Journal of English Language and Pedagogy (JELPA)
Vol. 3, No. 1, May 2025, Page 33-45
P-ISSN: 2988-2826 | E-ISSN: 2987-8225

Teacher Preparedness in Utilizing Technology for Learning: Navigating Challenges and Opportunity in the Digital Age

Dhini Alvina Fawziyah
Walisongo State Islamic University
Corresponding Author: dhinialvn@gmail.com

Article History:
Submitted: 29/11/2024
Revised: 13/03/2025
Accepted: 16/05/2025

Keywords:
Teacher Preparedness; Technology Integration; Digital Learning; Educational Challenges; Educational Opportunities.

Abstract. This study examines the extent of teacher preparedness in integrating technology into learning by English as a Foreign Language teachers in the current digital era. The difficulties teachers face when using technology, such as inadequate infrastructure, lack of training, and technical barriers,s form the basis of this study. Seven teachers from different levels of education participated in semi-structured interviews to provide data for a descriptive qualitative approach. Results show that most teachers view technology positively, especially in improving teacher engagement and relationships with students. However, some significant issues remain, such as students' insufficient digital literacy, lack of technical assistance, and limited internet connection. The age and tendency to use conventional teaching approaches also affect teacher preparedness. This study shows that greater access to digital resources and thorough training are needed, even though teachers are more interested in using technology. According to the findings of this study, technology has a lot of potential to improve learning standards, provided that current barriers can be removed with the help of adequate infrastructure support and training.

Citation: Fawziyah, D. A. (2025). Teacher Preparedness in Utilizing Technology for Learning: Navigating Challenges and Opportunity in the Digital Age. *Journal of English Language and Pedagogy (JELPA),* Vol 3(1), 33-45. DOI: https://doi.org/10.51826/jelpa.v3i1.1332

INTRODUCTION

The era of disruption, influenced by digitalization and industrial revolution 4.0, has significantly impacted education, particularly in terms of English teachers' readiness to integrate technology into their teaching practices. The demand for 21st-century skills has shifted the educational paradigm, requiring educators to possess content knowledge, digital competence, and pedagogical flexibility. However, many teachers remain underprepared to meet these demands.

For instance, a survey of ten English instructors revealed that although they could manage access to online materials, they struggled to integrate technology into their lessons because of low motivation, poor comprehension, and facility constraints (Jannatussholihah, 2020). Even with the speed at which technology is developing, only 45% of teachers are appropriately prepared, primarily due to poor training, inadequate school infrastructure, and a lack of familiarity with the medium (Rahman, 2024).

Studies using the Technology Acceptance Model (TAM) highlight that while teachers generally perceive technology as applicable, they often find it challenging to use and resistant to adopt. This suggests they are not yet ready to use technology effectively in teaching English (Ramadhani et al., 2023). Further, higher levels of digital competence are associated with teachers perceiving assessment of students' empowerment, and self-directed learning tends to see it as opportunities rather than challenges during emergency remote teaching (Amenduni et al., 2022).

Moreover, Potential challenges to digitally enhanced practical skill teaching in health science education include inaccessibility, digital illiteracy among staff, technological challenges, lack of engagement, staff-student interaction, and negative attitudes towards online learning remain prevalent (Forde & OBrien, 2022).

Additionally, pre-service teachers are shown to have limited computer skills and inadequate preparation to integrate technology into their classroom practicum, especially in the face of new and rapidly evolving digital tools (Jimola & Oso, 2024). The TPACK framework further emphasizes that successful technology integration requires complex knowledge synthesis-something many teachers have yet to develop (Saubon & Briones, 2022) fully.

