

The Utilization of Virtual Technology Post-Pandemic in Arabic Language Learning for Postgraduate Students at UIN Maulana Malik Ibrahim Malang

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Abstract

Post-Covid-19 pandemic, virtual technology is no longer merely a solution for online learning but has become an integral part of modern education. Students of the Arabic Language Education (PBA) postgraduate program at UIN Maulana Malik Ibrahim Malang frequently utilize online platforms in learning activities to support teaching and learning processes, including discussions, presentations, assignment submissions, and evaluations. This study aims to describe the utilization, advantages, and disadvantages of virtual media technology in Arabic language learning among PBA postgraduate students after the pandemic. The study employs a mixed-method approach, combining qualitative and quantitative descriptive methods. Data were collected through unstructured interviews and questionnaires distributed to PBA postgraduate students. The findings reveal that students utilize virtual technology such as video conferencing platforms like Zoom and Google Meet for interactive learning, language learning applications like Duolingo for self-directed skill improvement, and digital dictionaries for flexible material access and vocabulary comprehension. Online discussion forums like WhatsApp are also used for collaboration and information exchange. Furthermore, students experience several advantages of virtual technology in learning Arabic, including time and place flexibility, easy access to learning materials, online interaction with teachers and peers, multimedia utilization, and self-paced learning. However, students also face challenges, including poor internet connections, limited direct interaction with instructors, difficulties understanding material online, lack of motivation for independent study, and insufficient opportunities for speaking practice.

Keywords: Virtual Technology; Arabic Language Learning; Post-Pandemic.

مستخلص البحث

بعد جائحة كوفيد-19، لم تعد التكنولوجيا الافتراضية مجرد حلٍ للتعلُّم عن بُعد، بل أصبحت جزءًا لا يتجزأ من التعليم الحديث. ويستخدم طلاب برنامج ماجستير تعليم اللغة العربية في جامعة مولانا مالك إبراهيم مالانج المنصات الإلكترونية بشكل متكرر في الأنشطة التعليمية لدعم عمليات التعليم والتعلُّم، بما في ذلك المناقشات، والعروض التقديمية، وتسليم الواجبات، والتقويمات. يهدف هذا البحث إلى وصف استخدام تكنولوجيا الوسائط الافتراضية، وبيان مزاياها وعيوبها في تعليم اللغة العربية لدى طلاب الدراسات العليا في قسم تعليم اللغة العربية بعد الجائحة. ويعتمد هذا البحث على المنهج المختلط الذي يجمع بين المنهج الوصفي النوعي والمنهج الوصفي الكمي. وقد جُمِعَت البيانات من خلال مقابلات غير منظمة واستبيانات وُزِّعَت على طلاب الدراسات العليا في القسم. وقد أظهرت النتائج أن الطلاب يستخدمون التكنولوجيا الافتراضية مثل منصات المؤتمرات المرئية كـ"زووم" و"جوجل ميت" للتعلُّم التفاعلي، وتطبيقات تعلُّم اللغات

مثل "دولينجو" لتحسين المهارات بشكل ذاتي، والمعاجم الرقمية للوصول المرن إلى المواد وفهم المفردات. كما تُستخدم المنتديات النقاشية الإلكترونية مثل "واتساب" في التعاون وتبادل المعلومات. ومن ناحية أخرى، يتمتع الطلاب بعدة مزايا لاستخدام التكنولوجيا الافتراضية في تعلّم اللغة العربية، مثل المرونة في الزمان والمكان، وسهولة الوصول إلى المواد التعليمية، والتفاعل الإلكتروني مع الأساتذة وزملاء، واستخدام الوسائط المتعددة، والتعلّم الذاتي حسب وتيرة الطالب. ومع ذلك، يواجه الطلاب أيضًا تحديات متعددة، منها ضعف الاتصال بالإنترنت، وقلة التفاعل المباشر مع المدرسين، وصعوبة فهم المواد إلكترونياً، وانخفاض الدافعية للتعلّم الذاتي، وقلة الفرص لممارسة مهارة الكلام.

كلمات أساسية: التكنولوجيا الافتراضية؛ تعليم اللغة العربية؛ ما بعد الجائحة.

