



Competence of Islamic Religious Education Teachers in Implementation of Learning Media Based Information Communication Technology (ICT) of Mas Nurul Ulum

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ARTICLE INFO

Article history:

Received
Received in revised form
Accepted
Available online

Keywords: Islamic Education teacher competency, ICT based learning media

ABSTRACT

Study This aim for (1) For increase Islamic Education teacher competency in implementation of learning media ICT based at MAS Nurul Ulum, (2) For explain Teachers' ability to implement ICT based learning media at MAS Nurul Ulum, (3) For find solution obstacle And Islamic Education teacher solutions in implementation of learning media ICT based at MAS Nurul Ulum. Study This use descriptive qualitative approach. Results study show that (1) Competence of Islamic Religious Education (PAI) Teachers in Implementation of Learning Media ICT based at MAS Nurul Ulum, that the PAI teacher has show competence strong professional And relevant with demands modern education based on technology. This is looks from ability they in Mastery Material Lessons, Determination Objective Learning, Use Method and Learning Media, Learning Process Management, Evaluation Results Learning, Development Professionalism Sustainable, and Integration Mark Religious . (2) PAI teacher's ability in implementation of learning media ICT based at MAS Nurul Ulum show significant progress. Teachers have capable master, design, develop, and implementing digital media effective, with impact positive to quality learning And teacher professionalism. Strengthening competence technical, media innovation, and improvement facility And training sustainable become key For maximize utilization of ICT so that the learning process the more interactive, interesting, and relevant with demands modern education as well as values Islam. (3) H obstacles And Islamic Education Teacher Solutions in Implementation of Learning Media ICT based at MAS Nurul Ulum show that teachers face three obstacle main, namely limitations means And infrastructure, differences ability technical teacher in use technology, as well as low readiness student in learning digital based. Solutions, utilizing offline media, using device personal, collaborative between teachers in media creation, as well as combine ICT methods with approach conventional.

1. Introduction

Classroom observations reveal that the teacher effectively incorporated technology to augment student engagement by utilizing instructional videos, interactive quiz tools (e.g., Kahoot), and digital learning platforms like Google Classroom. Nonetheless, successful implementation was hindered by insufficient technological proficiency, inadequate school infrastructure—comprising

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<https://doi.org/10.56806/jh.v6i4.332>

equipment failures, unreliable internet access, and limited laboratory availability—and institutional regulations that prohibit students' utilization of personal digital devices (Rahmah, 2025). For example, the use of Kahoot successfully increased student enthusiasm due to its interactive nature, but it was hindered by a packed laboratory schedule and unstable internet connection, forcing the teacher to use temporary solutions such as tethering from a personal phone (Latami, 2024). Likewise, Google Classroom reached only 60% of students due to the ban on bringing mobile phones, and although YouTube videos on Islamic history attracted students' attention, the teacher struggled to create their own videos due to a lack of skills (Djazilan & Hariani, 2022). As a result, the teacher often returned to lecture-based methods, which are more practical despite being less interactive. With regard to the competencies of Islamic Education (PAI) teachers in implementing ICT-based learning media, the results are varied but show significant influence (Arif et al., 2025). Among them, research conducted by Abdullah (2018) found that PAI teachers at SMP Negeri 3 Parepare possessed good pedagogical, personal, social, professional, and leadership competencies, yet ICT utilization remained suboptimal due to limited training and infrastructure (Tsaqofah et al., 2025). The digital technology improves accessibility and interactivity in learning, but low digital competence among teachers and unequal access to technology become obstacles (Nasaruddin et al., 2023).

Acep Nurlaeli (2020) at SMA Negeri Sukabumi noted that PAI teachers were able to plan and implement ICT-based learning, increasing students' motivation and independence, although hindered by internet connectivity issues (Fahmi et al., 2021). Research emphasized the importance of media innovations such as Mentimeter for effective learning, showed that training and self-directed learning improved digital competence among elementary school teachers (Lubis, 2023). The TPACK approach at MAN 1 Sumbawa, which supports HOTS-based learning, although limited by internet access and device availability (Mintasih et al., 2024). Overall, PAI teachers' ICT competencies need to be improved through intensive training and infrastructure support to address challenges and maximize learning effectiveness (Parianto & Kalsum, 2024).

