



EFL Teachers' Readiness In Using ICT: Knowledge, Skills, and Attitudes

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Abstract

Aims. This research investigates English teachers' preparedness to integrate Information and Communication Technology (ICT) into their teaching practices in the post-pandemic context. The study specifically focuses on three objectives: (1) to assess the level of readiness demonstrated by English teachers in adopting ICT after the pandemic; (2) to explore the ways in which teachers utilize ICT tools within classroom instruction; and (3) to identify the primary barriers and difficulties teachers encounter when implementing ICT in the post-pandemic period.

Methods. Employing a mixed-methods approach, this study integrates both quantitative and qualitative data to provide a comprehensive understanding of the topic. The quantitative component examines variable relationships based on established theoretical frameworks, while qualitative inquiry supports deeper contextual interpretation. Participants included 48 English teachers from public junior high schools in Yogyakarta City, with four teachers selected for in-depth interviews. The questionnaire was adapted from validated instruments developed by Singh and Chan (2014), Al-Furaydi (2013), Davis (1989), and Zara-ee (2011). Descriptive statistical analysis was used for quantitative data, and qualitative data were analyzed through the interactive model proposed by Miles et al. (2014).

Results. Findings reveal that 74% of the participants exhibited a high level of ICT readiness, whereas 26% demonstrated limited preparedness.

Conclusion. The interviews highlighted several obstacles hindering ICT integration, including unstable internet connectivity, financial limitations, insufficient ICT-related training, and inadequate school infrastructure.

Implementation. The most prominent challenge identified in this research was the shortage of professional development opportunities or ICT training for teachers.

Keywords: Teachers' Readiness, ICT, Post-Pandemic Era.



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INTRODUCTION

The COVID-19 pandemic has profoundly transformed the education landscape, triggering a paradigm shift in the ways teaching and learning are conducted. Its impact is expected to persist long after the pandemic has ended. The rapid advancement of technology has facilitated convenient access to educational resources, enabled asynchronous modes of learning, and diminished geographical constraints. Within this context, teachers assume a pivotal role in effectively integrating Information and Communication Technology (ICT) into classrooms, particularly within English as a Foreign Language (EFL) instruction. In the current digital era, educators must not only possess subject-matter expertise but also demonstrate technological competence to fulfill evolving professional demands (Rabah, 2015).

Given these transformations, it becomes imperative to reassess teachers' readiness to adapt to shifting job expectations and the centrality of ICT integration in meeting them (Cahyani & Cahyono, 2017). EFL teachers are expected to possess adequate knowledge, skills, and positive attitudes toward both language teaching and technology use (Alazzam et al.). Teacher readiness, as defined by Inan and Lowther (2009), refers to educators' self-perception of their capability to employ technology in the classroom. Alazzam, Bakar, and Hamzah (2012) conceptualize ICT readiness as encompassing three key dimensions: knowledge, skills, and attitudes. "Knowledge," according to *Webster's Dictionary* (2018), is the state of understanding something deeply through experience or familiarity, here referring to teachers' proficiency in operating computers and utilizing the internet. In the EFL context, "skills" describe teachers' ability to effectively employ various ICT tools, such as online platforms and educational software, for instructional purposes. "Attitudes" reflect teachers' evaluative dispositions, beliefs, and judgments regarding the use of ICT in teaching.

Despite its importance, research on teachers' ICT readiness in Indonesia's post-pandemic context remains limited. This study, therefore, focuses on examining English

teachers' readiness at the junior high school level. Based on the Regulation of the Minister of Education and Culture No. 58 of 2014 regarding the 2013 Junior High School Curriculum, English is a core subject taught at this level. Consequently, English teachers play a crucial role in shaping students' early learning experiences. As digital-native learners, junior high school students are generally familiar with technology; thus, ICT-supported, context-based learning can enhance engagement and enjoyment in English language instruction. When students find the learning process enjoyable, their motivation and proficiency are likely to improve. Therefore, evaluating junior high school teachers' readiness to integrate ICT in the post-pandemic era is of great significance.

This study aims to assess Indonesian EFL teachers' readiness to incorporate ICT in the post-pandemic context. Understanding teachers' readiness, their patterns of ICT use, and the challenges they encounter provides essential insights into the effectiveness of ICT-based English teaching and learning.

