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THE ROLE OF DIGITAL LITERACY IN ARABIC LANGUAGE LEARNING IN THE ERA OF INDUSTRIAL REVOLUTION 4.0

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ABSTRACT

The development of technology in the era of the Industrial Revolution 4.0 brings significant changes in the world of education, including in Arabic language learning. Digital literacy is an important skill that supports the teaching and learning process effectively and innovatively. This study aims to analyze the role of digital literacy in improving the quality of Arabic language learning at various levels of education. The research method used is a descriptive qualitative approach with data collection through interviews, observations, and literature studies. The results show that digital literacy facilitates access to learning resources, increases student motivation, and enables the application of technology-based learning methods such as e-learning and blended learning. In addition, the ability to integrate technology in Arabic learning helps students understand the material more interactively and contextually. This study concludes that digital literacy plays an important role in creating a more dynamic and adaptive learning experience according to the needs of the times. Therefore, it is necessary to develop digital literacy skills for educators and learners to optimize Arabic learning outcomes in the digital era.

A. INTRODUCTION

The era of Industrial Revolution 4.0 is characterized by the rapid development of digital technology that affects almost all aspects of life, including education. In the context of Arabic language learning, technology integration is a must so that the teaching and learning process can run more effectively and be relevant to the times. The utilization of digital technology in education opens up new opportunities for learners and educators in accessing, understanding, and applying language concepts in a more interactive and interesting way.

Digital literacy is an essential skill for learners to face the challenges of modern education. Digital literacy not only includes the ability to access information through digital devices, but also involves critical understanding of information sources, utilization of technology for learning, and ethics in communicating in the digital world. In Arabic language learning, digital literacy allows students to utilize various online platforms, educational applications, and interactive media that support a more contextual understanding of the language.

Arabic as an international language used in various fields, such as academics, religion, and diplomacy, requires innovative learning approaches. Conventional learning methods that are still centered on textbooks and lecture methods are often less effective in improving students' language skills, especially in speaking and listening aspects. Therefore, the use of digital technology in Arabic language learning can be a solution to overcome the existing obstacles and improve the quality of learning.

A number of studies have shown that utilizing technology in language learning can increase students' motivation and engagement in the learning process. Technology-based applications such as e-learning, interactive platforms and audiovisual media are proven to help students understand vocabulary, grammar and pronunciation more easily. In addition, the use of technology in Arabic learning also allows for project-based learning, collaboration, and simulation that can enrich students' learning experience.

However, the implementation of digital literacy in Arabic language learning also faces various challenges. Not all educators and learners have adequate digital skills to utilize technology optimally. In addition, uneven technological infrastructure in some areas can be an obstacle in the implementation of digital-based learning. Therefore, there is a need for strategies and policies that support the strengthening of digital literacy for all parties involved in the learning process.

In the context of formal education, strengthening digital literacy can be done through training for educators in integrating technology in teaching. A curriculum that is adaptive to technological developments also needs to be implemented so that students are accustomed to using digital devices as learning tools. In addition, collaboration between educational institutions, the government, and educational technology developers can accelerate the process of digitizing Arabic language learning.

Apart from formal education, digital literacy also plays an important role in non-formal and informal learning. Many students are now learning Arabic independently through digital platforms such as YouTube, language learning apps and online discussion forums. With wide access to information, learning Arabic becomes more flexible and can be tailored to the needs of each individual. This shows that digital literacy is not only a necessity in a school or campus environment, but also in lifelong learning.

In line with technological developments, the future trend of Arabic language learning is predicted to be increasingly digital-based. Artificial Intelligence (AI), Augmented Reality (AR), and Virtual Reality (VR) are being used to create a more immersive and interactive learning experience. Therefore, an understanding of digital literacy is not only limited to the use of current technology, but also the readiness to face future innovations.

In addition, the role of digital literacy in Arabic language learning can also be seen from how technology helps improve language skills more thoroughly. In language learning, there are four main skills that must be mastered, namely listening (*istima'*), speaking (*kalam*), reading (*qira'ah*), and writing (*kitabah*). With digital technology, students can access various audio and video-based learning materials to improve listening and speaking skills. Meanwhile, interactive learning platforms such as e-books and grammar apps can help in improving reading and writing skills.

