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English Teachers' Professional Competence in Utilizing ICT At Madrasah Level

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Abstract

This study explores the frequency and motivations behind the use of Information and Communication Technology (ICT) by English teachers in religiously affiliated schools in the Malang district. Specifically, the research aims to identify the ICT tools utilized by educators and the underlying reasons for their use in teaching. A questionnaire was distributed to English teachers in seven state MTs (Madrasah Tsanawiyah) in the Malang district, with 28 teachers responding to the survey. The chosen setting is based on the reason that the district of Malang had been given the rich data of the educational landscape. The study adopts a descriptive qualitative approach to analyze the data collected. The results indicate that teachers use ICT in their classrooms approximately once a week. The primary motivations for using ICT are the perceived increase in teaching productivity (10.51%) and the ability to access a wider range of instructional resources (10.38%). These results imply that educators are aware of how ICT might improve classroom dynamics and their own teaching methods. This study emphasizes the need for more investigation into the difficulties educators have when integrating ICT into their lessons, especially in associations with religious affiliations. By addressing these issues, it may be possible to integrate ICT more easily and optimize its advantages for teachers and students. Future studies should also investigate how ICT affects student learning outcomes and how professional development programs help teachers become more proficient with ICT.

Keywords: Teachers Competence; ICT; Proficiency Level.

In recent decades, academics have highlighted the role that Information and Communication Technology (ICT) contributes to helping students achieve the skills necessary for the twenty-first century in the information age. The increasing impact of globalization, which has changed how information is accessed, processed, and disseminated, is a major factor behind this emphasis. In the connected world of today, being able to use ICT effectively is no longer optional—it is a critical component of quality education.

ICT is still not widely incorporated into classroom instruction, even though educators and school administrators are becoming more conscious of its benefits. According to Voogt and Roblin (2012), many educators still do not have the support they need to modify their teaching strategies or completely comprehend how ICT might improve student learning

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results. Therefore, it is crucial to enhance teacher training programs in order to promote ICT competency among educators as well as to develop pedagogical and topic expertise. As highlighted in previous studies (Asmarani et al., 2019; Smith et al., 2006; Zayadi, 2019), discussions around what constitutes a "qualified and innovative teacher" continue to stress the importance of ICT integration as a marker of professional competence.

In response to these demands, governments have introduced various measures to support online and blended learning environments—not only during the COVID-19 pandemic but also as a permanent shift in the educational landscape (Ana et al., 2021; Mazulfah et al., 2022). The pandemic prompted a global reevaluation of how, what, and where students learn (Bubb & Jones, 2020; Zhao, 2020). While emergency remote teaching was a short-term solution, it also accelerated long-term changes in instructional delivery. However, bridging the gap between technological theory and practical application in classrooms remains an ongoing challenge. ICT has become a vital tool for fostering connections and enhancing professional expectations in education. The demands placed on educators to exhibit digital literacy and uphold professional standards in a tech-driven setting are rising along with the use of technology (Asmarani et al., 2019). ICT use is now more often regarded as a sign of professional competence in this context, which connects a teacher's technological proficiency to the standard of their instruction.

Professional competence itself encompasses more than content mastery. It involves implementing personality features, social skills, and pedagogical knowledge (Djatmiko et al., 2018; Wardoyo et al., 2020). ICT can improve these competences in a number of ways, including by fostering pedagogical innovation through interactive learning resources, strengthening social skills by facilitating a variety of communication channels, and reinforcing professional values like flexibility, perseverance, and moral behavior (Mulyasa, 2013). Teachers participate in ongoing professional development as they incorporate ICT into their lessons, meeting the demands of a quickly changing educational environment.

Studying ICT integration from the standpoint of madrasah schools offers a distinct viewpoint. Teachers in madrasahs must balance traditional and modern teaching methods because, in contrast to regular public schools, they combine religious instruction with general courses.

This dual responsibility poses distinct challenges in ICT adoption—such as balancing religious values with digital content, limited infrastructure, or cultural and institutional barriers. Understanding how madrasah teachers use ICT and the obstacles they face provides a richer picture of how educational technology can be applied in diverse contexts. Several studies have explored ICT use and its impact on teaching effectiveness. For instance, Ghavifekr (2015) found that teachers in Malaysia perceive ICT as useful but emphasize the need for adequate preparation and training. Ekberg and Gao (2017), studying secondary schools in Sweden, arrived at similar conclusions—highlighting preparation as a key challenge. Although these studies were conducted in different countries and contexts, they consistently underscore the need for readiness and support in ICT adoption. Marna (2020) also noted that university students, as digital natives, expect the integration of technology into learning. Meanwhile, Abkarin (2021) demonstrated that ICT use helped teachers in Wonosobo, Indonesia, become more effective educators. However, much of the existing literature focuses on general education settings or international contexts, with limited attention given to religiously affiliated schools.