LITERATURE REVIEW

Teacher Readiness

According to Inan and Lowther (2009), teacher readiness refers to educators' perceptions of their capability and competence in integrating Information and Communication Technology (ICT) into classroom practices and instructional processes. In addition to possessing adequate skills, teachers must also understand effective strategies for delivering knowledge to students (Singh & Chan, 2014). Similarly, Malinina (2015) concurs that readiness encompasses more than technical ability, attitudes play a crucial role as well. Drawing from these perspectives, it can be inferred that teachers' attitudes toward ICT integration, their motivation to pursue further learning in this area, and their technological proficiency are key determinants of successful ICT adoption in educational contexts.

Information and Communication Technology (ICT)

The concept of ICT has been defined differently by various scholars, reflecting a lack of consensus regarding its scope and application in education (Bilyalova, 2017). Generally,

ICT refers to a broad spectrum of tools that facilitate the use and exchange of information. Hennessy et al. (2005) describe ICT as encompassing both hardware (e.g., computers, projectors, calculators, and digital recorders) and software (e.g., multimedia programs, general-purpose applications) as well as communication and information systems. Expanding on this, Livingstone (2012) categorizes ICT tools based on their functions, those used for classroom instruction and those supporting peer-to-peer interaction. She also includes technologies relevant to both formal and informal learning environments, such as educational games and internet-based applications.

In this sense, ICT represents all electronic tools that support modern communication and learning. Its integration into education enables teachers to use multimedia, web-based platforms, and internet resources to enhance instructional effectiveness or substitute traditional teaching media. ICT facilitates the development of essential 21st-century skills among both teachers and students. As noted by Hsu (2016), the adoption of advanced technologies can enrich students' academic experiences across disciplines and positively influence cognitive development. Likewise, Smeda et al. (2014) emphasize that technology use contributes to improving students' knowledge, skills, and educational outcomes.

Challenges of Using ICT

A substantial body of research (Salehi & Salehi, 2012; Rabah, 2015; Balanskat et al., 2006; Bingimlas, 2009) indicates that teachers encounter various barriers in implementing ICT in the classroom. These challenges include limited knowledge and skills, inadequate teaching experience, insufficient ICT infrastructure, lack of professional training, and weak administrative or leadership support. Pelgrum (2001) identifies the shortage of facilities, particularly the insufficient number of computers, as one of the most persistent obstacles to ICT integration. Even when teachers possess the necessary skills, these infrastructural limitations can restrict practical application. Consequently, access constraints and resource inadequacies continue to hinder the effective use of ICT. Moreover, teacher-related factors such as negative attitudes toward technology or apprehension about its use further exacerbate these challenges. Effective ICT integration thus depends not only on teachers' readiness but also on

consistent institutional and governmental support.

Post-Pandemic Era

The post-pandemic era refers to the period of societal recovery and adjustment following a global health crisis. This stage is characterized by transformations in social behavior, economic systems, and educational practices. In the context of COVID-19, the post-pandemic period signifies a phase when the spread of the virus has been contained, and communities adapt to a new normal that heavily incorporates technology. The pandemic accelerated the use of digital tools, remote learning, and online collaboration, establishing ICT as a central component of modern education.

In this new landscape, ICT proficiency has become essential for teachers, as it supports effective instruction, enhances student engagement, enables personalized learning, facilitates collaboration, and improves assessment processes. By continuously developing their technological knowledge and pedagogical competence, teachers can better respond to the evolving demands of education in the digital age and foster students' success in a technology-driven environment.

METHODS

Type of Research

This study adopted a mixed-methods research design to collect, analyze, and integrate both quantitative and qualitative data within a single framework to obtain a comprehensive understanding of the research problem. Quantitative data were obtained through a questionnaire that examined teachers' readiness, implementation practices, and the challenges faced in utilizing Information and Communication Technology (ICT). Meanwhile, qualitative data were gathered through semi-structured interviews to gain deeper insights into the issues under investigation. According to Creswell (2009), the mixed-methods approach allows researchers to build knowledge claims based on pragmatic considerations, emphasizing consequences, problem-solving, and methodological pluralism.

Research Setting

The research was carried out in several public junior high schools located in Yogyakarta, Indonesia. Yogyakarta is widely recognized as the nation's "City of Education," serving as an academic hub that fosters innovation and knowledge dissemination. Furthermore, the local government actively supports ICT integration in educational settings, making it a suitable context for examining teachers' readiness to utilize ICT in the post-pandemic era.