Introduction

Education in the current era of the Industrial Revolution requires learning tools that are not only easily accessible but also of high quality. Previously, primary learning tools were limited to physical materials such as textbooks, modules, and worksheets, which made the teaching and learning process less effective (Ananda Muhamad Tri Utama, 2022) (Doringin, Tarigan, & Prihanto, 2020). The reliance on physical materials often encounters obstacles such as high costs, time-consuming processes, and excessive paper usage, thereby limiting learning opportunities for many students (Erland Hamzah, 2015). However, with the emergence of the new industrial era, the distribution of information has undergone a significant transformation. Modern technologies such as the internet and digital platforms have enabled broader and faster access to a wide range of learning resources. This shift not only enhances the quality of education but also transforms social patterns, as individuals can now interact and learn in more flexible and dynamic ways (Rahman et al, 2023).

Virtual technology plays a vital role in the field of education, especially in the post-pandemic era. Its primary aim is to enhance the accessibility and flexibility of the learning process, allowing students to access materials anytime and anywhere. Virtual technology fosters interactivity through real-time discussions and student collaboration, thereby creating a supportive learning environment (Revianti and Anggoro, 2022). The direction of virtual technology in education is increasingly evolving toward more interactive, personalized, and accessible learning. Although challenges remain such as the cost of hardware and uneven technological infrastructure the future of virtual technology in education is projected to become increasingly significant in providing rich and meaningful learning experiences (Najjar and Oktasari, 2023).

The application of technology in education has become a necessity in responding to the demands of a changing era. In Arabic language learning, the integration of technology is not merely an innovation, but a necessity to expand reach and enhance teaching effectiveness (Adib, 2024). This can lead to significant

changes in a teacher's instructional methods in Arabic language learning. Moreover, the use of technology provides opportunities to explore various innovative approaches and enhances access to learning resources (Azhar et al., 2023). Therefore, the application of technology in education particularly in Arabic language learning is a necessity that not only expands reach but also enhances teaching effectiveness. The integration of technology brings significant changes to instructional methods, enables the exploration of various innovative approaches, and improves access to learning resources.

Given the importance of technology in learning, educators must play a key role in mastering educational technology, as it is a crucial factor in ensuring the successful integration of technology into the teaching and learning process. An educator who possesses strong skills and knowledge of various digital tools and platforms will be better equipped to effectively integrate technology into instructional activities (Sholihah et al., 2022). Therefore, it is essential for educators to remain committed to continuously learning and applying technology both inside and outside the classroom. In addition, social context also influences the use of technology in education supportive environments and access to technology facilitate both teachers and students in adapting to new innovations. When educators are able to keep up with technological advancements and overcome potential challenges, they can create more engaging and relevant learning experiences for their students.

The use of technology in learning facilitates material comprehension and improves efficiency by supporting distance learning. In line with this, a study conducted by (Wibawa & Pritandhari, 2020) with results indicating that the use of technology in learning across various digitally conducted activities can be both effective and efficient. Another study (Dabbagh & Kitsantas, 2012) stated that the use of technology in learning not only increases student engagement but also helps build a stronger learning community, where students can share knowledge and experiences with one another. A study conducted by (Rohmawaty et al., 2024) found that postgraduate students at UIN Maulana Malik Ibrahim Malang in 2023 had implemented various types of Artificial Intelligence to support the Arabic language learning process, such as virtual assistants, machine translation, ChatGPT, and others. This indicates that the postgraduate students at UIN Maulana Malik Ibrahim Malang are utilizing technology to enrich their Arabic language learning experience.

After the pandemic ended, the use of technology underwent a significant transformation in various aspects of life, particularly in the field of education (Khairi et al., 2022). One example of this transformation is the use of online learning platforms such as Zoom, Google Meet, and Microsoft Teams, which enable real-time interaction between lecturers and students despite the absence of face to face meetings (Anwar et al., 2022). In addition, the emergence of interactive learning

applications and virtual simulations has provided a more immersive learning experience. As a result, virtual technology has become increasingly common after the pandemic due to its unique ability to create inclusive and adaptive learning environments. This means that the technology allows students from diverse backgrounds to participate in the learning process without geographical limitations. Therefore, virtual technology not only serves to sustain education during challenging times but also offers opportunities for innovation in future teaching methods.

This study aims to explore how virtual technology can be utilized in Arabic language learning, as well as the advantages and disadvantages of its use. Thus, technology is not only seen as a tool but also as a catalyst for creating more inclusive and adaptive learning experiences. With an innovative approach, Arabic language learning is expected to become more effective, engaging, and responsive to the needs of learners in today's digital era. Through this research, it is hoped that deeper insights will be gained into the potential of virtual technology in enhancing the quality of Arabic language education, along with recommendations for improving curriculum development and teaching methods in the future.