Efforts such as professional development, technical assistance, and recognition of achievements are essential to increase teacher confidence and innovation (Mayantao & Tantiado, 2024). Meanwhile, studies in contexts like Ghana found that factors such as age, gender, higher qualifications, and professional experience influenced technology integration. Key tools like smartphones and Microsoft Office 365 are insufficient due to infrastructural challenges and resistance to change. The study recommends resourcing teacher training institutions and regular in-service training by the Ministry of Education (Mpuangnan, 2024). Frequent and context-sensitive professional development is also recommended to support purposeful technology use with English learners (Siefert et al., 2019). The digital age enhances opportunities "for "making learning a part of "life," but schools need to be transformed by understanding the impact of mindset formation on people's approach to learning (Fischer et al., 2023). Challenges faced in character education in the digital age include balance, safety, security, cyberbullying, sexting, copyright, and plagiarism (Dewi et al., 2023)

Despite numerous studies exploring the preparedness and readiness of teachers to utilize technology, several gaps remain. While research identifies key challenges such as low motivation, inadequate training, and poor infrastructure (Jannatussholihah, 2020; Rahman, 2024), there is a lack of detailed exploration into practical interventions that can enhance abilities to integrate technology into English language teaching. Many studies focus on teachers' technological perceptions and proficiency (Mayantao & Tantiado, 2024; Ramadhani et al., 2023), yet few provide actionable insights into specific training models or strategies that can foster better digital adoption. Additionally, while contextual factors like age, experience, and resource availability have been identified as influential (Mpuangnan, 2024), the impact of these factors across diverse educational settings—especially in low-resource environments—remains underexplored.

This highlights the urgency of conducting this research. As educational systems worldwide continue to digitize and as blended or hybrid learning models become increasingly prevalent, understanding how to equip English teachers with the right tools, mindset, and support systems is more pressing than ever. Without targeted research that addresses practical implementation strategies, there is a risk that gaps in digital readiness will continue to ultimately affect the quality of language education and students' preparedness for a digitally driven future.

Therefore, this study aims to fill the existing gap by examining teachers' readiness to face challenges and opportunities in integrating technology into learning. Special attention will be given to identifying practical solutions to overcome barriers and opportunities in adopting technology in the evolving digital era.

METHOD

The research method used in this study is the descriptive qualitative method. This study aims to determine teachers' preparedness to face challenges and opportunities in integrating technology into learning. A semi-structured interview design was used to overview teachers' preparedness,

barriers, and opportunities in incorporating technology into their teaching-learning practices. Data is collected through semi-structured interviews, where respondents are asked to give their opinions based on several questions. The results of the interviews will be transcribed into the form of coding for each question, then analyzed, and the main themes will be compiled into a narrative that describes the phenomenon of teacher preparedness in facing challenges and opportunities when adopting technology in the digital era.

Respondent Data

This study involved interviews with 7 English as a Foreign Language (EFL) teachers from several elementary/junior high/middle school/vocational level schools.

Table 1. Respondent Data

No.	Name	Age	Educational Background	Institution	Position	Subject Taught	Years of Experience
1	Surini, S.Pd	56	Bachelor's Degree	MI Matholi'ul Falah	Class Teacher	All Subjects	More than 20 years
2	Choirul Amala, S.Pd.I., M.Pd.I	48	Master's Degree	MI Matholi'ul Falah	Principal & Class Teacher	English	More than 20 years
3	Mira Fitrianasari, S.Pd	37	Bachelor's Degree	MTs Matholi'ul Falah	Class Teacher	English	9 years
4	Subagyo, S.Pd	51	Bachelor's Degree	MTs Matholi'ul Falah	Class Teacher	English	16 years
5	Sukeni, S.Pd	42	Bachelor's Degree	MA Matholi'ul Falah	Class Teacher	Entrepreneurship Education	12 years
6	Ahmad Nur Salim, S.Pd	48	Bachelor's Degree	MA Matholi'ul Falah	Class Teacher	English	15 years
7	Widya Riyanti, S.Pd	33	Bachelor's Degree	MA Matholi'ul Falah	Class Teacher	Math	6 years

RESULT AND DISCUSSION

Results

The results of the semi-structured interviews on teachers' preparedness to face the challenges and opportunities of integrating technology into learning show a satisfactory view of how educators are increasingly negotiating with the digital era. Most teachers have a positive orientation towards technology-based teaching, which is expected to improve teaching quality and learning outcomes. However, the results also reveal many issues related to the adequacy of training, including problems related to integration and infrastructure limitations. These challenges show that teachers are ready and willing to adopt technology, but more resources should be available to help ensure efficient classroom implementation.