Research Participant

The study involved 48 English teachers from 17 public junior high schools in Yogyakarta City. Among them, 38 participants were female and 10 were male. In addition, four teachers were purposively selected for follow-up semi-structured interviews to represent three distinct categories of ICT utilization, high, moderate, and low, based on questionnaire results. The research employed a convenience sampling technique, in which participants were selected based on their accessibility and willingness to participate. As noted by Sugiyono (2018), convenience sampling involves recruiting respondents who meet certain inclusion criteria and are readily available, which in this case included certified English teachers actively teaching in Yogyakarta's junior high schools.

Techniques and Instruments for Data Collection

Questionnaire

A closed-ended questionnaire was employed to measure teacher readiness across three dimensions: knowledge, skills, and attitudes. The instrument used a 10-point Likert scale, ranging from *1 (not at all)* to *10 (always)*, to capture nuanced variations in responses. A 10-point scale was chosen for its ability to yield more precise and interpretable results, as supported by Loken et al. (1987). The questionnaire items were adapted from validated instruments used in prior studies to ensure reliability and content relevance.

Interview

To complement the quantitative findings, semi-structured interviews were conducted with four selected participants. These interviews aimed to explore teachers' experiences and perceptions regarding ICT readiness in greater depth, particularly within the context of post-pandemic teaching practices.

Data Analysis Techniques

Quantitative Data Analysis

Data obtained from the questionnaire were analyzed using descriptive statistical techniques. Participants' responses were tabulated, and each item was converted into a percentage score to provide an overall distribution of responses. Descriptive statistics were used to summarize and describe key characteristics of the data, as recommended by Gay and Airasian (2000). According to Fraenkel, Wallen, and Hyun (2012), descriptive analysis enables researchers to condense large datasets into key indicators such as means and medians, facilitating clearer interpretation of findings.

Qualitative Data Analysis

Qualitative data from interviews were analyzed following the interactive model developed by Miles, Huberman, and Saldaña (2014), consisting of three interconnected steps: data reduction, data display, and conclusion drawing or verification. All interview recordings were transcribed, categorized, and coded systematically. During transcription, grammatical inconsistencies and incomplete phrases were refined to maintain clarity and coherence without altering the intended meaning of participants' responses.

Trustworthiness

To ensure the credibility and reliability of the findings, this study applied data triangulation and provided detailed, descriptive accounts of the results. Triangulation was achieved by employing multiple data sources, questionnaires and interviews, to enhance the depth and validity of the analysis. As Patton (1999) suggests, triangulation strengthens qualitative research by cross-verifying data through different methods, thereby offering a more comprehensive understanding of the phenomenon under study.

Respondents' Demography

Table 1. Description and Distribution of Teacher Sample

Independent Variables	Value Labels	Number	Percentage
Gender	Male	10	21%
	Female	38	79%
Age	21-25	6	14%
	26-30	8	17%
	31-35	9	19%
	36-40	3	6%
	41-45	6	14%
	46-50	7	15%
	51-over	7	15%
Last Degree	Bachelor	43	92%
	Master	5	8%
Teaching Experience	<5 Years	16	33%
	5-15	11	25%
	>15	21	42%
Spent Time internet in a Day	<2 hours	7	15%
	3-4 hours	14	29%
	>4 hours	27	56%

DISCUSSIONS

Kinds of ICT Used by EFL Teachers

Table 2: Kinds of ICT Used by EFL Teachers

No.	Name of ICT Tools	Frequency	Percentage
1.	Word Processing	42	87.5%
2.	Database	4	8.3%
3.	Spreadsheet	28	58.3%
4.	Power Point	43	89.6%
5.	Multimedia (Audio & Video)	33	68.8%
6.	Computer Games	17	35.4%
7.	Language software (such as electronic dictionary, TOEFL, simulation, etc)	17	35.4%
8.	Electronic learning resource centers (such as CD and E-book)	15	31.3%
9.	Social Media	41	85.4%
10.	E-mail	33	68.8%
11.	World Wide Web	18	37.5%

12. Blog	13	27.2%
13. Online Discussion Group	14	29.2%
14. Text and Video Chatting	24	50%
15. etc. (Canva, Quizizz)	8	16.7%

Regarding whether or not teachers used ICT tools in the classroom. Some participants insist they already use ICT tools in their teaching and learning. From the aforementioned excerpts, it can be concluded that the ICT tools used by the teachers include Google Forms, quizzes, videos, Edmodo, social media, PowerPoint, and YouTube. Most of them often used power point and quizizz in their teaching learning process.