This study seeks to address that gap by focusing on madrasah schools in Indonesia. Specifically, it investigates how English teachers in these institutions utilize ICT to enhance their professional competence and identifies

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the challenges they face in the process. By examining this underexplored context, the study contributes to a deeper understanding of how ICT can support teacher development in religiously affiliated settings.

Given the critical role of teacher proficiency in ICT implementation, this research aims to uncover how teachers perceive their own capabilities, the factors that influence ICT integration, and the competencies required to adapt effectively. To guide the investigation, the study addresses the following research questions: What ICT tools are used by English teachers in madrasah schools, and how frequently are they implemented in classroom instruction? and What factors affect ICT use in teachers' teaching and learning process?

Professional Competence

In the field of education, professional competence is a fundamental quality that defines the effectiveness and preparedness of educators. It refers to an individual's ability to integrate their knowledge, skills, behaviors, values, and attitudes to perform their professional roles successfully. According to Sulaiman and Ismail (2020), competence is a characteristic that reflects a person's behavioral capacity and plays a vital role in achieving professional goals. In the context of 21st-century education, professional competence extends beyond content expertise to include the ability to adapt to dynamic educational environments and technological innovations. Bartam (2002) defines competency as a collection of behaviors that are essential to achieving desired outcomes in specific roles. Antera (2021) further identifies professional competence as a key attribute for educators striving for effectiveness in their instructional practices. Similarly, Shakhnoza (2020) states that the educational demands of higher education reflect the broad cultural and professional competencies expected of future professionals.

In teaching, professional competence encompasses various domains, including pedagogical competence, social competence, and personal or ethical competence (Mulyasa, 2013). These dimensions are crucial for creating meaningful learning experiences and fostering positive classroom environments. In today's educational landscape, another critical domain is technological competence, which involves the ability to effectively integrate digital tools into teaching.

Information and Communication Technology (ICT)

Information and Communication The term information and communication technology (ICT) encompasses a broad spectrum of digital tools, platforms, and resources utilized for information creation, management, transmission, and storage. Computers, the internet, Learning Management Systems (LMS), interactive whiteboards, virtual classrooms, and mobile applications that facilitate teaching and learning are all examples of ICT in educational settings. According to Abdulkareem (2018), ICT is essential to modern education because it makes information gathering, organization, distribution, and retrieval easier.

ICT is a driver for educational innovation in addition to improving accessibility and efficiency. As noted by Yoan (2023), individuals can use ICT to expand their knowledge base and engage in meaningful knowledge-sharing within educational and social contexts. However, how well teachers are able to integrate ICT into their regular teaching methods has a big impact on how effective it is in the classroom.

Professional competence development is directly impacted by the incorporation of ICT into instruction. ICT, for example, can improve pedagogical competency by providing multimedia resources and interactive technologies that accommodate a range of learning styles. Additionally, as a fundamental element of professional development, technical proficiency helps teachers stay relevant in a society that is becoming more and more digital.

Linking ICT and Professional Competence in Education

Incorporating ICT into the teaching profession is essential not only for improving instructional delivery but also for addressing broader educational challenges. During the COVID-19 pandemic, ICT tools became indispensable for maintaining the continuity of learning through remote education. This global shift underscored the importance of developing teacher capacity to use technology effectively, both during crises and in routine classroom contexts (Bubb & Jones, 2020; Zhao, 2020).

Despite growing recognition of ICT's value, several studies reveal persistent challenges in its implementation. For example, Ghavifekr (2015) found that while Malaysian teachers recognize the benefits of ICT, they often lack sufficient training and preparation. Ekberg and Gao (2017), in a Swedish context, also pointed to inadequate support structures as a major barrier to ICT integration in secondary education. Marna (2020) highlighted that university students—typically digital natives—expect seamless technological integration, yet teacher preparedness often falls short. Abkarin (2021), focusing on teachers in Wonosobo, Indonesia, observed that ICT use enhanced both the effectiveness and competence of educators.