Based on the arguments from the three teacher statements described above, the core issue supported is the imbalance in educational technology adoption, namely the gap between the potential of technology to enhance learning and the real obstacles that hinder its implementation. Teachers show enthusiasm for using technology such as videos, quiz applications (Kahoot), and the Google Classroom platform, which have been proven to increase student engagement—for instance, when Kahoot boosted student enthusiasm due to its interactive nature or when YouTube videos on Islamic history captured students' attention (Sinaga & Sudariah, 2025). However, challenges such as insufficient technological skills (e.g., difficulty creating their own videos), inadequate school infrastructure (computer errors, slow internet, and limited laboratory access), and school policies restricting mobile phone use (resulting in only 60% of students being active on Google Classroom) often cause teachers to revert to more practical but less interactive lecture-based methods (Hasnahwati et al., 2025).

This argument supports the issue that although technology has great potential, external barriers (infrastructure and policy) and internal barriers (teacher competence) hinder its optimal utilization. Concrete findings show that the low digital competence of PAI teachers at MAS Nurul Ulum, combined with limited infrastructure and unequal student access, has become a major obstacle in ICT implementation (Zulkifli & Muzakki, 2025). Interviews with three teachers illustrate varying skill levels, with younger teachers demonstrating better adaptation to technology, yet still constrained by inadequate facilities (Pratama et al., 2025). Resistance to ICT is more evident among senior teachers who are more comfortable with conventional methods. The lack of intensive training is also a key factor limiting learning innovation (Sopandi & Suherman, 2025).

The competence of Islamic Education (PAI) teachers in implementing Information and Communication Technology (ICT)-based learning media at Madrasah Aliyah Swasta (MAS) Nurul Ulum has not reached an ideal level due to several major challenges. Many PAI teachers still have limitations in operating technology, such as e-learning applications or digital presentation media, due to insufficient intensive training. Inadequate technological infrastructure, such as slow internet access and limited devices, also hampers the effective application of ICT.

In addition, resistance to technological innovation from some teachers—who tend to feel more comfortable with conventional methods—and a PAI curriculum that has not fully integrated ICT are other inhibiting factors. Challenges in managing online learning, such as lack of student discipline and difficulty in monitoring learning activities, further worsen the situation. To address these issues, routine training is needed to improve teachers' digital competence, investment in technological infrastructure, development of an ICT-based curriculum, as well as ongoing mentoring and evaluation. With these steps, ICT implementation in PAI learning at MAS Nurul Ulum can be optimized to create a more innovative, interactive, and effective learning process for students.

Research on the competence of Islamic Education (PAI) teachers in implementing Information and Communication Technology (ICT)-based learning media at MAS Nurul Ulum holds significant importance for several reasons. First, this research can identify the level of digital competence of PAI teachers, which is crucial in improving learning quality in the digital era. By understanding teachers' strengths and weaknesses in using ICT, the school can design appropriate training to enhance their skills. Second, this research helps reveal technological infrastructure constraints, such as internet availability and devices, which often hinder ICT implementation in educational settings. Third, the findings can serve as the basis for developing a PAI curriculum that is more integrated with technology, making learning more interactive and relevant to the needs of modern students.

Fourth, this research can evaluate the impact of ICT on student motivation and learning achievement, providing empirical evidence of the effectiveness of technology-based learning media. Finally, this research contributes to the development of educational policies at MAS Nurul Ulum, encouraging innovation in teaching methods and ensuring that PAI teachers are able to face the challenges of 21st-century education. Thus, this research not only improves teacher competence but also strengthens the overall quality of religious education at the institution.