ICT Used in Post-Pandemic

Interviews were conducted with four English teachers to explore their experiences with ICT integration after the COVID-19 pandemic. The participants generally acknowledged that classroom dynamics in the post-pandemic period differ significantly from those during the pandemic. The interview findings indicate that both teachers and students have demonstrated noticeable progress in utilizing ICT following the transition to face-to-face learning. Although various challenges were encountered during the pandemic, participants reported that they gradually adapted to new technological demands and teaching conditions. Moreover, the use of ICT in the post-pandemic classroom has contributed to the enhancement of both teachers’ pedagogical competence and students’ digital literacy, fostering more interactive and effective learning experiences.

Teacher Readiness in Using ICT

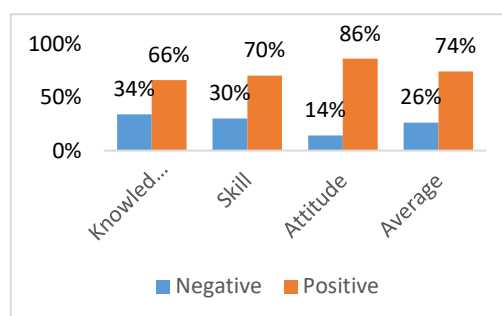


Figure 1. Teachers’ ICT Readiness

As illustrated in Figure 4.6, 74% of English as a Foreign Language (EFL) teachers

expressed positive perceptions regarding their readiness to integrate Information and Communication Technology (ICT) into classroom instruction, whereas 26% conveyed negative views. When analyzed by dimension, the knowledge component received favorable evaluations from 66% of respondents, while 34% reported less confidence in this area. The skills dimension showed a 70% positive response rate and 30% unfavorable responses. The attitude dimension, meanwhile, reflected the highest level of readiness, with 86% of teachers demonstrating positive attitudes toward ICT use and only 14% expressing reservations.

These findings suggest that the majority of EFL teachers perceived themselves as adequately prepared to adopt ICT in their teaching practices. However, despite their positive outlook, they continued to encounter various challenges in applying ICT effectively within classroom contexts.

Complementary insights from the interview data further revealed that while teachers were generally ready to utilize ICT, their practical application remained at a foundational or basic level. Most participants reported employing ICT tools primarily for instructional delivery and classroom exercises—for instance, presenting materials using PowerPoint or instructional videos, and administering assessments or practice tasks via platforms such as Quizizz or similar educational websites. This indicates that ICT use among EFL teachers in the post-pandemic era has become more accepted but remains largely limited to conventional or surface-level integration, rather than more transformative pedagogical applications.

Teachers' Attitude Readiness

The teachers' readiness on the utilization of ICT in this particular domain can be categorized into two distinct sub-components. The constructs under consideration in this study are the perceived usefulness and perceived ease of use, as proposed by Davis (1989).

Table 5.

Item	Sub-aspects	Statement	Attitude Level									
			Percentage									
			1	2	3	4	5	6	7	8	9	10
31	Perceived Usefulness	Using ICT at my job would help me work efficient and effectively.	0%	0%	0%	0%	2%	4%	13%	15%	27%	40%
32.		Using ICT wouldn't help me do my job better.	29%	17%	13%	0%	6%	2%	8%	4%	10%	10%
33.		Using ICT at work would help me increase my productivity.	0%	0%	0%	0%	2%	8%	10%	23%	25%	31%
34.		Using ICT would enhance my effectiveness on my work	0%	0%	0%	0%	2%	0%	13%	29%	23%	33%
35.		I could do my job easier if I used ICT.	0%	0%	0%	0%	4%	0%	2%	33%	27%	33%
36.		Using ICT would be beneficial to me in my work.	0%	0%	0%	0%	0%	0%	4%	31%	25%	40%
37.	Perceived Ease of Use	I would find it easy to learn how to use ICT.	0%	0%	2%	0%	2%	8%	8%	25%	27%	27%
38.		I would have no trouble getting ICT to do what I want.	0%	2%	0%	0%	6%	10%	10%	29%	17%	25%
39.		How I worked with ICT would be clear and understandable.	0%	2%	0%	2%	6%	4%	15%	29%	17%	25%
40.		It would be easy for me to learn how to skillful at using ICT.	0%	2%	0%	6%	6%	8%	17%	29%	17%	21%
41.		I would find ICT to be flexible to interact with.	0%	2%	0%	0%	6%	2%	8%	35%	15%	31%
42.		ICT wouldn't be easy for me to use.	21%	8%	10%	8%	8%	4%	8%	15%	6%	10%
		Mean	4%	3%	2%	1%	4%	4%	10%	25%	20%	27%
									14%			
		Total Mean of Teachers' Readiness							26%			
									86%			
									74%			