Although these studies provide valuable insights, they are often conducted in general or international educational contexts. Little research has focused specifically on madrasah schools, which have unique characteristics and challenges. Madrasahs in Indonesia combine religious instruction with general education, requiring teachers to navigate both traditional values and modern pedagogical demands. This dual responsibility may create additional barriers to ICT adoption, such as limited infrastructure, lack of digital literacy, or cultural resistance to change. Therefore, exploring ICT integration in madrasah schools not only addresses a gap in literature but also offers a nuanced understanding of how professional competence is developed in religious educational settings.

Method

The qualitative research method was chosen to effectively address the research questions and to allow for an in-depth analysis of the issues explored in this study. As Creswell (2012) suggests, qualitative research is well-suited for exploring complex problems through detailed examination, relying on textual and visual data rather than numerical analysis. This approach aligns with the objectives of the study, which seeks to understand English teachers' familiarity with and challenges in using ICT. A descriptive qualitative design was adopted to systematically present the findings in a way that reflects participants' experiences and the educational context.

In gaining the data of this research design, the Sample of this study are from 7 state Islamic Junior high schools (MTsN) in Malang regency. These schools were selected based on their 'A' accreditation status, as listed by the local Ministry of Religious Affairs. Malang Regency was chosen due to its diverse geography, including both developed and developing areas, offering a broad perspective on ICT implementation in different school environments. Participants were selected purposively to ensure they had experience in using ICT in their teaching and were representative of the school's English teaching staff.

The data collection instrument was a structured questionnaire distributed via Google Forms. The questionnaire included close-ended questions using a 3-point Likert scale (1 = Disagree, 2 = Enough, 3 = Agree), which was intended to facilitate the quantification of teacher responses for descriptive purposes. The items addressing Research Question 1 were adapted from Noven (2021), focusing on ICT familiarity. Items for Research Question 2 were adapted from both Noven (2021) and Destiana (2021), with adjustments made to align with the current research context. The

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instrument was reviewed by academic experts and piloted with a small group of teachers to ensure its clarity and relevance. The Google Form link was distributed through school coordinators, and reminders were sent via email and messaging apps to ensure a high response rate.

The data analysis process followed Miles and Huberman's (1994) model, which includes data reduction, data display, and drawing conclusions. During data reduction, responses were organized and categorized into relevant themes, focusing on simplifying and highlighting key points. Data were then displayed in the form of tables percentages to enable pattern recognition and facilitate interpretation. For instance, the percentage of respondents selecting each Likert scale option was calculated to quantify trends. Conclusions were drawn by synthesizing these findings in relation to the research questions. The process was guided by thematic patterns and frequency of responses. The conclusions reflect key findings and are discussed in relation to prior research. In addition, demographic information of the participants—such as gender, years of experience, ICT training, and school location—was collected and is presented in a table to contextualize the responses.

In the data reduction stage, participant responses were coded and grouped into thematic categories related to ICT familiarity and challenges. This process involved identifying key phrases, patterns, and repeated ideas, which were then condensed into meaningful units. Themes were not predetermined but emerged inductively from the data. These coded data were then transformed into simple descriptive summaries to facilitate interpretation and ensure manageability.

A percentage score on the data was calculated for each item by dividing the number of participants selecting a particular response by the total number of participants and multiplying by 100. Conclusions were drawn by linking these patterns directly to the two research questions. Each theme was carefully interpreted in the context of teachers' experiences and the school environment. The qualitative findings provide insight into both the extent of ICT usage and the specific barriers that influence its adoption. These findings not only respond to the research questions but also contribute to the literature on ICT integration in Islamic junior high schools, especially in diverse regional contexts like Malang.

Result and Discussion

Based on the teacher's responses, there are 2 indicators. The first indicator talks about the media used, while the other one is the preference to use the media in learning process. The first indicator, which talks about the media used in the learning process, is divided into three kinds which are then put into the table of items below.

Table 1. The percentage of the media used

Point	Item	Percentage
A	Social Media	64,3 %
B	Internet	60,7 %
C	Computer/Laptop/PPt	67,9 %

Table 1 indicates that teachers use ICT tools evenly across categories. Computers, laptops, and PowerPoint are the most used, likely because they are the most accessible and adaptable for structured teaching environments. This is in line with Noven (2021), who reported balanced usage of Internet-based resources and computer tools. While WhatsApp (Elikal, 2020) was the most used platform in other contexts, the current study finds that in state madrasahs, more formal tools like PowerPoint are preferred, suggesting an inclination toward structured delivery methods over informal platforms.