Method

This study employs a mixed method approach, combining qualitative and quantitative methods in a descriptive manner (Hendrayadi, Kustati, and Sepriyanti 2023). The data were collected through a questionnaire distributed via Google Forms, containing several statements related to the utilization of virtual technology in Arabic language learning after the pandemic among postgraduate Arabic Education (PBA) students at UIN Maulana Malik Ibrahim Malang. The questionnaire was distributed to 31 respondents. In addition, unstructured interviews were conducted with informants postgraduate PBA students at the same university to explore their use of digital platforms, including the advantages and disadvantages. The data collection techniques employed in this study included total sampling, which provided a general and representative overview of the population through the questionnaire, and purposive sampling, which enabled an in-depth understanding from informants who met specific relevance criteria (Haryono et al, 2023). The data analysis technique in this study adopts the concept of Miles and Huberman, which provides a framework for data analysis comprising three components: data reduction by selecting information relevant to the needs of document review and questionnaire distribution, data display by presenting results through graphs and narrative mapping, and verification and conclusion drawing by confirming the research findings.

The subjects of this study were 31 postgraduate students of the Arabic Language Education (PBA) program at UIN Maulana Malik Ibrahim Malang in 2024,

who served as the respondents for the exploration of post-pandemic virtual technology utilization in Arabic language learning. The research was conducted by distributing a questionnaire containing statements related to the use of virtual technology in Arabic language learning after the pandemic, in order to obtain the necessary information from the respondents. Additionally, unstructured interviews were carried out regarding the use of digital platforms. The researcher also utilized WhatsApp, particularly through existing group chats, to ensure that the questionnaire form could be easily accessed by the target respondents

Result and Discussion

The Utilization of Virtual Technology as a Medium in Arabic Language Learning among Postgraduate PBA Students at UIN Maulana Malik Ibrahim Malang

Virtual technology plays an increasingly significant role in education due to its ability to create more interactive, personalized, and immersive learning experiences (Isti'ana 2024). With the continuous advancement of technology, the potential of virtual tools in education is expanding significantly supporting not only distance learning, but also project-based learning and more adaptive and personalized educational methods (Miagusttin et al, 2019). This development is transforming education into a more inclusive and widely accessible system.

The research findings, based on questionnaire responses and unstructured interviews, indicate that postgraduate students of the Arabic Language Education (PBA) program at UIN Maulana Malik Ibrahim Malang in 2024, after the pandemic, have implemented several types of virtual technology to support the Arabic language learning process. These include video conferencing platforms, language learning applications, Learning Management Systems (LMS), e-books and audiobooks, digital dictionary applications, online discussion forums, and social media groups. This is further supported by research conducted by (Sholihah, Supardi, & Hilmi, 2019) which shows that virtual technology can support the Arabic language learning process through various tools such as Google Forms, Quizizz, Kahoot, and Quizlet, all of which are categorized under Learning Management Systems (LMS).

1) Platform Video Conference

Platforms such as Zoom and Google Meet have become primary tools in online learning, demonstrating that learning through video conferencing can enhance student engagement and create a more interactive learning experience. Based on the research data (Marsiding, 2021) it was found that the most widely used application or platform by schools for online learning is Zoom. This platform is highly beneficial for Arabic language learning, which requires effective verbal communication.



Figure 1. Learning Activities Using Google Meet and Zoom Platforms

The use of these two platforms offers flexible and effective solutions to meet diverse learning needs, particularly in the context of language learning. Zoom provides richer interactive features, such as breakout rooms for group discussions and annotation tools for live activities. This platform is highly effective for practice-based learning, especially speaking exercises and discussions. However, Zoom requires a more stable internet connection and has time limitations in its free version. On the other hand, Google Meet excels in accessibility and integration with Google Workspace, making collaboration on documents and presentations easier. This platform is suitable for simpler learning activities, such as material explanations or writing exercises. However, its limited interactive features make it less optimal for activities that require in-depth discussions or intensive speaking practice.

2) Learning Management System (LMS)

The use of Learning Management Systems (LMS), such as Moodle, allows for the systematic and structured organization of learning materials. LMS enhances the accessibility of learning resources and facilitates the management of assignments. (Nazika, 2021) In their study, it is explained that Moodle LMS can serve as a viable online learning (e-learning) platform for both students and teachers. In the context of Arabic language learning, LMS helps students access learning materials and interact with lecturers as well as classmates.



