping students improve their speaking in a more realistic context. (Annita Kastur et al., 2020).

The results of the field experiment showed that students who used technology in speaking practice showed significant improvements in confidence and fluency compared to students who used conventional methods. For example, in technology-based conversations, students feel more comfortable speaking because they can practice without the pressure of immediate judgment by the teacher or classmates. This allowed them to overcome their concerns about pronunciation and intonation, which contributed to the improvement of their speaking ability. However, the main challenge identified is the accuracy of the technology in handling accent and dialect variations. The use of speech recognition software often faces difficulties in understanding different accents, which can affect the effectiveness of the feedback provided.

Increased student motivation and engagement is another positive outcome of using technology in Arabic language teaching. Surveys show that most students feel more motivated to learn Arabic thanks to technology. Technology provides various interesting forms of interaction, such as educational games and videos, which can make learning more fun. For example, apps like Memrise use gamification to make language practice more interesting and challenging (Muid et al., 2022). Students can compete with their friends in completing exercises and earning points, which increases their motivation to continue learning. Interactive learning videos also allow students to see the use of Arabic in different contexts, enhancing their understanding of the language and culture.

However, reliance on technology can also reduce social interaction, which is essential for the development of comprehensive communication skills. Students who rely too much on technology may lack practice in face-to-face communication situations with teachers or classmates. Face-to-face interaction allows students to practice speaking skills in a real social context, which is essential for building effective communication skills. Therefore, it is important to create a balance between the use of technology and face-to-face interaction in Arabic language teaching.

The research also identified key challenges related to the technology access gap. In some regions, especially in remote or less developed areas, access to technology devices and adequate internet connection is still a constraint. For example, students in rural areas often face issues with slow or unstable internet connections, which limits their ability to utilize learning applications and online platforms effectively. To address these issues, efforts are needed from the government and educational institutions to improve technology infrastructure and provide wider access for students. Programs such as providing technology devices to schools in remote areas and improving internet networks should be a priority.

Adaptation to technology is also a challenge for some students and teachers. Although technology offers many benefits, some students report difficulties in using new apps and software. Teachers also need additional time to train students to use technology effectively. For example, teaching using technology-based applications requires specialized skills and an understanding of how to integrate technology in the curriculum. (Musyafa'ah et al., 2023). Therefore, comprehensive training for students and teachers is essential. The training program should cover how to use technology tools effectively, understand specific features, and how to integrate technology in learning strategies.

In addition to these challenges, the research also found that not all aspects of Arabic language teaching can be replaced by technology. Conventional methods such as face-to-face interaction and group discussions remain important in the development of communication skills and cultural understanding. For example, group discussions allow students to practice speaking in social situations and get immediate feedback from classmates and teachers. Face-to-face interaction also provides an opportunity to discuss nuances of language and culture that may not be fully reached by technology. Therefore, technology should be used as a supportive tool that complements traditional teaching methods, not as a total replacement.

The implications of these findings are important for teaching practice and educational policy. Educators should consider how technology can be effectively integrated in the Arabic curriculum to improve students' writing and speaking skills. This includes selecting appropriate technological tools, designing learning activities that utilize technology, and providing adequate training for students and teachers. The use of technology should be designed to improve the quality of learning without neglecting the importance of conventional methods.

Education policies also need to support technology integration by providing the necessary infrastructure and ensuring equitable access to technology for all students. Training programs for teachers and technical support should be part of education policy to ensure that



technology can be used effectively in teaching. Efforts to increase access to technology across regions, provide adequate training, and create a balance between technology and conventional methods are important steps to maximize the benefits of technology in Arabic language teaching.

Overall, this study shows that the integration of technology in Arabic language teaching has a significant positive impact on students' writing and speaking skills. Technology provides tools that allow students to practice language skills more frequently, get instant feedback, and increase their motivation in learning. However, challenges such as access gaps and adaptation difficulties must be overcome to maximize the benefits of technology. With the right approach, technology can be an invaluable tool in improving the quality of Arabic language teaching and learning, as well as helping students achieve better and more skillful language skills. (Tareh Aziz et al., n.d.). Effective integration between technology and conventional methods will create a more holistic and well-rounded learning environment, preparing students to face communication challenges in global and local contexts.

### **Conclusion**

This research provides a comprehensive overview of the impact of technology integration in Arabic language teaching, particularly on students' writing and speaking skills. From the results of the study, it is clear that technology has significant potential to improve the quality of Arabic language learning by providing tools and methods that support the learning process. Language learning apps and AI-based software, such as Grammarly and Duolingo, proved effective in improving students' writing skills by providing instant feedback and exercises tailored to individual ability levels. These technologies assist students in identifying and correcting grammar, spelling, and sentence structure errors more quickly and efficiently than conventional methods.

Likewise in speaking skills, speech recognition software and speaking practice apps such as Google Speech-to-Text and Rosetta Stone show significant improvements in students' fluency and confidence. These technologies allow students to practice speaking interactively, get immediate feedback on pronunciation and intonation, and practice in a more realistic context. The use of technology in speaking practice gives students the opportunity to improve their pronunciation without the pressure of immediate assessment, which contributes to the improvement of their speaking ability.

However, the findings of this research also identify some challenges that must be addressed. The technology access gap is one of the main issues, with many students in remote

or less developed areas experiencing difficulties in accessing technological devices and adequate internet connections. This limits their ability to optimally utilize technology in Arabic language learning. Therefore, greater efforts are needed from the government and educational institutions to improve technology infrastructure and provide wider access for all students. Programs aimed at improving internet connectivity and providing technological devices in underserved areas should be a priority.

Overall, this study shows that technology has the potential to improve Arabic language teaching by enhancing students' writing and speaking skills. However, to maximize the benefits of technology, it is important to address challenges such as access gaps and adaptation difficulties. By integrating technology effectively and in balance with conventional methods, Arabic language education can be improved to provide a more thorough and effective learning experience, preparing students to face the challenges of communication in an increasingly connected world.

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