Further analysis reveals overlaps in usage—many teachers reported using more than one media type, which suggests that teachers do not rely solely on a single technology but integrate various tools to enhance classroom interaction and resource access.

The second indicator is that the

preference of time in using ICT. The use of ICT in classroom or learning process is shown in the form of this simple label which consists of 3 preferences time and in percentage display (See Table 2).

Table 2. The percentage of the media used

Preference time	Percentage
Every meeting	25 %
Once a week	39,3 %
Once a month	35,7 %

It is directly created toward the form of percentage, which then has no need to have the integrated number. Most teachers prefer using ICT on a weekly basis, aligning with findings from Noven (2021) and suggesting a manageable balance between technology integration and conventional teaching. This choice likely reflects both the teachers' readiness and infrastructural constraints.

Factor Affecting the Use of ICT

To explore factors affecting ICT integration, 10 Likert-scale items were analyzed. There exist 10 questions related to the factor of using ICT in classroom activity. This questionnaire is chosen by selecting number scale 1 until 3 in each. Each item was scored, totaled, and converted into a percentage to identify dominant factors.

Table 3 result is gotten from respondents and then for the next is calculated into another table with the additional integrated score linked to the percentage. The highest-rated factor (10.51%) was increased teacher productivity through ICT, supporting Noven (2021) and aligned with Tucker's (1994) concept of professional competence. Closely following is improved access to instructional resources (10.38%), suggesting that ease of content delivery complements productivity. These factors appear interconnected—teachers who perceive ICT as time-saving and resourceful are more likely to find it boosts their overall effectiveness.

Interestingly, the lowest-rated factor (9.09%) was the sense of obligation to use ICT. This suggests that, while most teachers recognize the value of ICT, they may not feel institutional or curricular pressure to adopt it regularly. This implies a more intrinsic motivation for ICT use, which is consistent with the Self-Concept and Motivation dimensions of Tucker's theory.

Range of ICT used

In this part, the questions are grouped into 4 big construct processes. This refers

Table 3. Factor affecting the use of ICT

No	Question	Integrated Score	Percentage
1	I always utilize ICT services to look up teaching materials (news, article, video, etc)	79	10,25 %
2	I think using ICT makes effective use of class time.	79	10,25 %
3	I think using ICT makes me more productive as a teacher.	81	10,51 %
4	I think that I can use ICT in class activities more effectively day by day.	75	9,74 %
5	I believe that ICT services like internet, computer, laptop, social media will make communication with my students easier.	79	10,25 %
6	I think that usage of instructional ICT makes it easier to prepare course materials (assignments, handouts, etc.).	78	10,12 %
7	I can handle different learning preferences of my students having different learning styles by using instructional ICT.	71	9,22 %
8	I think that ICT media makes it easier to reach instructional resources in the class.	80	10,38 %
9	I think that using ICT will change the pattern of learning and work activities.	78	10,12 %
10	I feel that I must use ICT services during my classes.	70	9,09 %

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to the Bonita's Instrument (2021). Which in its process exists some items that in the practice will lead into certain construct process. Technological Knowledge is the basic construction that people have related to the knowledge. After the basic one, it is followed by the content made through technology. It states about material construct and form into certain technology, tools or media. The next is Pedagogical Knowledge which belongs to the teaching ability by using technology in learning process in a classroom environment. The last stage is that the perfect one lead to the content, teaching ability and technological knowledge mixed into teaching process.

Table 3 shows the ICT used grouped by the range of knowledge on technology. Separated from the use of the classroom, this questionnaire talks about their ability rather than preference in using it. It is divided into 4 groups which each knowledge is divided into 3 statements. The first group up to fourth group are sorted from the simplest construct process and followed by the more perfect than the previous one.

The strongest competence was demonstrated in the TPACK construct (9.0%), indicating that many teachers have reached an advanced stage of integrating content, pedagogy, and technology. The weakest area is technical troubleshooting (TK-item 3), reinforcing the need for targeted training in foundational technical skills.

Kinds of Technology used in Teaching English

Participants are given three options based on the first research question formulation (RQ1), which is about the types of technology employed. These options are then grouped into three major items: Computers, Social Media, and the Internet. Every item allows respondents to select multiple responds, allowing them to provide more than one response. The results showed that 28 respondents said they utilize ICT for learning.