2. Methodology

This research employs a qualitative descriptive methodology. The researcher utilized this strategy to gather data concerning the proficiency of Islamic Education (PAI) teachers in the application of Information and Communication Technology (ICT)-based learning media at MAS Nurul Ulum. This methodology was selected to get comprehensive and contextual information about PAI instructors' competencies in employing ICT tools, including learning software, projectors, and digital platforms in the instructional process. The study was carried out at MAS Nurul Ulum, situated on Jln. Medan–Banda Aceh KM. 394, Peureulak, Cot Keh Hamlet, Peureulak District, East Aceh Regency. The designation of MAS Nurul Ulum in East Aceh as the research site for examining the ability of PAI teachers in the use of ICT-based learning media was predicated on various pertinent academic factors.

The research data include both primary and secondary data. This study's primary data sources, which examine the proficiency of Islamic Education (PAI) teachers in utilizing Information and Communication Technology (ICT)-based learning media at Madrasah Aliyah Swasta (MAS) Nurul Ulum, were directly acquired from the subjects and research context to guarantee data validity and relevance. Primary data comprises comprehensive interviews with PAI educators to examine their proficiency in utilizing ICT media—such as e-learning software or interactive presentations—and the

obstacles they encounter. This study utilizes secondary data sources comprising government papers and literature pertinent to the context of MAS Nurul Ulum and the research subject. Data collection techniques were carried out through observation, documentation, and interviews. The data analysis technique consists of three concurrent phases: data reduction, data presentation, and data verification (drawing conclusions).

3. Results

3.1 The Competence of Islamic Education (PAI) Teachers in Implementing ICT-Based Learning Media at MAS Nurul Ulum

Kompetensi guru PAI dalam implementasi media pembelajaran berbasis ICT menjadi faktor It is important in improving the quality of learning in the digital era. Teachers are not only required to master religious material but also to be able to utilize technology as an engaging and interactive means of delivery. At MAS Nurul Ulum, the ability of PAI teachers to use ICT-based media reflects their efforts to adapt to modern educational developments. Through technological mastery, teachers can optimize the learning process to be more effective, relevant, and able to foster students' interest in Islamic Education.

Professional competence is an essential ability that every educator must possess to carry out their duties effectively, efficiently, and responsibly. In the context of Islamic Education (PAI) teachers, professional competence does not only emphasize mastery of subject content but also the ability to develop and adjust learning in accordance with the dynamics of the times, scientific developments, and the characteristics of learners. PAI teachers are required to have an in-depth understanding of the substance of Islamic teachings which includes Qur'an and Hadith, Fiqh, Islamic Creed and Ethics (Aqidah Akhlak), and Islamic Cultural History while also being able to integrate Islamic values into students' real-life experiences in today's digital era.

Mastery of subject matter is a core aspect of professional competence and serves as the foundation for effective teaching. A teacher with strong subject mastery not only understands lesson content but can also relate the material to social contexts and the needs of learners. In this study, based on interviews with PAI teachers at MAS Nurul Ulum, it was found that they have a high level of mastery of the subject matter and are able to implement it in the learning process. For example, Muhammad Nur, a teacher of Islamic Cultural History (SKI), explained that he strives to relate Islamic historical material to modern civilization, such as the development of digital da'wah, so that students can understand the relevance of Islamic values in contemporary life.

A similar view was expressed by Arif Finandia, a teacher of Aqidah Akhlak, who emphasized the importance of making the teachings of faith and ethics relevant to the lives of today's youth by providing concrete examples of social behavior. This approach shows that teachers are not only focused on cognitive aspects but also on internalizing Islamic values into students' character. Meanwhile, Yurdha Fitri, a Qur'an and Hadith teacher, emphasized that PAI teachers must understand the thematic and contextual interpretation of Qur'anic verses and hadiths so that learning becomes more lively and meaningful. Likewise, Ustaz Fadhul Maulana Husin, S.Pd, a Fiqh teacher, explained that he strives to connect fiqh concepts of worship and social transactions (muamalah) with students' daily practices so that Islamic values can be applied in a real, practical manner.

The head of the madrasah, Ustaz Muhammad Reza, S.Pd.I, also assessed that all PAI teachers at MAS Nurul Ulum have mastered the teaching material well and continually adjust their teaching to the latest curriculum. This indicates synergy between scholarly understanding and teacher professionalism in carrying out a learning process that adapts to curriculum changes. Based on observations, it is evident that PAI teachers are able to explain Islamic concepts such as creed, ethics,

fiqh, and Islamic cultural history systematically and clearly. They are also able to cite relevant Qur'anic verses and hadiths to reinforce their explanations, making the learning process more contextual and spiritually enriched.