On the other hand, digital technology also enables better personalization of learning for each student. With adaptive learning platforms, individuals can learn at their own pace and learning style. This is especially important in Arabic language learning, as each student has a different level of understanding and ability. By using Artificial Intelligence (AI) and machine learning-based applications, the technology can provide automatic feedback and recommend materials that suit students' needs.

Furthermore, digital literacy also plays a role in extending the reach of Arabic language learning to the global community. Through online classes, webinars and international discussion forums, students can interact with native speakers as well as other learners from different countries. This not only improves direct language skills, but also introduces the cultural aspects that are inherent in the Arabic language itself. This interaction is an added value that cannot be obtained from traditional learning methods.

However, although various benefits can be obtained from the integration of digital literacy in Arabic language learning, there are other challenges that need to be considered, namely aspects of digital ethics and security. With the increasing number of information sources available on the internet, students must have the ability to sort and analyze valid information and avoid hoaxes. In addition, the use of technology in learning must also be balanced with an understanding of digital ethics, such as how to communicate well in cyberspace and awareness of the importance of personal data privacy.

Considering all these aspects, it is important for education to continue developing strategies to optimize the use of digital literacy in Arabic language learning. Support from various parties, including the government, educational institutions, and technology developers, is needed to create a more modern and inclusive learning ecosystem. With the right utilization of technology, learning Arabic in the era of the Industrial Revolution 4.0 will not only be more effective, but also more interesting and relevant for current and future generations.

Based on this background, this study aims to examine the role of digital literacy in improving the quality of Arabic language learning in the era of the Industrial Revolution 4.0. By understanding the benefits, challenges, and implementation strategies, it is hoped that the results of this study can contribute to developing Arabic language learning methods that are more modern, effective, and in accordance with the needs of the times.

B. METHOD

This research uses a qualitative descriptive approach to analyze the role of digital literacy in Arabic language learning in the era of the Industrial Revolution 4.0. This approach was chosen because the research aims to understand the phenomenon in depth by describing the conditions, challenges, and benefits of using technology in Arabic language learning. Data were collected through observations, interviews, and literature studies to obtain a more comprehensive picture of the implementation of digital literacy in the context of learning.

1. Research Subjects and Locations

This research was conducted in several educational institutions that apply digital technology in Arabic language learning, such as madrasah, pesantren, and universities. The research subjects consisted of Arabic language teachers/lecturers, students, and developers of educational technology related to Arabic language learning. The selection of subjects was done purposively, namely based on their involvement in the use of digital technology in learning.

2. Data Collection Technique

Data was collected through several techniques, namely: Observation: Researchers directly observed how digital technology was used in Arabic language learning in the classroom, including the methods applied as well as students' responses to the technology. Interview: Interviews were conducted with teachers/lecturers, students, and technology developers to get their perspectives on the benefits and challenges in implementing digital literacy in Arabic language learning. Literature Study: This research also refers to various journals, books and academic articles that discuss digital literacy and Arabic language learning to enrich the analysis.

3. Data Analysis Technique

The data obtained was analyzed using the thematic analysis method, which involves the process of grouping data based on certain themes. The stages of analysis included:

- a. Data Reduction: Selecting and simplifying data relevant to the research focus.
- b. Data Presentation: Organizing data in the form of a descriptive narrative that describes the research findings.
- c. Inference: Interpreting data to gain an understanding of the role of digital literacy in Arabic language learning.

4. Data Validity

To ensure the validity of the data, this study used source triangulation techniques, which compared data from various sources (teachers, students, and academic literature). In addition, method triangulation was conducted, comparing the results of observations, interviews, and literature studies to obtain more accurate and objective findings.

5. Research Limitations

This study has several limitations, including limited location coverage and different variations in technology use in each educational institution. In addition, factors such as educators' readiness to integrate technology and the accessibility of digital infrastructure are also challenges that affect the results of the study.