From the overview, the three ICT groups are used almost equally with the percentage of table 1 as much as 61% to 68%. It is a figure that is close to the percentage like which then interpreted that respondents use each ICT item equally in implementing their professional competence. According to the data from this study, it is slightly different from Jean Elikal's statement (2020) which states WhatsApp as the most commonly used. While WhatsApp in this study is an element included in social media, while the highest percentage is the use of Computer/Laptop/ PPt. This shows that it is rather quite in line with Noven (2021), who claims that the ICT commonly used is balanced between the group of 'Internet' and 'Computer or Laptop'. This can also be concluded that teachers' familiarity with ICT is more or less the same as each other. Which is then also interpreted as the ability of teachers to improve their competence by using almost 3 kinds of ICT. The differences of subjects used might be the influence in this result. Thus, the considered finding to be the primary data is table 1, where it is noticeable that 67.9% of respondents believe that they use their computers, laptops, or PPTs the most.

According to data displayed in table 3, 39.3% of respondents said they use ICT as a learning tool on weekly schedules. And for the other response, use it once a month. This supports Noven's (2021) assertion that respondents from vocational high schools and senior high schools shared similar preferences. All of the respondents in this study felt that they need to prepare while using ICT, even though the desire for weekly use was the greatest. According to this research, ICT is primarily utilized by primary public-school educators in their teaching and learning processes.

Factors affecting ICT use

Factors that influence teacher competence using ICT existed in 10 questions on the Table 4. Teachers assess the need to use ICT supported by several factors which are then formulated into questions in the table. Of the 10 questions provided, each has their own values, but then to make it easier in resulting

Table 4. The range of ICT use

No	Construct	Items	Integrated Score	Percentage
1	Technological Knowledge (TK)	1. I have the technical skills to use computers effectively	66	7,9 %
		2. I can learn to use technology easily	71	8,5 %
		3. I know how to solve my own technical problems when using technology	60	7,2 %
2	Technological Content Knowledge (TCK)	1. I can use appropriate technology to represent the content of my teaching subjects	71	8,5 %
		2. I know about the technology I need to use to learn the content of my lessons	73	8,7 %
		3. I can use specialized software to conduct investigations about my teaching subjects	66	7,9 %
3	Technological Pedagogical Knowledge (TPK)	1. I can use technology to introduce my students to real-world scenarios	73	8,7 %
		2. I can facilitate my students to use technology to find more information on their own	74	8,8 %
		3. I can facilitate my students to use technology to construct various forms of knowledge representations	73	8,7 %
4	Technological Pedagogical Content Knowledge (TPACK)	1. I can formulate in-depth discussion topics about content knowledge and facilitate students' online collaboration with appropriate tools	65	7,8 %
		2. I can structure activities to help students construct different representations of content knowledge using appropriate ICT tools	66	7,9 %
		3. I can create independent learning activities from content knowledge with appropriate ICT tools	75	9 %

score is integrated into tens and changed into a percentage.

According to the percentage statistics, point 3, which states that one of the factors contributing to teachers' increased productivity is the implementation of ICT, had the greatest value for the ICT usage aspect. Point 8, which states that ICT makes it simple to get instructional resources in the classroom, comes next. The points made in those responses are supported by one another. According to this study, Jean Elikal (2020) discovered that one reason for adopting technology is as a way to learn new things. Tucker's Big Theory (1994) of teachers' competency, which emphasizes increasing knowledge and motivation, helped further emphasize this.

Following that, in item number 2, it is presented as Tucker's (1994) support point in terms of Self Concept and Value, indicating that teachers view the use of ICT as a way to accommodate teacher competence in the classroom in a balanced way. T2 also discussed this, acknowledging that it made it easier for students to learn the material because they weren't always attached to books, and even T1 acknowledged that learning with ICT didn't always have to take place in the classroom, making it more engaging for students.

The concept of "Characters" is then demonstrated by question item number 5, which explains why ICT is a service that facilitates communication with learners. This is consistent with Noven's (2021) conclusion that the main reason for this is to facilitate daily communication with the students.

However, there is potential to enhance the reasons for ICT integration based on the lowest finding regarding the reasons for using ICT (question 10), which is the potential for raising awareness of the necessity of utilizing ICT in the classroom.

To answer the continuity with S. Tucker's concept, it is concluded from the five concepts, all are recognized as reasons for teachers to achieve better competence with the use of ICT. All five concepts are answered with data findings on factors that influence the use of ICT. So, at this stage respondents of this research are aware of the competency improving by the use of ICT.

This is different from previous studies.