Table 2. Result of Interview

No.	Question	Interview results	
1.	Seberapa sering Anda menggunakan teknologi dalam proses pembelajaran, dan apa motivasi utama Anda untuk menggunakannya? *(How often do you use technology in the learning process, and what are your primary motivations for using it?)*	R1.	Saya jarang menggunakan teknologi, namun jika ada untuk presentasi materi dan mencari sumber belajar tambahan terkadang saya menggunakan teknologi. Motivasi utama saya adalah untuk membuat pembelajaran lebih interaktif dan menarik bagi siswa. *(I rarely use technology, but if it is there to present material and find additional learning resources, I sometimes use technology. My primary motivation is to make learning more interactive and engaging for students.)*
		R2.	Saya lebih sering menggunakan teknologi untuk tugas rumah karena saya mengajar anak sd. Motivasi saya adalah untuk mempermudah dan memperkenalkan siswa dalam mengakses materi melalui teknologi dan memberi mereka kesempatan belajar secara mandiri. *(I mostly use technology for homework because I teach elementary school children. My motivation is to make it easier and introduce students to access materials through technology and give them the opportunity to learn independently.)*
		R3.	Saya menggunakan teknologi sekitar dua atau tiga kali seminggu. Motivasi utama saya adalah untuk mendukung siswa dengan cara yang lebih fleksibel dan mengikuti perkembangan zaman. *(I use technology about two or three times a week. My primary motivation is to support students in a more flexible and up-to-date way.)*
		R4.	Penggunaan teknologi saya cukup terbatas hanya pada tugas tertentu. Motivasi saya untuk menggunakannya adalah untuk memperkenalkan siswa dengan berbagai alat yang berguna dalam pembelajaran. *(My use of technology is quite limited to specific tasks only. My motivation for using it is to introduce students to different tools that are useful in learning.)*
		R5.	Saya menggunakan teknologi hampir setiap sesi kelas. karena dapat membuat pembelajaran lebih menarik dan memfasilitasi komunikasi yang lebih mudah dengan siswa. *(I use technology almost every class session. Because it can make learning more interesting and facilitate easier communication with students.)*
		R6.	Teknologi saya gunakan dalam setiap pembelajaran, terutama untuk video dan aplikasi pembelajaran. Motivasi saya adalah untuk meningkatkan pemahaman siswa dengan cara yang lebih visual dan interaktif. *(I use technology in every lesson, especially for videos and learning apps. My motivation is to enhance students' understanding in a more visual and interactive way.)*

		R7.	Penggunaan teknologi saya tidak terlalu sering, lebih ke keperluan administratif. Namun, saya ingin lebih menggunakannya untuk membantu siswa belajar secara lebih kreatif. *(My use of technology is not very frequent; it is used more for administrative purposes. However, I would like to use it more to help students learn more creatively.)*
2.	Bagaimana Anda menilai kemampuan Anda dalam memanfaatkan teknologi untuk mendukung pengajaran? *(How would you rate your ability to utilize technology to support teaching?)*	R1.	Saya merasa cukup nyaman, meskipun terkadang saya masih perlu belajar lebih banyak tentang aplikasi baru yang dapat membantu mengelola kelas. *(I feel pretty comfortable, although sometimes I still need to learn more about new applications that can help manage the classroom.)*
		R2.	Saya rasa kemampuan saya sudah baik, namun saya percaya masih ada ruang untuk berkembang, terutama dalam hal menggunakan platform e-learning yang lebih interaktif. *(I think my skills are good, but there is still room for improvement, especially when using more interactive e-learning platforms.)*
		R3.	Saya merasa cukup percaya diri dengan teknologi dasar, tetapi saya merasa kesulitan dengan alat yang lebih kompleks untuk analisis data atau penilaian. *(I feel pretty confident with basic technology but struggle with more complex data analysis or assessment tools.)*
		R4.	Saya kan sudah tua, saya merasa perlu banyak belajar tentang teknologi. Penggunaan saya terbatas pada dasar seperti PowerPoint dan media sosial untuk komunikasi. *(I am old and need to learn a lot about technology. My use of the basics, such as PowerPoint and social media, is limited to communication.)*
		R5.	Kemampuan saya sudah cukup baik, namun saya berharap bisa lebih mahir dalam menggunakan perangkat lunak yang mendalam untuk materi lebih lanjut. *(My skills are good enough, but I hope to become more proficient in using in-depth software for more advanced materials.)*
		R6.	Saya merasa nyaman menggunakan teknologi, tetapi kadang saya ragu apakah saya sudah memaksimalkan seluruh potensi alat-alat yang ada. *(I feel comfortable using technology, but sometimes I doubt if I am maximizing the full potential of the tools available.)*
		R7.	Saya rasa kemampuan saya masih terbatas, tetapi saya berusaha mempelajari lebih banyak alat dan sumber daya yang dapat membantu proses belajar mengajar. *(I think my skills are still limited, but I am trying to learn more tools and resources to help with teaching and learning.)*