Figure 2. Moodle Learning Application

Moodle is an online learning platform that enables lecturers and students to upload, access, and share learning materials virtually. Features such as content delivery, online assignments and exams, discussion forums, and progress tracking

support structured and flexible learning. Moodle also facilitates collaboration through group workspaces and allows students to actively engage with both the content and their peers, making learning more effective and focused. In line with this, based on an interview with a postgraduate PBA student at UIN Malang, DPA stated:

“Students consider the use of Learning Management Systems (LMS), such as Moodle, to be highly beneficial in facilitating access to learning materials and assignments, as well as providing integrated evaluation features that support self-directed learning. Students can also access materials at any time and submit assignments in a structured manner. However, interaction through the Moodle platform remains limited and lacks interactivity”.

Based on the interview results, the use of Moodle as a Learning Management System (LMS) is highly beneficial for students, particularly in facilitating access to materials, assignment submission, and integrated evaluation, all of which support self-directed learning. Students can access materials at any time and submit assignments in a structured manner, thereby increasing learning efficiency. However, interaction through this platform remains limited, as Moodle is primarily focused on managing content and assignments, while offering less support for direct interaction or group discussions. This indicates the need for additional interactive features or integration with other platforms to enhance social engagement and collaboration in the learning process.

3) Language Learning Applications

Applications such as Duolingo and Memrise offer an interactive approach to learning vocabulary and grammar. These learning applications can enhance students' motivation and interest in language learning. This is in line with the research conducted by (Rahmani & Padilah, 2024) Research shows that Arabic language learning applications can enhance learning motivation, provide broader access to materials, and enable more flexible learning. This indicates that postgraduate students can utilize these applications to deepen their understanding of the Arabic language.



Figure 3. Duolingo and Memrise Language Learning Applications

Duolingo and Memrise are effective language learning applications for enhancing language skills independently. Duolingo focuses on learning through interactive exercises such as quizzes, vocabulary introduction, and grammar practice in a game-like format, making it suitable for building daily learning habits. Memrise, on the other hand, stands out with its vocabulary memorization approach using digital flashcards and video content from native speakers, which helps users understand the cultural context of the language being learned. Both applications strongly support flexible language learning; however, they are limited to developing reading and listening skills, which require further guidance.

In line with this, according to an interview with postgraduate PBA student at UIN Malang, E P, the following was stated:

“Students feel that applications like Duolingo and Memrise are very helpful in learning Arabic because they make the learning process more interactive and flexible. These applications assist in expanding vocabulary, practicing pronunciation, and enabling self-directed learning anytime. The gamification features and progress reports within the apps further motivate students to engage in regular independent study. However, these applications have limitations in explaining Arabic grammar and sentence structure.”

Based on the interview results above, students perceive Duolingo and Memrise as highly beneficial for Arabic language learning because they provide an interactive, flexible learning experience and support self-directed study. The gamification features and progress reports within these applications enhance students' motivation to study regularly, particularly in expanding vocabulary and practicing pronunciation. However, these applications have limitations in offering in-depth explanations of Arabic grammar and sentence structure, making them less optimal for understanding more complex grammatical aspects and requiring additional guidance from other sources.

4) Digital Learning Resources

E-books and audiobooks provide flexible alternatives for students to learn. (Khikmawati et al., 2021) It is explained that e-books can help students more easily access learning materials and review them anytime and anywhere. The use of audiobooks in language learning assists students in understanding correct pronunciation and intonation. This is especially relevant in Arabic language learning, which requires precision in pronunciation.

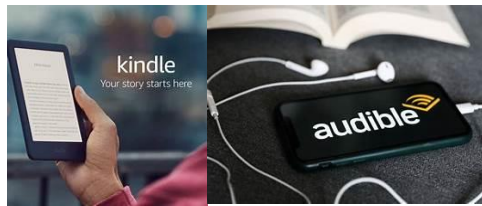


Figure 3. E-Book (Kindle) and Audiobook (Audible) Learning Applications

Learning applications such as E-Book (Kindle) and Audiobook (Audible) provide users with the convenience of accessing reading and learning materials anywhere. Kindle allows readers to access various books and digital materials with features like annotation, word search, and text display customization, which facilitate comprehension. Meanwhile, Audible offers audio-based learning, helping users understand materials through listening, which is especially suitable for auditory learners. Both applications support flexible self-directed learning; however, Audible lacks visual access to materials, while Kindle is less interactive compared to other digital learning media. The combination of both can offer a more comprehensive learning solution.