Theoretically, these findings align with Musfah (2023), who states that professional teachers not only master the subject matter but also possess methodological abilities to transform knowledge to learners through contextual and applicable approaches. Strong subject mastery enables PAI teachers to adjust learning strategies to the characteristics of students as well as the development of information technology in religious education. Thus, the professional competence of PAI teachers at MAS Nurul Ulum demonstrates an integration of mastery of scientific substance, pedagogical understanding, and innovative abilities in implementing information and communication technology (ICT)-based learning.

The results of this study also reinforce the view that the professional competence of PAI teachers cannot stand alone, but must synergize with pedagogical, personal, social, spiritual, and leadership competencies to support teaching quality. Teachers who have strong subject mastery are better able to develop creative learning strategies, conduct objective evaluations, and build positive learning interactions. In this context, PAI teachers at MAS Nurul Ulum have demonstrated strong professional competence through their mastery of the material and the use of contextual approaches relevant to students' lives.

Thus, it can be concluded that subject mastery and scientific competence of PAI teachers at MAS Nurul Ulum are categorized as very strong and support the effective achievement of Islamic Education learning objectives. The teachers not only have an in-depth understanding of Islamic teachings from various aspects but are also able to relate them to students' modern lives. This condition reflects that the professional competence of PAI teachers at the madrasah has developed optimally and is capable of responding to the challenges of the ever-changing digital era.

Setting learning objectives is one of the fundamental aspects of teachers' pedagogical competence, playing an important role as the direction, target, and indicator of success in the teaching learning process. Based on interviews and observations at MA Nurul Ulum, PAI teachers have shown the ability to establish learning objectives aligned with the Merdeka Curriculum and guidelines from the Ministry of Religious Affairs. Each PAI subject teacher (Qur'an-Hadith, Fiqh, SKI, and Aqidah Akhlak) formulates learning objectives by considering the characteristics of students, the context of the madrasah, and the Islamic values to be instilled.

The Qur'an-Hadith teacher establishes objectives for students to understand the meaning of Qur'anic verses and hadiths and to apply their values in daily life. The Fiqh teacher emphasizes achieving competence in understanding Islamic law and practicing it correctly. The SKI (Islamic Cultural History) teacher formulates objectives so that students can draw lessons and exemplary values from the history of Islamic civilization to shape Islamic character. Meanwhile, the Aqidah Akhlak teacher aims to strengthen students' faith and habituate virtuous behavior both within the madrasah and in the broader community.

From the observations, PAI teachers delivered the learning objectives at the beginning of the lesson as a form of guidance and motivation for students. Each objective was formulated in the Lesson Plan (RPP) with measurable indicators such as the ability to understand the material, relate it to real life, and demonstrate positive behavior. This reflects the teachers' awareness of the importance of objectives that are specific, measurable, achievable, relevant, and time-bound (the SMART Objective principle).

This indicates that the formulation of learning objectives by PAI teachers at MA Nurul Ulum is conceptually sound, but still requires strengthening in the integration of cognitive, affective, and psychomotor domains. Some teachers still tend to focus on achieving knowledge-based outcomes,

while the dimensions of attitude and skill have not been addressed in a balanced manner. In addition, limitations in the use of ICT media and creative learning methods also hinder the realization of contextual and character-oriented learning objectives.

These findings are in line with Mulyasa, who states that learning objectives must be formulated by considering students' needs, the learning environment, and ongoing social changes so that the learning process becomes more meaningful and effective. Furthermore, Rusman emphasizes that professional teachers do not merely set objectives based on the curriculum but must also be able to link those objectives with learning experiences that foster students' potential and character. In the context of PAI learning, this means that objective-setting should not only focus on cognitive achievement but must also cultivate students' spiritual and moral awareness.

