Research Article

Technology As A Modern Arabic Language Learning Medium

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Abstract. The role of technology is massive across various fields, including the learning of Arabic. This study aimed to explore the role of technology as a catalyst in transforming Arabic language learning patterns. The research fell under the category of library research with a descriptive qualitative approach. The focus of the study was on analyzing research journals that discuss the use of technology

in Arabic language learning. The results showed that the role of technology in contemporary Arabic language learning (21st century) through various media such as artificial intelligence, applications, different digital platforms, and social media had a positive impact on the ease of access to communication, facilitating learning, delivering material, and providing evaluations in the context of digital learning. Technology played a crucial role in the success of learning and overcoming the barriers of distance, space, and time. Technology had given rise to many media such as animated videos, podcasts, cognitive game applications, and learning based on virtual reality and augmented reality, contributing to enriching students' understanding of Arabic language skills. The use of technology as a learning medium had become a daily necessity in the present day.

Keywords: Technology, Learning Media, Arabic Language.

INTRODUCTION

The utilization of technology as a medium plays a crucial role in Arabic language learning. By using educational media, the learning experience can be enriched, making it more engaging and stimulating the desire to learn. Implementing learning media in Arabic language education is particularly important due to the complexity of the language, which requires a high level of absorption. Additionally, effective use of educational media can enhance the efficiency of Arabic language learning. Unfortunately, in the current era, not many teachers use learning media, partly because providing such media requires significant time and financial resources (Usman, 2002).

The development of ICT (Information and Communications Technology) has generally influenced the quality of education by providing easy access to knowledge and the delivery of high-quality education. This has enabled education to be more widespread, quick, effective, and efficient (Tekege, 2017; Sutopo, 2012).

In the current era of information technology, the internet is an integral part of learning media, accessible via computers or laptops at any time and place. Arabic language learning through this medium is considered the most effective and flexible, and it can provide new insights into the latest developments in Arabic linguistics. This includes methods, techniques, strategies, styles, and media for teaching and learning Arabic, as well as global aspects related to the Arabic language (Muhandis, 2009).

The Association for Education and Communication Technology (AECT) describes media as any form used in the process of transmitting information. Meanwhile, the National Education Association (NEA) describes it as objects that can be manipulated, viewed, heard, read, or discussed, along with instruments effectively used in teaching and learning activities, which can influence the effectiveness of instructional programs. Media encompasses anything that can be utilized to convey messages across various dimensions of space and time, thereby stimulating thoughts, feelings, attention, and providing good stimulation (Jauhari, 2018).

According to the We Are Social report, as of January 2024, there are 185 million internet users in Indonesia, which is equivalent to 66.5% of the national population

of 278.7 million people. The number of internet users in Indonesia has increased by approximately 1.5 million, or 0.8%, compared to January 2023 (year-on-year, yoy). The report also shows that the number of internet users in Indonesia has consistently increased over the past decade. Compared to January 2014, the current number of users has grown by about 141.3 million. Over the past 10 years, the highest growth rate was recorded in January 2017, with the national internet user base increasing by 28.4% (yoy). The slowest growth was recorded in January 2023, with an increase of only 0.6% (yoy). Globally, the number of internet users reached 5.35 billion as of January 2024.

One of the foreign language subjects that holds significant importance in education is Arabic. Arabic can be learned through four skills (al-maharat al-lughawiyyah: listening (al-istima), speaking (al-kalam), reading (al-qira'ah), and writing (al-kitabah)). Such skills require supportive learning technology (Hamad, 2018).

Arabic, as a flexible language within the Semitic language family, comprises 12,305,052 million vocabulary words. Being the second most challenging language globally, Arabic holds a significant position as an international language in the era of industrial revolution. Conventional learning media such as textbooks, dictionaries, and paper handouts in various forms can be monotonous for both teachers and students in the learning process and are limited in specific time and space. With the advancement of time, a new era emerges, transforming the dissemination of information rapidly, making it quicker and more accurate. Arabic language education and its practitioners are gradually transitioning from conventional learning patterns to modern technology-based learning. The educational paradigm shifts with the emergence of e-learning, which not only offers accessibility advantages but also better flexibility and adaptability compared to conventional learning methods (Al-Maroof, Al-Emran, 2018).

Before the industrial revolution, the primary educational tools were limited to physical objects such as textbooks, modules, and worksheets. Now, easily accessible and high-quality educational devices are required for education. The delivery process back then was greatly hindered by high costs, lengthy timeframes, and extensive paper usage. The distribution of information underwent significant changes with the emergence of the new era of industrial development. This change was driven by rapid technological advancements and various societal activities altering their social patterns. Additionally, communities began utilizing Internet-based tools rather than conventional information sources like newspapers and magazines (Heggart & Yoo, 2018). The educational paradigm also shifted with the introduction of e-learning. Not only is it more easily accessible than conventional learning, but it's also more flexible (Al-Maroof & Al-Emran, 2018).