The Implementation of ICT in the Pandemic Era

To obtain data on how ICT was utilized in the classroom, the researcher conducted interviews with four selected EFL teachers. Among them, Teacher 3 (T3) was identified as the most active user of ICT-based teaching tools in Yogyakarta City. She integrated multiple digital platforms into her teaching practice. In addition to using PowerPoint for material delivery, she frequently employed Canva to design visually engaging and creative presentations. T3 also utilized social media platforms as a medium for students to submit and showcase their work. Furthermore, she incorporated Edmodo, Quipper, Quizizz, and instructional videos as supplementary learning resources.

“For one of the assignments, we use ICT by giving descriptive text tasks. The students

can submit their work in the form of images, text, or videos—it depends on their preference. They can create videos using Canva to express their creativity. After completing the assignment, they upload it to social media. So, they not only complete the task but also utilize media facilities effectively.” (T3, Interview, June 6, 2023)

From this excerpt, it is evident that T3 effectively leveraged ICT tools to enhance students' creativity and engagement. Her approach not only facilitated digital literacy but also encouraged active participation through multimedia-based outputs. While T3 explored a wide range of ICT tools, Fani, another teacher, also used Edmodo and Quizizz to support her instructional process. However, these platforms were supplementary rather than central to her classroom activities.

In contrast, Teacher 2 (T2) and Teacher 1 (T1) demonstrated a more limited level of ICT integration. Their use of digital tools primarily focused on presentation and assessment purposes. Both teachers relied heavily on PowerPoint to present instructional content and employed Quizizz for administering formative assessments or post-tests.

“Usually we use PowerPoint for presentations, and after that, students use their phones to complete Quizizz tasks or post-tests.” (T2, Interview, July 3, 2023)

“For example, in today's class, we use PowerPoint to present materials, play a YouTube video, and after that, students practice using Quizizz. That's how it usually goes.” (T1, Interview, June 20, 2023)

These findings illustrate varying degrees of ICT adoption among teachers. While T3 exemplified a more innovative and student-centered approach, others, such as T1 and T2, demonstrated basic or functional use of ICT that focused primarily on content delivery and assessment. This contrast highlights the differing levels of digital pedagogical readiness among EFL teachers during the pandemic period.

Challenges of Implementation ICT

Table 6.

			Challenges in The Use of ICT										
Item	Statement		Percentage										
			1	2	3	4	5	6	7	8	9	10	
44	Teacher Level	Teacher confidence	When I use ICT, I can prevent problems in many ways, such as when I write or organize my thoughts.	2%	0%	0%	4%	2%	8%	25%	27%	19%	13%
45		Teacher ICT skills	I don't have any trouble using ICT.	2%	2%	2%	2%	10%	13%	8%	33%	19%	8%
47		Training on ICT	I have sufficient knowledge and training to teach using ICT tools such as the internet, computers, and software.	2%	4%	4%	2%	6%	15%	10%	23%	27%	6%
48			The training I took helped teachers understand how to use ICT in pedagogical aspects.	4%	0%	6%	2%	13%	13%	13%	23%	19%	8%
43	School level	Access to ICT	There aren't many ICT tools and methods at school that can be used to teach English.	8%	15%	4%	6%	17%	2%	17%	13%	10%	8%
46			The internet is available and easy to get to at school.	0%	0%	0%	0%	2%	8%	21%	27%	10%	31%
49		ICT Infrastructure	The equipment and software used for teaching and learning at my school are of the highest quality and are well-maintained.	0%	4%	2%	2%	4%	10%	19%	25%	23%	10%
51		ICT support at school	ICT is a part of my school's general strategies.	0%	0%	2%	0%	10%	8%	13%	31%	21%	15%
50	System level	Regularity of the structure of the educational system	ICT can still be used even if you have to study for tests.	0%	0%	4%	0%	6%	8%	25%	19%	23%	15%

Another result of the Challenge in using ICT is evident in the interview. Various challenges encountered by the teachers were identified in the interviews. There were internet connection issues, economic factors, a lack of ICT training, and a lack of schools' infrastructure. The major challenge found in this study was a lack of ICT training.