Thus, it can be concluded that PAI teachers at MA Nurul Ulum possess good competence in setting learning objectives in accordance with curriculum standards. However, to achieve more meaningful and contextual learning, it is necessary to enhance the design of integrative, character-based objectives that align with the development of digital learning technology.

3.2 The Ability to Implement ICT-Based Learning Media at MAS Nurul Ulum

Teachers' ability to implement Information and Communication Technology (ICT)-based learning media reflects their level of mastery in utilizing digital technology to support the teaching and learning process. In the context of Islamic Education (PAI), this ability is not only measured by how well teachers can operate technological tools such as laptops, projectors, or learning applications, but also by their capacity to align the use of such technology with instructional goals, students' characteristics, and the Islamic values embedded in the lesson content.

The implementation of ICT media at MAS Nurul Ulum indicates a shift in the learning paradigm from conventional methods to interactive and digital-based learning. Teachers have made efforts to integrate various technology-based media, such as PowerPoint, instructional videos, digital Qur'an applications, and Google Forms, to support a more effective and engaging learning process.

Teachers' knowledge of ICT-based learning media includes understanding the functions, types, and ways technology can be utilized in the teaching and learning process. Teachers with strong knowledge in this area are able to select media that align with students' characteristics and learning needs. This understanding is an essential foundation for creating interactive, meaningful, and contextual learning experiences.

Interview results show that teachers at MAS Nurul Ulum already have a good understanding of how to utilize ICT media. As expressed by Yurdha Fitri, a Qur'an–Hadith teacher, she frequently uses short tafsir videos and digital Qur'an applications in her lessons to increase student interest. Similarly, Ustaz Fadhul Maulana Husin, S.Pd, a Fiqh teacher, has used Google Forms as an evaluation tool and PowerPoint presentations to explain religious content.

Meanwhile, Arif Finandia, a teacher of Aqidah Akhlak, emphasized that using short videos on good behavior is an effective way to instill ethical values in students. According to him, ICT media is not merely a teaching aid but also a means of instilling Islamic values in a concrete way. On the other hand, Muhammad Nur, a teacher of Islamic Cultural History (SKI), noted that the use of videos and digital maps makes history lessons more vivid and captures students' attention.

From a managerial perspective, the head of the madrasah, Ustaz Muhammad Reza, S.Pd.I, stated that the school continues to encourage teachers to master digital media. All teachers are already accustomed to using PowerPoint, and some have begun producing and using their own instructional videos. Moving forward, the madrasah plans to develop online platform–based learning so that the teaching and learning process becomes more efficient and adaptive to technological developments.

The observation results support these findings, showing that most teachers at MAS Nurul Ulum possess adequate knowledge regarding the use of ICT media. They are able to understand the functions, benefits, and practical steps involved in using technology in the learning process. However, limitations are still found in technical aspects such as producing instructional videos or independently editing digital learning materials.

The research findings indicate that the ability to implement ICT-based learning media at MAS Nurul Ulum has shown positive development. Teachers not only understand the basic functions of technology but are also able to apply it in accordance with the context of Islamic Education (PAI) learning. This aligns with Rusman's view that the success of ICT media implementation in learning depends on the teacher's ability to integrate technology into instructional design and teaching strategies that are relevant to students' needs.

Furthermore, the findings also reinforce research by Sari and Ningsih, which states that teachers with strong ICT knowledge and skills tend to be more creative in designing instructional media and creating enjoyable learning experiences. Nevertheless, limitations in technical abilities and facilities remain major obstacles that require serious attention.

Efforts to improve teachers' ICT competencies can be carried out through practice-based training, professional mentoring, and teacher collaboration to share experiences and digital teaching strategies. Support from the school management in providing facilities, infrastructure, and digital learning policies is also a significant contributing factor. Thus, it can be concluded that the teachers at MAS Nurul Ulum have demonstrated good capability in implementing ICT-based learning media, although further improvements in innovation and technical proficiency are needed so that ICT-based PAI learning becomes more optimal and positively impacts students' learning outcomes.

The ability to design and develop ICT-based learning media is one of the key indicators of 21st-century teacher professionalism. This competence not only involves technical skills in operating digital devices and applications but also reflects the teacher's creativity in aligning learning media with instructional goals, students' characteristics, and the context of the lesson material. Teachers with this competence are expected to create interactive, engaging, and meaningful media that enhance the quality of both the learning process and learning outcomes.