Barbara and Rita emphasize that instructional technology encompasses theories and practices related to the design, development, utilization, management, and evaluation of learning processes and resources. There are four main components in this definition: theory and practice, design, development, utilization, management, and evaluation, processes and resources, and for learning purposes. The theory and practice component indicate that instructional technology is rooted in knowledge derived from experience and research. Meanwhile, the design, development,

utilization, management, and evaluation components reflect the aspects of system management in the context of learning. The processes and resources component refers to a series of activities that utilize resources. Lastly, the learning component emphasizes that programs are designed to encourage students to actively engage in learning, enabling them to overcome learning difficulties (Nurdyasnyah & Andiek, 2015).

In the 21st century learning, there's an emphasis on learning and innovation skills, information literacy, media literacy, and technology literacy (digital literacy). Technology, as a medium in education, encompasses more than just the physical contributions of technology as learning tools. It involves a multidimensional concept. Quoting one of the definitions of educational technology by the Association for Educational Communications and Technology (AECT, 2004): educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources. Educational technology involves the ethical study and practice aimed at facilitating teaching and learning, as well as enhancing performance through the creation, utilization, and management of appropriate technological processes and resources.

The use of technology in Arabic language learning has become a fundamental aspect to adapt to the advancements of our time. Technology is no longer just a creative tool but a necessity that must be fulfilled to pursue better learning outcomes. Thanks to technology, there has been a significant transformation in the methods of teaching and learning Arabic for both teachers and students, creating effective, dynamic, and interactive learning patterns for acquiring various skills in Arabic for everyday life. Therefore, technology as a learning medium today addresses issues of accessibility, quality, and provides much convenience in the field of education, especially in Arabic language learning. Hence, this research delved into several aspects related to the role of technology as a learning medium in contemporary Arabic language learning.

RESEARCH METHODS

This research was categorized as literature review, falling under the library research methodology. It involved a series of activities centered around collecting data from library materials, reading, taking notes, and analyzing content strictly within the library premises, without the need for field research (Zed, 2008). Data collection was primarily conducted by gathering information from various literature sources. The literature under scrutiny was not limited to books but also encompasses documentation, magazines, journals, and newspapers, all serving as primary data sources in the research process. The primary focus of library research was to explore various new theories, establish laws, principles, opinions, and other ideas applicable for analyzing and solving the research problem.

This research adopted a qualitative descriptive approach, focusing its analysis on the comparative process and on analyzing the dynamics of the observed phenomena using scientific logic (Azmar, 2001).

In this library research, the data sources consist of both primary and secondary sources. Primary data referred to information obtained directly from the original

source, such as books containing new scientific knowledge or new understandings of known facts or ideas. On the other hand, secondary data referred to information that cannot directly provide data collectors with information. Secondary data was obtained through other parties and not directly from the research subjects (Andi, 2012). In other words, secondary data served as supportive data for the primary or main data. The secondary data for this research was gathered from various sources such as books, articles, and other literature.

In collecting various data, the author searched from multiple sources, reads, examines, correlates, and takes notes on materials or content needed to obtain relevant information for discussion. Subsequently, an analysis of the content was conducted. The data analysis technique utilized in this research was content analysis. Content analysis typically employs qualitative inquiry within a conceptual framework. Initially, words were compiled into commonly referenced elements, facilitating the construction of concepts. These concepts were expected to encompass the content or message of the work comprehensively.

DISCUSSION

The presence of technology in educational media not only facilitates the teaching and learning process but also serves as a learning aid. In practice, technology not only assisted educators in delivering lessons through various devices but also related to the development of communication and technology knowledge, which is highly beneficial for the digitally-driven modern society. As a result, it could make a significant contribution to social life (Almi, Munawir, 2022; Putri, Nurafni, 2021).

The emergence of widely-used technological tools such as Artificial Intelligence, YouTube, Zoom, Google Meet, and Microsoft Teams, along with the proliferation of Arabic language learning content across various social media platforms like Instagram, Facebook, and TikTok, represents a tangible manifestation of technology utilization in digital-based learning. These popular platforms were not only used for communication purposes, such as in video conferences, but also served as fertile ground for digital-based learning models, especially in Arabic language education. Utilizing these platforms facilitates remoted face-to-face communication between teachers and students, as well as between native and second language speakers. The learning process could proceed smoothly due to the various features provided by these platforms, including audio, video, recording, screen sharing, document sharing, separate rooms for group discussions, and spaces for reactions and messages without spatial or temporal constraints.