This aligns with the interview results from a postgraduate PBA student at UIN Malang, N A, who stated the following:

"Students feel that using e-book applications (such as Kindle) and audiobook applications (such as Audible) makes accessing materials very flexible, thereby making Arabic language learning more enjoyable and efficient. These applications support students in self-directed learning, whether by reading or listening to materials while engaging in other activities. However, there are drawbacks, such as difficulty in finding the meanings of complex words and the lack of features for direct discussion with instructors or peers"

Based on the interview results above, e-book applications such as Kindle and audiobook applications like Audible provide high flexibility for students in accessing Arabic learning materials, making the learning process more efficient and enjoyable. These applications support self-directed learning, whether through reading or listening to materials at times and places of their choosing, even while engaging in other activities. However, their limitations lie in the difficulty of directly finding meanings of complex words and the absence of features for discussions with instructors or peers, which may hinder deeper understanding of the material.

5) Discussion Forums and Social Media

Online discussion forums and social media groups can function as collaborative tools that enhance the sense of community among students, such as WhatsApp groups, Telegram groups, and others. This is consistent with students'

perceptions from the study (Zhafira, Ertika, & Chairiyaton, 2020) The most favored online learning media are WhatsApp and Google Classroom. Online discussion forums enable students to ask questions and share knowledge, which can enrich the learning experience.

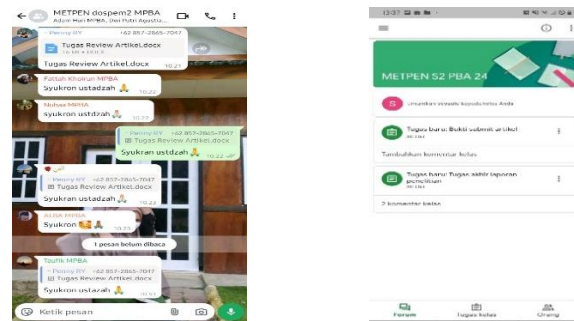


Figure 5. Use of Online Discussion Applications WhatsApp and Google Classroom

Online discussion applications such as WhatsApp and Google Classroom facilitate distance learning by enabling efficient communication and collaboration. WhatsApp allows quick and interactive discussions through text messaging, voice messages, and file sharing, making it ideal for group coordination or instant Q&A. Meanwhile, Google Classroom provides an organized space for managing assignments, uploading materials, and more structured discussions. The combination of these two applications helps create a flexible and responsive learning environment, although WhatsApp can sometimes be less formal, and Classroom requires a stable internet connection for optimal access.

Learning technology plays a crucial role in supporting the educational process, especially in today's digital and post-pandemic era. Various learning platforms have been developed to meet the needs of students and lecturers in accessing learning materials, communicating, and deepening their understanding flexibly and efficiently. The following diagram illustrates the most frequently used platforms in learning, reflecting user choices and preferences in utilizing technology to achieve their learning objectives. This diagram will serve as the basis for further analysis regarding the utilization, advantages, and disadvantages of these various platforms.