3.	Pelatihan atau dukungan apa saja yang pernah Anda terima terkait penggunaan teknologi dalam pembelajaran? *(What training or support have you received regarding the use of technology in learning?)*	R1.	Saya pernah mengikuti pelatihan mengenai penggunaan aplikasi pembelajaran online dan cara membuat materi interaktif. *(I have received training on using online learning applications and how to create interactive materials.)*
		R2.	Saya pernah mendapat pelatihan dasar tentang penggunaan perangkat lunak untuk e-learning dan pengelolaan kelas digital. *(I have received basic training on using software for e-learning and managing digital classrooms.)*
		R3.	Pelatihan yang saya terima hanya sebatas webinar singkat mengenai penggunaan Google Classroom dan platform pembelajaran lainnya. *(My training was limited to short webinars using Google Classroom and other learning platforms.)*
		R4.	Dukungan yang saya terima berupa tutorial online tentang cara menggunakan Microsoft Office dalam mengajar. *(The support I received was in the form of online tutorials on how to use Microsoft Office in teaching.)*
		R5.	Saya pernah mengikuti workshop tentang cara memanfaatkan video sebagai media pembelajaran dan bagaimana memotivasi siswa menggunakan teknologi. *(I have attended workshops on utilizing videos as learning media and motivating students using technology.)*
		R6.	Saya menerima pelatihan penggunaan platform pembelajaran seperti Zoom dan Google Meet untuk pengajaran jarak jauh. *(I received training on using learning platforms such as Zoom and Google Meet for distance teaching.)*
		R7.	Saya belum pernah mengikuti pelatihan formal, tetapi sering mendapatkan tips dari kolega tentang cara menggunakan teknologi dengan lebih efektif. *(I haven't had any formal training, but I often get tips from colleagues on how to use technology more effectively.)*
4.	Apa saja hambatan utama yang Anda alami saat mencoba memanfaatkan teknologi di kelas? *(What are the main barriers you experience when using technology in the classroom?)*	R1.	Hambatan utama saya adalah masalah koneksi internet yang sering terganggu, dan siswa yang terlalu penasaran sehingga terkadang menyentuh alat teknologi sembarang. *(My main obstacles are internet connection problems, which are often interrupted, and students who are too curious sometimes touch technology tools randomly.)*
		R2.	Salah satu hambatan terbesar saya adalah waktu yang terbatas untuk mempersiapkan materi yang memanfaatkan teknologi, selain itu, tidak semua siswa memiliki perangkat yang memadai dan diperbbolehkan orang tuanya menggunakan teknologi. *(One of my biggest obstacles is the limited time to prepare materials that utilize technology; in addition,*