The integration of digital technology into various aspects of educational institutions has transformed teaching, learning, and administration methods (Ifenthaler et al., 2021). For instance, there had been an emergence in the use of interactive media such as Quizizz, Padlet, Kahoot, and Mentimeter. These learning tools had become popular choices for educators to deliver materials, conduct exercises, or for students to learn Arabic language grammar, enhance their listening skills, watch Arabic language animated videos, and more.

Arabic language learning had become an integral part of education in various countries, especially in the Middle East and North Africa region. In the digital era,

technology had become an effective tool in enhancing the quality of Arabic language learning. Here were some examples of technologies that could be used as Arabic language learning media:

1. Arabic Language Learning Applications

Arabic language learning applications such as "ArabicPod101" and "Duolingo" offer interactive and accessible lesson materials that could be accessed via mobile devices. These applications enable students to learn Arabic independently and monitor their progress through evaluation features.

The use of technology in Arabic language learning can provide various significant benefits. Some of the main benefits involve increasing accessibility, flexibility, and interactivity. One of them is Digital Learning Applications. Arabic language learning applications allow students to learn independently. These applications often offer content tailored to each student's proficiency level (Azhar, Wahyudi, & Promadi, 2022).

The use of digital applications in learning assessment has brought significant changes to the education world. These applications offer methods that are more effective and efficient compared to traditional methods, providing instant feedback that helps teachers identify students' needs quickly. Moreover, digital applications automate the evaluation process, reducing the administrative burden on teachers and allowing them to focus more on teaching. In terms of cost, digital applications are more economical in the long run as they can be used repeatedly without significant additional costs, unlike paper-based methods that require ongoing expenses. This is highly beneficial for educational institutions with limited budgets (Azhar et al., 2023). Digital applications also make assessments more enjoyable for learners. The interactive design and educational games within the applications enhance motivation and student engagement, while reducing anxiety often associated with traditional tests. Furthermore, digital applications can enhance students' learning interest through adaptive learning features that tailor content to each student's abilities. With various content formats such as videos, interactive quizzes, and simulations, these applications cater to various learning styles, making the learning process more engaging and diverse (Azhar & Rahmawati, 2022; Handayani et al., 2023).

Applications for learning Arabic such as "ArabicPod101" and "Duolingo" had proven to be effective in teaching the Arabic language. Interactive materials accessible via mobile devices allowed students to learn independently and monitored their progress with instant feedback. This technology enhanced accessibility, flexibility, and interactivity, offering content tailored to students' proficiency levels.

The use of digital applications in learning evaluation also brought significant changes. More effective and efficient evaluation methods compared to traditional ones provide instant feedback, helping teachers quickly identify students' needs and reducing administrative burdens. Moreover, digital applications were more cost-effective in the long run and made evaluations more enjoyable through interactive designs and educational games.

Digital applications in Arabic language learning and evaluation enhanced accessibility, flexibility, and interactivity. Applications like "ArabicPod101" and "Duolingo" enabled self-paced learning with instant feedback, making the learning

process more engaging and efficient. More effective and cost-efficient digital evaluation methods reduced the burden on teachers and increased student engagement, ensuring an optimal learning experience tailored to each student's needs.

2. Arabic Language Learning Videos

Arabic language learning videos such as "Learn Arabic with Maha" and "Arabic with Ali" offered interactive and entertaining lesson materials. These videos could assist students in understanding the structure of the Arabic language, vocabulary, and common phrases used in various situations.

Teaching media for Arabic language in the current era of information technology must innovate and find new ways to enhance learning effectiveness. This will be greatly influenced by the development of information technology including computers, DVDs (Digital Video Discs), video conferencing, electronic mail, computer conferencing, computer-based multimedia, remote interactive databases, and so on. Computers have strategic value and influence on all tools and media in learning, both audio and video (Azzuhri, 2009).

One type of media closely associated with the ability to see and hear was video media. Video media could be used to communicate information to the target audience by presenting images or visuals, as well as sound or audio. According to Pribadi (2017), "Video" is an audio-visual media type that has the ability to combine sound and images simultaneously. Video media is widely used to convey messages comprehensively as it can accommodate and display objects, events, and locations within an interactive visual frame (Sholihah, et al., 2022).