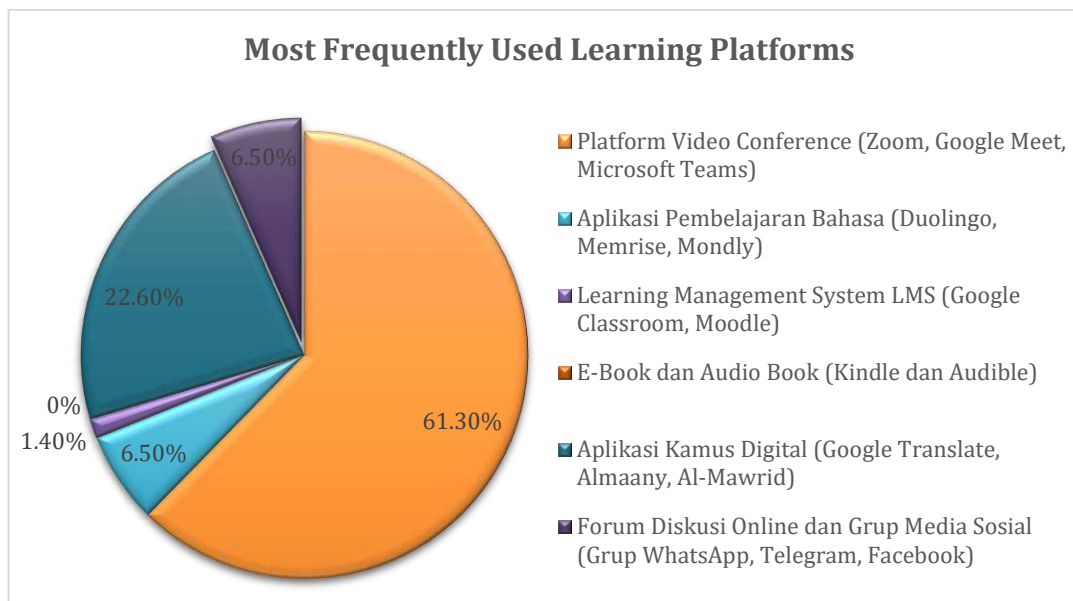


Diagram 1. Technology Utilization Platforms in Learning

Based on the diagram above, the most frequently used learning platforms by postgraduate students at UIN Maulana Malik Ibrahim Malang are video conferencing platforms such as Zoom, Google Meet, and Microsoft Teams, with a dominant percentage of 61.3%. This indicates that virtual real-time interaction is the preferred or necessary primary learning method, likely because it supports real-time communication between lecturers and students (Maulah, S, Nurul, F., & Ummah, 2020). Additional features provided by these platforms, such as screen sharing, virtual whiteboards, and breakout rooms, also help enrich the learning experience. The ability to share visual materials in real time allows students to better understand more abstract concepts (Setiawan, Nabila Wijati, & Ana, 2023). On the other hand, features such as meeting recordings enable students who cannot attend live sessions to still follow the learning materials.

Meanwhile, digital dictionary applications such as Google Translate, Al-Maany, and similar platforms are used by 22.6% of respondents. This reflects the importance of quick access to translation resources or word definitions, possibly to support language learning or to aid in understanding complex terms. Additionally, digital dictionary applications offer ease of access anytime and anywhere, supporting flexibility in the learning process (Chamalah & Azizah, 2021). Students can immediately look up the meanings of unfamiliar words while attending lectures, reading literature, or completing assignments. Automatic translation features, such as those in Google Translate, also assist them in understanding more complex texts, although the translations often require further refinement (Taqiyya et al., 2024).

The use of Learning Management Systems (LMS) such as Google Classroom and Moodle accounts for 6.5%, indicating that although LMS provides a structured

framework for organizing materials, quizzes, and assignments, its usage is still lower compared to video conferencing platforms. LMS plays an important role in arranging and managing materials more systematically, offering a space for more organized and well-documented learning (Tinambunan et al, 2023). This is especially important for classroom administration management and learning outcome evaluation, which can help lecturers organize the teaching process more efficiently. Therefore, the LMS remains an important supporting tool for administrative and organizational aspects of learning (Arifin, 2022).

The rest consists of Online Discussion Forums and Social Media Groups with a small percentage of 3.2%, indicating the secondary role of these platforms in the learning process. Online discussion forums, designed to bring students together in text-based discussions, allow for deeper and more structured exchange of ideas and opinions. Other categories such as Language Learning Applications and E-Books and Audiobooks are not very popular in daily use, each with 3.2%, which may indicate that although these platforms are beneficial, postgraduate students at UIN Maulana Malik Ibrahim Malang use them more as supporting sources rather than main platforms in their learning activities.

Advantages and Disadvantages of Virtual Technology as a Media in Arabic Language Learning for Postgraduate Students at UIN Maulana Malik Ibrahim Malang

The presence of virtual technology as an impact of the pandemic has brought many benefits in various aspects of life. In the field of education, virtual technology supports remote collaboration, enabling people to learn together in a digital space even though they are in different location (Bonafix & Nediari, 2022). Thus, virtual technology expands the boundaries of human interaction with the digital world, creating new opportunities in various fields. The following diagram provides an overview of the advantages experienced by PBA Postgraduate students at UIN Maulana Malik Ibrahim Malang in using this technology.