		not all students have adequate devices and are allowed by their parents to use technology.)
		R3. Kendala utama saya adalah kurangnya pelatihan dan pengalaman dalam menggunakan teknologi baru serta keengganan sebagian siswa yang kurang terbiasa dengan alat teknologi. *(My main obstacle is the lack of training and experience in using new technology and the reluctance of some students who are unfamiliar with technological tools.)*
		R4. Hambatan saya lebih pada kesulitan teknis, seperti kesalahan pengaturan perangkat atau masalah teknis saat menggunakan aplikasi tertentu. *(My obstacles are more technical difficulties, such as incorrect device settings or technical problems when using specific applications.)*
		R5. Seringkali saya menghadapi masalah terkait kecepatan internet yang tidak stabil, dan tidak semua siswa dapat mengakses materi berbasis teknologi. *(I often face problems related to unstable internet speed, and not all students can access technology-based materials.)*
		R6. Beberapa siswa merasa kesulitan menggunakan perangkat, dan ada juga kekhawatiran mengenai ketergantungan pada teknologi yang berlebihan. *(Some students find it challenging to use the devices, and there are concerns regarding over-dependence on technology.)*
		R7. Hambatan yang saya hadapi adalah kurangnya dukungan teknis di sekolah serta ketidaknyamanan siswa dalam beradaptasi dengan pembelajaran berbasis teknologi. *(The barriers I face are the lack of technical support at school and students' discomfort in adapting to technology-based learning.)*
5.	Bagaimana respons siswa terhadap penggunaan teknologi dalam pembelajaran, dan apakah ada kendala dalam hal itu? *(How do students respond to the use of technology in learning, and are there any obstacles in that regard?)*	R1. siswa sangat antusias, mungkin karena masih sd dan di perkenalkan dengan teknologi. siswa juga lebih mudah memahami materi yang disampaikan melalui teknologi. Namun, beberapa siswa mengalami kesulitan dalam mengakses materi karena keterbatasan perangkat. *(Students are enthusiastic, perhaps because they are still in elementary school and are introduced to technology. Students also find it easier to understand the material delivered through technology. However, some students had difficulty accessing the materials due to device limitations.)*
		R2. Respons siswa cukup positif, mereka merasa sangat excited, tetapi beberapa siswa khawatir dengan penggunaan teknologi yang terus berkembang karena keterbatasan perangkat. *(Students' responses are quite favorable; they feel very excited, but some students are worried about the use of*

		technology that continues to develop due to device limitations.)
		R3. Siswa sangat responsif terhadap teknologi karena merasa belajar dengan cara yang lebih menyenangkan dan baru bagi mereka, namun ada kendala dalam hal kecepatan internet yang tidak merata. *(Students are very responsive to the technology because they find learning more fun and new, but there are constraints in terms of uneven internet speed.)*
		R4. Siswa menunjukkan respons yang beragam; sebagian besar menyukai pembelajaran dengan teknologi, tetapi beberapa mengalami kesulitan dalam memanfaatkan alat-alat digital. *(Students show mixed responses; most like learning with technology, but some have difficulty utilizing digital tools.)*
		R5. Mereka cenderung lebih tertarik saat saya menggunakan teknologi. namun, ada beberapa siswa yang merasa cemas atau tidak nyaman dengan teknologi. *(They tend to be more interested when I use technology. However, some students feel anxious or uncomfortable with technology.)*
		R6. Siswa sangat antusias, terutama dalam pembelajaran berbasis video dan game edukatif. Kendala yang ada lebih pada akses perangkat yang tidak merata di antara mereka. *(Students are very enthusiastic, especially in video-based learning and educational games. The constraint is more on the uneven access to devices among them.)*
		R7. Beberapa siswa menyukai penggunaan teknologi, namun sebagian lainnya merasa lebih nyaman dengan metode pembelajaran tradisional yang tidak memerlukan banyak perangkat. *(Some students like using technology, but others feel more comfortable with traditional learning methods that do not require many devices.)*
6.	Menurut Anda, apa peluang terbesar yang dapat dihasilkan dari penggunaan teknologi dalam pendidikan? *(What are the most significant opportunities for using technology in education?)*	R1. Peluang terbesar adalah menciptakan pengalaman belajar yang baru, lebih personal, dan fleksibel bagi siswa, serta memberikan akses ke materi pembelajaran yang lebih luas. *(The most significant opportunity is to create new, more personalized, and flexible learning experiences for students and to provide access to a broader range of learning materials.)*
		R2. Teknologi memungkinkan pembelajaran yang lebih terjangkau dan akses ke pendidikan berkualitas meski dengan keterbatasan lokasi atau waktu. *(Technology enables more affordable learning and access to quality education despite location or time constraints.)*