Through the methods described, this research is expected to provide a clear picture of how digital literacy plays a role in improving the quality of Arabic language learning and provide recommendations for the development of more effective and innovative learning methods in this digital era.

C. RESULT AND DISCUSSION

Digital literacy has brought significant changes in Arabic learning methods, especially in the era of Industrial Revolution 4.0. The integration of technology in the learning process allows students to access wider and more diverse learning resources. With the existence of interactive learning applications, e-books, learning videos, as well as social media, students have the opportunity to learn more flexibly without being limited by time and space. This technology also allows students to learn in a more enjoyable way and according to their own learning style.

One of the main benefits of digital literacy in Arabic language learning is the improvement of speaking and listening skills (*istima'* and *kalam*). Artificial intelligence-based apps such as Duolingo, Memrise and Quranic App allow students to practice pronunciation of Arabic words with voice recognition features. In addition, video platforms such as YouTube and Arabic podcasts provide a live learning experience from native speakers, which is very helpful in understanding the correct accent and intonation.

In addition to the oral skills aspect, digital literacy also plays a role in improving reading and writing skills (*qira'ah* and *kitabah*). E-books and Arabic grammar apps help students understand language structures more systematically. The use of autocorrect features and online translators also facilitate the learning process, although in-depth understanding is still needed so that students do not rely entirely on these tools. This technology allows learning to be more adaptive, where students can repeat material according to their needs.

Another advantage of implementing digital literacy is its ability to create a more interactive learning experience. With platforms such as Google Classroom, Edmodo and Moodle, teachers can give assignments, conduct evaluations and communicate with students more effectively. In addition, gamification features in some Arabic learning apps increase students' motivation to learn in a more fun method. Points, badges and leaderboards in these apps provide a sense of achievement and healthy competition among students.

However, while digital literacy provides many benefits, there are some challenges that need to be overcome. One of the main challenges is the readiness of educators to adopt digital technology. Not all teachers have sufficient skills in utilizing technology in learning, so continuous training and mentoring is needed. The curriculum must also be adjusted to be in line with technological developments without losing the essence of conventional Arabic language learning.

Apart from the readiness of educators, infrastructure factors are also an obstacle in the implementation of digital literacy. Not all educational institutions have adequate access to technological devices and stable internet connections. This is especially

challenging for schools in remote areas. Therefore, support from the government and related parties is needed to provide adequate facilities to ensure that all students can benefit from digital literacy in learning.

Another aspect that also needs to be considered is digital safety and ethics in learning Arabic. With the increasing amount of information available online, students need to be equipped with the ability to sort and analyze information so as not to be trapped in misinformation or fake news. In addition, ethics in communicating online is also an important part of digital literacy so that interactions in learning platforms continue to take place properly and in accordance with educational values.

Furthermore, the implementation of digital literacy in Arabic language learning also provides opportunities for global collaboration. Students not only learn from teachers at school, but can also join communities of Arabic learners from different countries. This allows them to exchange experiences, broaden their cultural horizons and improve their communication skills in Arabic in real time. With online classes and international discussion forums, Arabic language learning is no longer limited to conventional classrooms.

In line with these developments, digital-based curriculum development must continue to be carried out in order to accommodate the needs of students in facing the challenges of the digital era. Project-based learning and problem-based learning models that integrate technology can be effective approaches in improving Arabic language skills in a more contextualized manner. Thus, students not only learn theory, but are also able to apply their skills in various practical situations.

Overall, digital literacy has a very important role in learning Arabic in the era of the Industrial Revolution 4.0. With the optimal utilization of technology, learning Arabic can be more effective, interactive, and fun. However, to ensure successful implementation, there needs to be synergy between educators, educational institutions, government, and technology developers. With the right support, digital literacy can be a powerful tool in improving the quality of Arabic learning and making it more relevant for future generations.

This research reveals that digital literacy plays a significant role in improving the effectiveness of Arabic language learning in the era of Industrial Revolution 4.0. From observations and interviews, it was found that most students feel more motivated in learning when using digital technology compared to conventional methods. The use of interactive applications such as Duolingo, Al-Muqaddimah, and Quranic App proved to be able to improve reading, writing, listening, and speaking skills in Arabic.