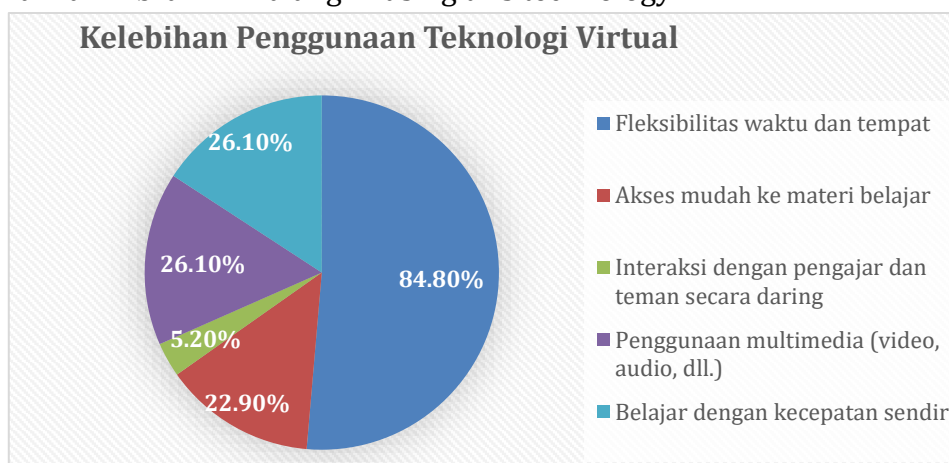


Diagram 2. Benefits of Virtual Technology in Learning

Based on the diagram above, the main benefits experienced by the postgraduate students of UIN Maulana Malik Ibrahim Malang, accounting for 84.80% of the use of virtual technology in Arabic language learning, are as follows:

1. Flexibility of time and place. This shows that the ability to learn anywhere and anytime is a major advantage for students in online learning. This flexibility also supports students who live far from campus, reducing the time and costs usually required for travel (Helly, Rahmadani, & Syayidi, 2024). Moreover, for postgraduate students who often have more complex professional or personal commitments, the ability to access course materials and participate in discussions without having to be physically present in the classroom becomes highly valuable.
2. Learning at their own pace. Postgraduate PBA students at UIN Maulana Malik Ibrahim Malang experience the benefits of using online platforms, namely the ability to learn at their own speed, which is very useful and advantageous for students who have other activities outside academics, such as work or family responsibilities (Angga, 2014). Moreover, this feature provides a sense of comfort and reduces stress, as students do not feel pressured to keep up with a learning pace that may not align with their abilities or needs.
3. Easy access to learning materials. Postgraduate PBA students at UIN Maulana Malik Ibrahim Malang believe that easy access to teaching materials is highly significant. This serves as an indicator that virtual technology enhances accessibility to learning resources online. It also implies that each student has their own unique learning style and pace (Mustafa & Gusdiyanto, 2023). In online learning, they can revisit difficult materials or spend more time exploring specific topics without being rushed to follow the pace set by the lecturer or a conventional class schedule.
4. Postgraduate students at UIN Maulana Malik Ibrahim Malang consider the use of multimedia such as videos and audio to be an important benefit. Videos allow students to see explanations and illustrations directly, which can facilitate the understanding of complex concepts. Meanwhile, audio enables them to listen to explanations and discussions flexibly (Nurdyansyah, 2015). For example, while doing other activities. The use of multimedia also helps accommodate various learning styles; some students may find it easier to understand material through visual and audio formats rather than written texts.

Interaction with lecturers and peers online is also one of the benefits felt by postgraduate students at UIN Maulana Malik Ibrahim Malang, seen as an added value of virtual learning. This data indicates that although social interaction is important, flexibility and personal control over learning are the primary factors preferred by students. Multimedia enriches the learning process in a more dynamic way, while online interaction maintains the quality of academic and social

communication between students and lecturers, which is essential for overall learning success (Hariyadi, Misnawati, & Yusrizal, 2019).

Although virtual technology facilitates the learning process by enhancing accessibility, time flexibility, and expanding learning resources (Ilham, 2024). However, this technology also has several drawbacks that can affect the effectiveness of Arabic language acquisition and classroom interaction. The following diagram illustrates the weaknesses perceived by Postgraduate PBA students at UIN Maulana Malik Ibrahim Malang in the use of technology.