		R3.	Penggunaan teknologi dapat memperluas jangkauan materi pembelajaran dan memungkinkan kolaborasi lebih efektif antara guru dan siswa. *(Technology can expand the range of learning materials and enable more effective collaboration between teachers and students.)*
		R4.	Teknologi membuka peluang untuk meningkatkan efisiensi pengajaran, memudahkan evaluasi, dan memperkenalkan siswa pada berbagai metode pembelajaran yang inovatif. *(Technology opens up opportunities to improve teaching efficiency, facilitate evaluation, and introduce students to innovative learning methods.)*
		R5.	Salah satu peluang besar adalah pembelajaran jarak jauh yang dapat menjangkau lebih banyak siswa dari lokasi yang berbeda. *(One of the significant opportunities is distance learning, which can reach more students from different locations.)*
		R6.	Teknologi memberi kesempatan untuk mengintegrasikan berbagai sumber belajar digital dan mendukung pembelajaran berbasis proyek atau kolaboratif. *(Technology provides opportunities to integrate various digital learning resources and support project-based or collaborative learning.)*
		R7.	Peluang terbesar adalah memungkinkan pembelajaran yang lebih adaptif dan memanfaatkan berbagai platform untuk meningkatkan keterlibatan siswa. *(The most significant opportunity is to enable more adaptive learning and utilize various platforms to increase student engagement.)*
7.	Dukungan apa yang menurut Anda paling diperlukan untuk membantu guru lebih efektif memanfaatkan teknologi? *(What support is most needed to help teachers utilize technology more effectively?)*	R1.	Dukungan berupa pelatihan rutin dan dukungan teknis di sekolah akan sangat membantu. Selain itu, penting juga memiliki akses yang lebih baik terhadap perangkat dan software pembelajaran. *(Support in the form of regular training and technical support in schools would be helpful. It is also essential to have better access to learning tools and software.)*
		R2.	Saya butuh pelatihan yang lebih mendalam mengenai alat-alat digital dan strategi pembelajaran berbasis teknologi dan juga mungkin website pembelajaran seperti e-learning. *(I need more in-depth training on digital tools, technology-based learning strategies, and possibly learning websites such as e-learning.)*
		R3.	Dukungan teknis dan pelatihan yang rutin akan sangat berguna, termasuk materi pelatihan yang mudah diakses dan relevan dengan kebutuhan kelas. *(Regular technical support and training would be instrumental, including training materials that are easily accessible and relevant to classroom needs.)*

R4.	Saya rasa dukungan yang dibutuhkan adalah lebih banyak akses ke sumber daya teknologi dan waktu untuk mempelajari aplikasi baru dengan lebih baik. *(I think the support needed is more access to technology resources and time to learn new applications better.)*
R5.	Dukungan paling penting adalah peningkatan infrastruktur teknologi di sekolah dan pelatihan yang berkelanjutan mengenai cara memanfaatkan alat digital dengan lebih efektif. *(The most crucial support is improved school technology infrastructure and ongoing training on utilizing digital tools more effectively.)*
R6.	Dukungan berupa workshop dan bimbingan tentang cara memanfaatkan teknologi terbaru dalam pembelajaran sangat diperlukan. *(Support in the form of workshops and guidance on utilizing the latest technology in learning is needed.)*
R7.	Saya membutuhkan lebih banyak akses ke perangkat dan pelatihan tentang cara menggunakan teknologi untuk merancang materi ajar yang lebih menarik. *(I need more access to devices and training on how to use technology to design more engaging teaching materials.)*

Discussions

Teachers' Preparedness to Use Technology

The results show differences in teachers' preparedness levels in integrating technology into the learning process. Some teachers have different levels of preparedness but tend to be high, routinely using learning apps and interactive videos to create an engaging and dynamic learning atmosphere while introducing technology to students. Teachers view technology as a tool to improve students' understanding, adapt to the times, and encourage creativity in the classroom. Teachers appear capable of using technology seamlessly and show alignment with modern learning approaches. Their actions are aligned with previous research by Amenduni et al. (2022), which found that teachers with higher digital competence are more likely to view technology as an opportunity rather than a challenge, especially during emergency remote teaching.