Video learning resources for Arabic language, such as "Learn Arabic with Maha" and "Arabic with Ali," offer interactive and entertaining content, aiding students in understanding language structures, vocabulary, and phrases in various contexts. Teaching media must continuously innovate to enhance learning effectiveness, leveraging information technology such as computers, DVDs, video conferencing, and multimedia. Video, as an audio-visual medium, combines sound and visuals, effectively conveying messages comprehensively by showcasing objects, events, and locations interactively.

The use of video in Arabic language learning enhanced students' understanding through interactive and entertaining materials. Innovations in teaching media, supported by information technology, could improve learning effectiveness. Video, as an audio-visual medium, was capable of delivering comprehensive and interactive messages, combining sound and visuals for a better learning experience.

3. Arabic Language Learning Podcast Videos

Learning Arabic podcasts like "ArabicPod101" and "Learn Arabic Podcast" offered downloadable lesson materials that could be listened to offline. These podcasts enabled students to learn Arabic independently and tracked their progress through evaluation features.

In Arabic, radio is called "al-midyāʾ", and this technology has persisted over time with various modifications. Radio is a specialized device capable of receiving broadcast channels and playing cassette tapes in the past. In the digital era, radio has even evolved into podcasts, with the main principle being similar to that of radio functionality.

Currently, to record in MP3 format, various features of smartphone applications, such as voice recorders, can be utilized. Even audio media has regained popularity lately by utilizing podcast platforms. Unlike the use of voice recorders that can be done anytime without requiring an internet connection, podcasts utilize the internet to publish recording results. Therefore, podcast recordings can be accessed by anyone. Although simple, several things need to be considered in composing and creating audio media to produce good quality audio. These stages include planning the type of material to be produced (text or conversation), collecting and sorting suitable material, preparing a draft for recording, determining the type of software to be used, preparing the equipment for recording (smartphone, laptop, clip-on, headphones, mic, etc.), recording in a conducive environment (minimizing noise), editing the recording results (cutting or adding sound), testing and reviewing the recording results, and the final steps of storage and publication.

Arabic language learning podcasts like "ArabicPod101" and "Learn Arabic Podcast" provide downloadable content that can be listened to offline, enabling students to learn independently and track their progress. Radio, known as "al-midzya" in Arabic, has evolved into podcasts in the digital era, maintaining its primary function as a broadcasting medium.

Recording audio in MP3 format can be done using smartphone applications like voice recorder. Podcasting requires internet for publication, making the recorded content accessible to anyone. Despite the seemingly simple process of creating audio media, there are several stages to consider in order to produce quality audio. These stages include planning the content, collecting and sorting materials, preparing a draft, selecting software, setting up recording equipment, recording in a conducive environment, editing the recording, testing and reviewing the results, and finally, storage and publication.

Podcasts for learning Arabic, such as "ArabicPod101" and "Learn Arabic Podcast," offer flexible learning options with downloadable and offline-accessible materials. The evolution of radio into podcasts in the digital era utilizes the internet for publication, enabling wide access. Despite appearing simple, creating audio media requires careful planning and execution to produce quality recordings, including content planning, software selection, equipment preparation, recording in conducive environments, editing, and publication.

4. Simulation-Based Learning for Arabic

Simulation-based learning for Arabic language, such as "Arabic Virtual Classroom" and "Arabic Language Lab," offered an interactive and realistic learning environment. These simulations allowed students to interact with teachers and peered in situations that closely resemble real-life scenarios.

All research indicates that the utilization of technology in Arabic language learning had a positive impact on student outcomes. Various applications and platforms such as Google Classroom, Zoom Meeting, Plotagon, and Kahoot! were used to create interactive and engaging learning experiences. Research results showed that technology-based learning media could enhance students' interest, motivation, and overall learning outcomes. The use of this technology could create a more dynamic learning environment, increase student motivation, and provided access to a wider range of resources. However, it was important to ensure that the use of this technology was well integrated into the learning context and supported by effective teaching strategies (Azhar, 2023).

Arabic language learning simulations such as "Arabic Virtual Classroom" and "Arabic Language Lab" offer interactive and realistic learning environments, allowing students to interacted with teachers and peered in authentic situations. Research indicated that technology in Arabic language learning, through applications like Google Classroom, Zoom, Plotagon, and Kahoot!, had a positive impact on student learning outcomes. This technology enhanced students' interest, motivation, and learning outcomes by creating dynamic learning experiences and providing access to various resources. However, the integration of technology must be accompanied by effective teaching strategies to maximize its benefits.

The use of simulations and technology in Arabic language learning created an interactive learning environment, enhancing students' interest, motivation, and learning outcomes. Applications like Google Classroom and Zoom enrich the learning experience but must be integrated effectively and supported by effective teaching strategies for optimal results.