DISCUSSIONS

Teachers' ICT Readiness

The findings revealed that the respondents demonstrated adequate levels of knowledge, skills, and attitudes related to Information and Communication Technology (ICT). These results align with the study conducted by Pang et al. (2022), which examined teachers' readiness to adopt ICT in Cambodia. Their research similarly found that teachers exhibited a positive disposition toward integrating ICT into their teaching practices. Consistent with these findings, Baya'a and Daher (2013) observed a comparable trend among mathematics teachers

in Israel, indicating a general preparedness to utilize technology in instructional settings.

Overall, the results suggest that most teachers possess a positive perception of their technological competence and confidence in using ICT tools. They also reported experiencing positive affective responses toward ICT integration in educational contexts. However, despite their favorable attitudes and self-confidence, fewer than half of the teachers reported actively incorporating ICT into classroom instruction. The results also showed that while many teachers had received ICT-related training, their proficiency remained at a basic level, primarily involving fundamental computer operations rather than advanced pedagogical applications.

Implementation of ICT

To explore how ICT was implemented in practice, the researcher conducted interviews with four selected EFL teachers. The findings indicated that all teachers utilized ICT tools in similar ways. Their primary approach involved using PowerPoint presentations and videos as instructional media to deliver lesson content. Additionally, Quizizz was employed as an assessment tool to evaluate students' understanding.

Based on these findings, it can be concluded that teachers demonstrated readiness to adopt ICT; however, their digital competencies were still limited to the basic operational level. Their practices reflected what Kumta and Shah (2002) described as the *replacement phase* of ICT integration, where multimedia tools (audio, video, animation) and online resources are introduced as substitutes for conventional teaching materials. At this stage, teachers begin to establish classroom practices that integrate technology but have not yet advanced to transformative or innovative uses of ICT.

Challenges in ICT Implementation

Teachers encountered several challenges in implementing ICT, as identified through both questionnaires and interviews. These challenges were categorized according to the three levels proposed by Balanskat, Blamire, and Kefala (2006): the teacher level, school level, and system level. Findings revealed that obstacles persisted across all three dimensions. The key challenges included unstable internet connectivity, economic constraints, insufficient ICT training, and inadequate school infrastructure.

These findings are consistent with previous studies by Salehi and Salehi (2012), Rabah (2015), Balanskat et al. (2006), and Bingimlas (2009), which reported that while ICT offers substantial opportunities for enhancing teaching and learning, its integration remains hindered by systemic and infrastructural barriers. Among these factors, the most significant issue identified in this study was the lack of continuous professional development and ICT training programs for teachers, which limits their ability to move beyond basic-level ICT utilization.

CONCLUSSIONS

Based on the analysis of the research findings and the preceding discussion, this study draws three main conclusions. First, English teachers in Yogyakarta City demonstrated readiness to integrate Information and Communication Technology (ICT) into the post-pandemic teaching and learning process. A total of 74% of EFL teachers expressed positive responses toward ICT readiness, while 26% reported less favorable perceptions. Second, the implementation of ICT among teachers primarily involved the use of LCD projectors, laptops, smartphones, Google Forms, videos, social media platforms (YouTube and Instagram), Quizizz, PowerPoint, Canva, and Edmodo. In practice, most teachers utilized ICT by delivering learning materials through PowerPoint and videos, and by assessing students' understanding via Quizizz or Google Forms. Lastly, teachers encountered several challenges in implementing ICT. The identified obstacles included unstable internet connections, economic limitations, insufficient ICT training, and inadequate school infrastructure. Among these, the lack of ICT training emerged as the most critical issue, indicating the need for continuous professional development to enhance teachers' digital competence and confidence in ICT integration.

SUGGESTIONS

To the English Teachers

Teachers are encouraged to apply their knowledge, skills, and positive attitudes toward ICT use to design effective and engaging EFL learning experiences. Continuous improvement

of ICT competence should encompass the use of hardware (e.g., computers, projectors, and digital recorders), software (e.g., multimedia and educational applications), and telecommunication and information systems. Furthermore, participation in government-initiated training programs such as *PembaTIK* (*Pembelajaran Berbasis TIK*) is highly recommended. This program serves as a national effort to enhance teachers' pedagogical skills and promote ICT-based learning innovation.

For Future Researchers

Future studies are encouraged to employ additional data collection techniques, such as classroom observations, to obtain more in-depth and contextual insights into teachers' ICT practices. Expanding the sample size and diversity of participants from various educational levels or regions is also suggested to achieve more comprehensive and generalizable results. Moreover, exploring the relationship between teachers' ICT readiness and their actual utilization of ICT in instructional settings would provide valuable contributions to the existing body of research on educational technology integration.

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