However, some teachers still show limited preparedness and rely only on basic tools such as PowerPoint or social media for administrative purposes. Age, lack of exposure to technology, and preference for traditional learning methods are the leading causes of this limitation. Some teachers have moderate preparedness, feel confident using only basic technology, and find it difficult to adopt more sophisticated platforms such as e-learning systems or data analysis tools. This diversity in preparedness highlights the need for individualized training programs to improve teachers' overall competency. This is consistent with findings by Ramadhani et al. (2023), who observed that while teachers acknowledge the usefulness of technology, many are reluctant to adopt it due to low self-efficacy and insufficient training.

This diversity in preparedness underscores the urgent need for individualized and needs-based training programs. As Mayanto & Tantiando (2024) emphasized, schools must offer ongoing technical support and recognition mechanisms to build teacher confidence and

innovation in digital pedagogy. Instead of a one-size-fits-all approach, professional development must consider teacher age, digital literacy level, and contextual teaching needs.

Challenges in Integrating Technology into Learning

Various challenges hinder teachers in integrating technology into learning. Infrastructure issues such as unstable internet connection and uneven access to devices are the main challenges, especially in schools with limited resources. These findings align with Rahman (2024) and Mpuangnan (2024), who highlight infrastructural shortcomings as critical barriers to effective technology integration, especially in low-resource educational environments. In addition, time constraints are also an obstacle, where teachers often do not have enough time to design technology-based learning materials. Technical constraints such as difficulty using sophisticated tools or troubleshooting when problems occur also usually hamper learning. This is supported by Jimola & Oso (2024), who argue that limited computer literacy among pre-service teachers results in unpreparedness to adopt technology during practicum effectively.

Another obstacle arises from the student factor. Some students lack sufficient digital literacy to utilize technology optimally, while others feel anxious or uncomfortable with technology-based learning methods. This is consistent with Amenduni et al. (2022), who emphasize the importance of students' digital competence in determining the success of technology-enhanced learning. Concerns about over-dependence on technology are also a concern. These challenges point to the need for a holistic approach, including improved infrastructure, technical support, and strengthened digital literacy for teachers and students.

Possible Opportunities in Integrating Technology into Learning

Despite the challenges, technology provides excellent opportunities to improve the quality and accessibility of education. Technology enables more flexible learning, where students can access materials anytime and anywhere, especially for students in remote or underserved areas. This aligns with Fischer et al. (2023), who argue that technology expands learning opportunities beyond the classroom, making learning "a part of life" and more adaptable to diverse student needs. Teachers can also adopt innovative pedagogical methods such as gamification, interactive videos, and project-based learning that can increase student engagement and participation. Students reported being motivated and retaining information better when lessons included visual or gamified elements. This aligns with findings from Ramadhani et al. (2023), who suggest that students respond positively to technology-mediated instruction when it is well-integrated and interactive. These methods improve learning outcomes and make the learning process more relevant to the needs of the digital age.

In addition, technology offers opportunities to simplify administrative tasks and facilitate collaboration between teachers and students. Digital tools allow for more efficient classroom management, quick feedback, and better communication. Integrating various digital resources also allows teachers to provide a more personalized learning experience tailored to each student's needs. According to Siefert et al. (2019), when teachers use technology to manage their classrooms efficiently, it frees up time for more meaningful instructional planning and student interaction. By overcoming existing barriers and equipping teachers with adequate skills and resources, technology can be optimally utilized to create a more inclusive, effective, and future-ready education.