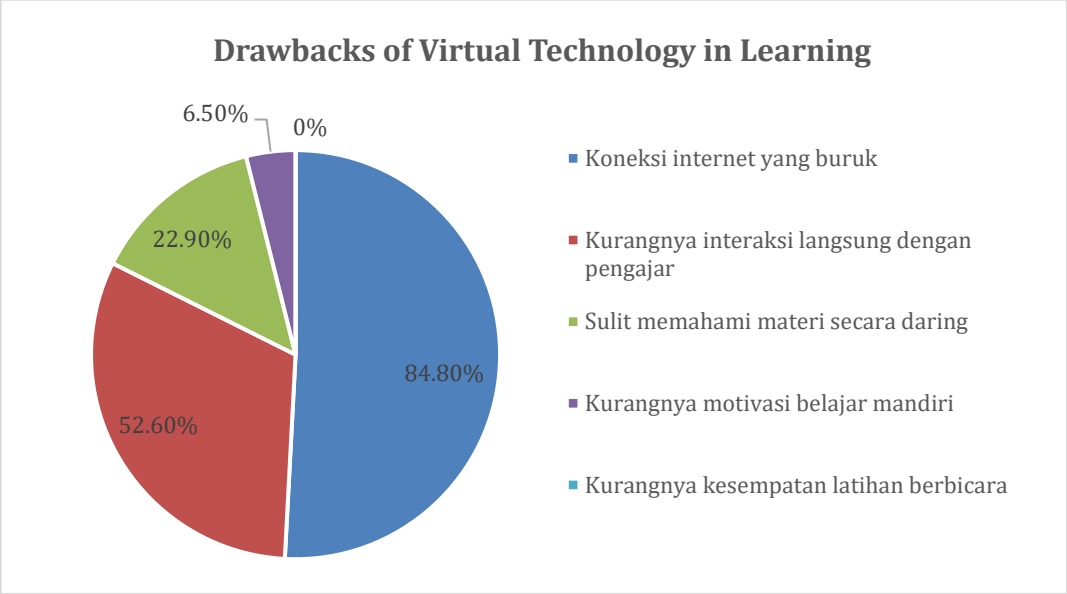


Diagram 4. Drawbacks of Virtual Technology in Learning

Based on the diagram above, it can be seen that the main drawback of virtual technology faced by postgraduate students at UIN Maliki Malang reported by 84.80% of them in Arabic language learning is as follows:

1. *Poor internet connection. Postgraduate PBA students at UIN Maliki Malang identified this as the primary issue. This indicates that internet infrastructure remains one of the major obstacles in online learning, especially in areas that may lack stable or high-speed internet access. Limited connectivity significantly affects the experience of using multimedia, such as video and audio, which require smooth connections for uninterrupted streaming (Ananda Muhamad Tri Utama, 2022). This situation gives students living in areas with better internet connectivity a significant advantage over those in regions with poor internet infrastructure.*
2. *Lack of direct interaction with lecturers. This also becomes a challenge in the use of information technology, as Postgraduate PBA students at UIN Maliki Malang experience such limitations. This indicates that although materials can be delivered online, effective two-way interaction between students and lecturers remains difficult to achieve (Adam, 2023). The limitation of direct interaction can reduce students' understanding of the material being taught. However, by*

integrating media and technology into the learning process, students can become more engaged and gain a better understanding of the subject matter.

3. *Difficulty understanding material in online learning. Postgraduate PBA students at UIN Maliki Malang mentioned that this difficulty is related to the lack of interactive learning media or teaching methods that are not well-suited for distance learning. Some students may require a more visual approach or direct discussions in order to better grasp the material.*
4. Lack of self-motivation in learning indicates another significant challenge. This is quite common in online learning, where students must be more disciplined and proactive in managing their own study time without direct supervision. This lack of motivation can hinder the progress of Postgraduate PBA students at UIN Maliki Malang in mastering the Arabic language.
5. Limited opportunities for speaking practice are also a concern, although reported by a smaller percentage. Speaking practice is crucial in language learning, and the limited chances to practice speaking with lecturers or fellow students can hinder the development of verbal communication skills among Postgraduate PBA students at UIN Maliki Malang in Arabic.

Conclusion

The development of educational technology during the Industrial Revolution 4.0 era and the Covid-19 pandemic has driven the use of virtual technology, which has proven effective in enhancing the Arabic language learning process. The post-pandemic utilization of virtual technology has greatly facilitated interactive learning, particularly activities requiring speaking practice (*muhadatsah*) and direct discussion, through features such as breakout rooms and recording options available on platforms like Zoom, Google Meet, and WhatsApp groups.

The use of this technology is expected to continue evolving, along with the development of curricula and learning methods that are more innovative and adaptive to the needs of the digital era. Virtual technology offers several advantages, including time and location flexibility, ease of access to learning materials, online interaction, and multimedia use. However, students also face challenges such as unstable internet connections, limited direct interaction, difficulty in understanding materials, low self-motivation, and restricted opportunities for speaking practice.

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