Interview results show that teachers at MAS Nurul Ulum have demonstrated good abilities in designing and developing ICT-based learning media. Yurdha Fitri, a Qur'an–Hadith teacher, stated that she often adapts teaching materials into simple digital formats such as PowerPoint slides, short videos, and Google Forms, adjusting the design according to the theme of the verses being taught to make learning more appealing and easier for students to understand. This indicates pedagogical awareness in using technology as a means to deepen students' understanding of Qur'anic values.

Similarly, Ustaz Fadhul Maulana Husin, S.Pd, a Fiqh teacher, explained that he independently learned to create animated slides and online quizzes. These innovations have proven to increase student enthusiasm, as the media used are not only informative but also interactive. This approach aligns with the principle of student-centered learning, where technology is utilized to create active and enjoyable learning experiences.

Furthermore, Arif Finandia, a teacher of Aqidah Akhlak, reported that he has been able to produce digital posters and short videos using clips from Islamic films to strengthen students' moral character building. However, he also noted that he still requires further training to master more advanced applications. This illustrates that teachers' innovations in developing ICT media are often constrained by limited technical skills.

Meanwhile, Muhammad Nur, the Islamic Cultural History (SKI) teacher, stated that he developed a historical timeline media using Canva, which helps students understand the sequence

of events in Islamic history visually. This visual approach is effective in enhancing students' retention and learning engagement, especially in narrative-based subjects such as history.

From the perspective of institutional policy, Ustaz Muhammad Reza, S.Pd.I, as the head of the madrasah, emphasized that the school consistently encourages teachers not only to be users of available media but also creators of digital learning content. Several teachers have produced independent instructional materials in the form of videos and interactive learning resources as part of the implementation of digital innovation-based learning within the school.

These findings indicate that the teachers' level of creativity has developed, although there is still room for improvement in technical and innovative aspects. This aligns with research by Anwar and Widyastuti, which states that teachers who receive intensive training in digital media design are able to produce more varied, interactive, and impactful instructional media that significantly increase students' learning motivation.

In addition, the ability to design ICT media is closely related to teachers' pedagogical competence, particularly their ability to manage effective learning that adapts to students' needs. According to Wiyono, the development of ICT-based digital media must take instructional design principles into account so that the media created are not only visually appealing but also support the achievement of learning objectives.

Institutional support from the madrasah also plays an important role. Through continuous training, adequate facilities, and a collaborative culture among teachers, the ability to design and develop ICT-based learning media at MAS Nurul Ulum has the potential to increase significantly. Such improvement will ultimately strengthen the effectiveness of PAI learning, making it more contextual, creative, and aligned with the demands of the digital age.

The ability to implement Information and Communication Technology (ICT) in learning illustrates the extent to which teachers can effectively apply digital technology in the classroom. This mastery is not only related to technical skills in using devices such as laptops, projectors, or online applications, but also to pedagogical competence in integrating these media meaningfully into the teaching and learning process. Proper ICT implementation can help teachers explain abstract concepts, enhance student participation, and create a more interactive and enjoyable learning atmosphere.

Interviews with PAI teachers at MAS Nurul Ulum show that the implementation of ICT media has been carried out quite well across various religious subjects. Yurdha Fitri, the Qur'an-Hadith teacher, explained that she often displays tafsir videos or Qur'anic recitations with Arabic text and translations on the screen to help students focus and better understand the meaning of the verses visually and auditorily. The use of such audiovisual media strengthens comprehension and provides multisensory learning experiences.

Meanwhile, Ustaz Fadhul Maulana Husin, S.Pd, the Fiqh teacher, stated that he uses tutorial videos on the correct procedures for wudu or prayer, followed by direct practice and evaluation through online quizzes. This strategy reflects a blended learning approach, in which theory, practice, and assessment are integrated with the support of digital technology.