CONCLUSION

This research shows that teachers' preparedness to utilize technology in the learning process varies widely. Most teachers have a positive orientation towards the use of technology and show

high motivation to improve the quality of learning through digital media. They realize technology can enrich students' learning experience with more interactive and adaptive methods. However, teachers face several significant challenges in integrating technology, such as infrastructure limitations, internet connection issues, and lack of training and technical support. In addition, some teachers still lack confidence in using more advanced technologies, mainly due to limited digital skills and time to prepare technology-based materials.

Nonetheless, great opportunities can be created through the wider utilization of technology, including distance learning, project-based learning, and educational videos or apps to increase student engagement. To optimize these benefits, ongoing support in the form of more in-depth training and improved access to digital resources within the school environment is required. By addressing existing challenges and providing adequate support, technology can be an effective tool for creating education that is more inclusive, adaptive, and suited to the needs of the digital age.

Future researchers are encouraged to explore the longitudinal impact of technology training programs on teachers' performance and students' learning outcomes, particularly in low-resource or rural educational settings. Additionally, further studies could examine students' perspectives and digital readiness, which this study did not cover deeply, to gain a more holistic understanding of classroom dynamics in technology-enhanced environments.

REFERENCES

Amenduni, F., Rauseo, M., Antonietti, C., & Cattaneo, A. (2022). Challenges and opportunities perceived by Swiss vocational education and training (VET) teachers during emergency remote teaching: The role of teachers' digital competence. *Qwerty - Open and Interdisciplinary Journal of Technology, Culture, and Education*, *17*(2). https://doi.org/10.30557/QW000057

Dewi, A. C., Az-Zahra, P. F., Nirwana, Ilmi, N., Putri, N. D., & Sari, P. D. (2023). Challenges and Opportunities for Character Education in the Digital Era. *International Journal of Sustainability in Research*, *1*(4), 239–248. https://doi.org/10.59890/ijsr.v1i4.646

Fischer, G., Lundin, J., & Lindberg, O. J. (2023). The challenge for the digital age: making learning a part of life. *The International Journal of Information and Learning Technology*, *40*(1), 1–16. https://doi.org/10.1108/IJILT-04-2022-0079

Forde, C., & OBrien, A. (2022). A Literature Review of Barriers and Opportunities Presented by Digitally Enhanced Practical Skill Teaching and Learning in Health Science Education. *Medical Education Online*, *27*(1). https://doi.org/10.1080/10872981.2022.2068210

Jannatussholihah, S. (2020). English teacher readiness in the era of disruption. *1st International Conference on Language, Literature, and Arts Education (ICLLAE 2019)*, 38–41.

Jimola, F. E., & Oso, S. O. (2024). Pre-Service Teachers and Online Learning Technology in Practice Today: Perceptions, Preparedness and Competence in E-Practicum. *International Journal of Technology in Education and Science*, *8*(3), 447–469.

Mayantao, R., & Tantiado, R. C. (2024). Teachers' Utilization of Digital Tools and Confidence in Technology. *International Journal of Multidisciplinary Research and Analysis*, *7*(5), 1945–1952.

Mpuangnan, K. N. (2024). Teacher preparedness and professional development needs for successful technology integration in teacher education. *Cogent Education*, *11*(1), 2408837.

Rahman, P. K. (2024). Analysis of Teacher Preparedness for Using Technology in the Classroom Learning Process. *Indonesian Research Journal on Education*, *4*(4), 276–280.

Ramadhani, F. A., Ariani, M., & Fitriyah, S. M. (2023). EFL Teachers' Readiness in Using Technology to Teach English in A Public Junior High School. *EFL Education Journal*, *10*(3), 122–137.

Saubon, E. F. A., & Briones, D. E. O. (2022). Digital Capabilities and Teachers' Preparedness in the New Normal. *International Multidisciplinary Research Journal*, *4*(3), 128–137.

Siefert, B., Kelly, K., Yearta, L., & Oliveira, T. (2019). Teacher Perceptions and Use of Technology Across Content Areas with Linguistically Diverse Middle School Students. *Journal of Digital Learning in Teacher Education*, *35*(2), 107–121. https://doi.org/10.1080/21532974.2019.1568327