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Another finding from the ICT used data range is where the range of teachers at the primary level at which stage is classified. There are four groups of technology awareness. The questionnaire data revealed that respondents were stronger in the pedagogical and technological content aspects, particularly in facilitating technology-based learning, as evidenced by the highest score of 9%. The main weakness, on the other hand, is the technical ability to solve technological problems independently (TK-item 3). The obvious conclusion here is that the range of teachers' technological abilities is at the highest stage, namely TPACK.

Practical Implications and Connections to Literature

The findings underscore several implications for both policy and practice. First, despite their relative competence in pedagogy and content integration, teachers require support in developing basic technological skills. Training programs should prioritize hands-on workshops that focus on solving common ICT issues, especially in low-resource settings.

Moreover, preferences for tools like PowerPoint and computers should inform future professional development—these platforms are not only familiar but can serve as gateways to more advanced applications. Strategies such as micro-teaching with ICT, peer demonstrations, and showcasing best practices in blended learning could enhance uptake.

This study reinforces the literature on ICT's role in enhancing teacher performance, particularly in madrasahs, a setting that remains underrepresented in mainstream research. While prior studies (Elikal, 2020; Noven, 2021) provide general insights into secondary education, this study contributes a contextualized understanding of ICT in state Islamic junior high schools, where both tradition and modern pedagogy intersect.

Finally, exploring the synergy between productivity, access to resources, and communication highlights a systemic view of ICT benefits. These factors are not isolated but rather form a reinforcing loop: effective communication via ICT supports engagement, which enhances access to diverse materials, leading to increased teacher productivity and learner-centered environments.

Conclusion

Three kinds of response to the full research question were discovered in this study. First, among the three types of ICT tools examined, computers / laptops / Power Point emerged as the most frequently used technology, as indicated by 67.9% of the teachers. This suggests that educators prefer structured, presentation-based tools that support formal classroom instruction. Second, the majority of respondents (39.3%) reported using ICT at least once a week, indicating a consistent but manageable level of integration that supports teaching routines without overwhelming preparation time. Third, the most strongly endorsed reasons for using ICT were its perceived ability to enhance teacher productivity (10.51%) and facilitate access to instructional resources (10.38%). These findings align with prior research suggesting that ICT not only improves lesson delivery but also contributes to professional efficiency (Noven, 2021; Tucker, 1994).

Additionally, the data shows that teachers are operating at the TPACK stage of ICT competence, particularly in their ability to integrate content, pedagogy, and technology into cohesive classroom practices. The highest-rated TPACK-related response (9%) involved creating independent, ICT-supported learning activities. This indicates that madrasah teachers are not merely using technology for presentation or communication but are applying it in ways that support student-centered and inquiry-based learning—hallmarks of the TPACK framework (Mishra & Koehler, 2006).

This research implied that from some

previous studies, some cases conducted in the different settings level, like vocational, secondary or even certain local area, while this study is in madrasah level, but the finding is almost the same on the part of ICT used and the reason in having ICT for classroom learning. Despite differences in institutional context, such as religious education in madrasahs, the findings affirm that teachers at various levels value ICT for its practical teaching benefits. This suggests that professional competence in ICT is developing similarly across educational sectors, reinforcing the broader applicability of ICT integration frameworks like TPACK.

However, several limitations must be acknowledged. The sample size of 28 teachers is relatively small, which restricts the generalizability of the findings. Moreover, all participants were from madrasah schools, which may differ culturally and operationally from public or private secular institutions. As such, contextual factors such as institutional policy, available infrastructure, and community expectations may have influenced the results and should be considered when interpreting their broader applicability.

Furthermore, this study focused exclusively on teachers' perspectives, without considering student experiences or learning outcomes. This creates a gap in understanding how ICT integration affects the learning process from the student's point of view. Future studies should adopt a more holistic approach by incorporating student feedback, classroom observations, and assessment data to measure how ICT impacts academic performance and engagement. Additionally, investigating the barriers to ICT implementation would provide valuable insights into the systemic challenges teachers face.

The study contributes to the field by filling a gap in ICT research within Islamic educational institutions, an area that has received less attention compared to public or vocational schools. It also reinforces the relevance of the TPACK model in non-traditional or religious school contexts, showing that the model's stages of integration are observable and applicable even outside mainstream education systems.

Practical implications of the findings include the need for ongoing teacher training programs that strengthen both pedagogical and technical skills, especially in troubleshooting and digital lesson design. Educational policymakers should consider allocating resources and support for ICT infrastructure in madrasahs and similar institutions. This can also facilitate knowledge sharing and foster innovation in digital instruction.

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