5. Games for learning Arabic

Games for learning Arabic, such as "Arabic Memory Game" and "Arabic Crossword Puzzle," offered entertaining and interactive learning materials. These games enabled students to learn Arabic independently and tracked their progress through evaluation features.

The instructional games model was one method in multimedia-based computer-assisted learning. The goal of instructional games was to provide an environment that enhanced students' learning capabilities. While instructional games don't need to replicate reality, they should present enjoyable challenges for students. Among the models discussed above, the tutorial model is particularly suitable for developing interactive learning media. This was because the tutorial model's components were designed for self-directed learning, allowing learners to operate the media anytime and anywhere. The used of well-designed learning media could benefit education nationwide, highlighting the need for effective media production methods.

One research method used to develop a product that meets the criteria of validity, practicality, and effectiveness is the 4-D model, proposed by S. Thiagarajan, Dorothy S. Semmel, and Melvyn I. Semmel. According to Thiagarajan et al. (Trianto, 2011), this model consists of four stages: defining (define), designing (design), developing (develop), and disseminating (disseminate). The use of this model ensures

efficiency and reliability, as the media undergo validation by experts in media, language, and content before being disseminated for effective use (Mudinillah, 2019).

Learning games in Arabic such as "Arabic Memory Game" and "Arabic Crossword Puzzle" offerd entertaining and interactive materials, enabling students to learn independently while monitoring their progress through evaluation features. The game-based learning model was an effective method in interactive multimedia learning. The goal of instructional games was to create a challenging and enjoyable learning environment, enhancing students' abilities. This model doesn't need to replicate reality but should provide engaging challenges.

The tutorial model was suitable for developing interactive learning media, designed for self-paced learning. Well-designed learning media could aid education in various regions. Effective development methods, such as the 4-D model proposed by Thiagarajan, Semmel, and Semmel, involve four stages: defining, designing, developing, and disseminating. This model was considered efficient because the media undergo validation before distribution, ensuring its validity, practicality, and effectiveness.

Games for learning Arabic like "Arabic Memory Game" and "Arabic Crossword Puzzle" offer fun and interactive learning experiences, supporting self-learning and student progress monitoring. Game-based learning models, especially those employing a tutorial approach, are effective in enhancing student skills by presenting engaging challenges. Effective development of learning media, such as the 4-D model, ensures the validity, feasibility, and effectiveness of the media before use, promoting broader and more equitable access to education.

6. Learning based on Virtual Reality (VR) and Augmented Reality (AR)

Virtual Reality (VR) and Augmented Reality (AR) based learning such as "Arabic Virtual Reality" and "Arabic Language VR" offered interactive and realistic learning materials. This type of learning allowed students to interact with environments similar to real-life situations.

Virtual Reality (VR) and Augmented Reality (AR), using VR and AR in Arabic language learning can create immersive (De Freitas et al., 2010; Kuhail et al., 2022), engaging, and interactive learning experiences (Kuswinardi et al., 2023). Students can "communicate" with virtual characters or participate in Arabic language situations. Sixth, online collaboration allowing students to interact with their peers learning Arabic language worldwide. This can enhance speaking skills and expose them to various accents and speaking styles. Seventh, tracking student learning progress, where digital learning management systems enable instructors to track student progress more efficiently (Melati et al., 2023).

Virtual Reality (VR)-based learning such as "Arabic Virtual Reality" and "Arabic Language VR" offered interactive and realistic materials, allowing students to interact with environments similar to real-life situations. The use of VR and Augmented Reality (AR) in Arabic language learning creates immersive, engaging, and interactive learning experiences. Students could communicate with virtual characters and participate in Arabic language situations, enhancing speaking skills and exposure to various accents. Additionally, online collaboration enabled

interaction with fellow students worldwide, and digital learning management systems facilitate tracking of student progress.

Arabic language learning based on VR and AR offers immersive, interactive, and realistic learning experiences, enhancing language skills and exposure to various accents. Online collaboration and progress tracking through digital systems enrich the learning process and facilitate monitoring of student development.

CONCLUSION

It can be concluded that technology plays a primary role in supporting the success of learning through the applications, platforms, and media used. The ease of access and sophistication of features continue to be utilized to facilitate communication, initiate learning, deliver materials, and provide evaluations in this digital-based learning. Technology continued to demonstrate its role through the success of distance learning today, unimpeded by reasons of distance, space, and time. Various applications, videos, podcasts, simulations, games, virtual reality-based learning, and augmented reality can help students understand the structure of the Arabic language commonly used in various situations. The utilization of technology was an essential aspect inseparable from digital-based learning.

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