Teachers and lecturers interviewed also acknowledged that the utilization of digital technology in learning provides a more dynamic and flexible learning experience. Most teachers stated that students are more active in discussing and practicing Arabic when using digital platforms compared to traditional learning methods. This is due to the interactive features that allow students to learn independently and get immediate feedback.

The study results also show that the utilization of social media as a means of learning Arabic is increasing. WhatsApp and Telegram groups are used as discussion

rooms and to share materials, while Instagram and TikTok are used to present learning content in an interesting visual format. In fact, some students admitted that it was easier to understand vocabulary and grammar through short video content compared to reading textbooks.

However, this study also found that there are some challenges in implementing digital literacy in Arabic language learning. One of the main obstacles is the limited access to technology, especially for students who come from remote areas or schools with minimal technological facilities. Unstable internet connection and lack of devices such as laptops and tablets become obstacles for some students in accessing online learning materials.

Another challenge found is the readiness of educators to integrate technology into the learning process. Although many teachers are aware of the benefits of digital literacy, there are still some of them who have difficulties in operating learning applications. This shows the need for continuous training and mentoring so that teachers can more effectively utilize technology to teach Arabic.

In terms of learning effectiveness, this study found that students who actively use digital technology tend to have better Arabic language skills compared to those who still rely on conventional methods. This can be seen from the results of the evaluations conducted during the study, where students who were accustomed to using Arabic learning apps scored higher in the language skills test.

The research also revealed that the use of artificial intelligence (AI)-based technology in Arabic language learning has a significant positive impact. Some students reported that the voice recognition feature in the learning app helped them to correct pronunciation (*makharijul huruf*) more accurately. In addition, the automatic translation feature also helped them understand Arabic texts more quickly.

However, there are several aspects that need to be considered in the use of digital technology. One of them is the potential dependency of students on technology so that they practice less independently without the help of digital devices. Some teachers also noted that while technology is helpful in improving students' communication skills, a more balanced approach between digital and face-to-face learning is needed for optimal results.

In terms of learning methods, this study found that project-based learning and problem-based learning models that integrate technology are more effective in improving students' understanding of Arabic. With these methods, students not only understand the theory, but can also apply their language skills in real situations, such as making Arabic videos or participating in online discussion forums with native speakers.

Overall, the results of this study show that digital literacy has a positive impact on Arabic language learning, both in terms of motivation, effectiveness, and flexibility in learning. However, to achieve optimal results, it requires support from various parties, including educators, educational institutions, and the government in providing adequate infrastructure and technology training for teachers. Thus, digital literacy can be maximally utilized to improve the quality of Arabic language learning in this digital era.

D.CONCLUSION

This research shows that digital literacy has a significant role in improving the effectiveness of Arabic language learning in the era of Industrial Revolution 4.0. With digital technology, students can access various learning resources that are more interactive and flexible, such as learning applications, social media, and e-learning platforms. The use of this technology is also proven to improve Arabic language skills, both in the aspects of reading, writing, listening, and speaking.

However, the implementation of digital literacy in Arabic language learning still faces several challenges, such as limited access to technological devices and the internet, as well as the readiness of educators in adopting digital technology. Therefore, continuous training for teachers is needed so that they can optimize the use of technology in the learning process. In addition, adequate infrastructure support is also an important factor so that all students can benefit from digital-based learning.

The study also found that learning methods that integrate technology, such as project-based learning and problem-based learning, are more effective in improving students' understanding of Arabic. With these learning models, students not only understand language theories, but can also apply them in more real-world contexts, such as online discussions with native speakers or Arabic content creation.

Overall, digital literacy is a very potential tool in improving the quality of Arabic language learning. However, to achieve optimal results, synergy between educators, students, educational institutions and the government is needed in creating a supportive learning environment. With the right approach, digital literacy can be an innovative solution in developing Arabic language skills in this digital era.

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