As for Arif Finandia, the Aqidah Akhlak teacher, he mentioned that he frequently plays short Islamic films or motivational videos about values such as honesty and compassion, which are then used as material for reflection with students. This demonstrates that ICT is not only used as a visual aid but also as a medium for internalizing moral and spiritual values in PAI learning.

These findings indicate that teachers have been able to utilize ICT as a pedagogical tool that supports the contextual teaching and learning (CTL) approach, namely by connecting learning materials with the real-life context of students. Nevertheless, the implementation of ICT in the madrasah still faces several challenges, particularly related to limited facilities such as the insufficient

number of projectors, unstable internet connectivity, and varying levels of teachers' technical skills. These factors affect the consistency of ICT usage across teachers and subjects.

Overall, the ability to implement ICT media at MAS Nurul Ulum has reached an applicative stage, in which teachers not only understand and design media but are also able to apply it contextually in the classroom. This aligns with Munir's view that ICT implementation in learning should lead to the creation of interactive, collaborative, and student-centered learning environments. In addition, institutional support from the madrasah such as the provision of a computer laboratory, Wi-Fi access, and routine training serves as an important reinforcement for the success of ICT integration.

To enhance the effectiveness of ICT application, a more systematic policy for managing learning media is needed, including scheduling the use of multimedia equipment between classes, improving internet network capacity, and providing practical training focused on the use of online learning platforms. With sustained support, teachers' ability to implement ICT is expected to develop more optimally and positively contribute to improving the quality of PAI instruction at MAS Nurul Ulum.

3.3 Barriers and Solutions for Islamic Education (PAI) Teachers in Implementing ICT-Based Learning Media at MAS Nurul Ulum

The implementation of ICT-based learning media in the Islamic Education (PAI) subject at MAS Nurul Ulum faces various technical, pedagogical, and structural challenges. These obstacles are not only related to the availability of facilities but also to teacher readiness and institutional support. Nevertheless, despite these limitations, the teachers have demonstrated adaptive and solution-oriented efforts to ensure that learning remains effective and meaningful.

The first and most dominant challenge is the limited availability of technological facilities such as projectors, speakers, laptops, and internet connectivity. Based on an interview with Yurdha Fitri, the Qur'an Hadith teacher, learning activities are often disrupted due to equipment not being available in every classroom or due to unstable internet connections. "Sometimes the PowerPoint and videos are ready, but the projector is being used by another class. The internet also often disconnects, causing delays in learning," she explained. As a solution, she prepares videos and materials in offline formats so they can be used without internet access. She also utilizes her personal laptop and portable speakers to support the learning process.

The second challenge relates to the limited time and technical skills of teachers in designing ICT-based learning media. Ustaz Fadhul Maulana Husin, S.Pd., the Fiqh teacher, stated that creating digital media such as interactive PowerPoints or online quizzes requires considerable time, while teaching schedules and administrative duties are already very demanding. To address this, he collaborates with other teachers in developing media and uses tutorial videos on worship from reliable sources to remain efficient without reducing the quality of instruction. He also suggested that the madrasah hold regular ICT training to enhance teachers' abilities in creating creative and effective digital learning media.

The third challenge arises from the students' side, as some learners are not yet accustomed to using digital devices in the learning process. Arif Finandia, the Aqidah Akhlak teacher, explained that some students experience difficulties when required to access materials online. To respond to this, he combines ICT-based media with conventional methods such as direct discussions and oral explanations. In this way, learning does not rely entirely on technology but still emphasizes the understanding of Islamic values and morals. This strategy aligns with the principles of blended learning, which integrates the strengths of technology with face-to-face interaction to achieve balance between the cognitive and affective aspects of learning.

Meanwhile, based on an interview with Muhammad Nur, the Islamic Cultural History (SKI) teacher, it was found that technical obstacles also occur in the use of multimedia devices. He explained that damaged projectors and the limited availability of multimedia rooms often hinder history lessons that rely on videos and digital maps. As a solution, he uses a large-screen TV in the multimedia room on a rotational basis and creates simple instructional videos using Canva and CapCut. This approach reflects the teacher's creativity in utilizing available resources to create contextual and engaging learning experiences for students.

From an institutional perspective, the Head of the Madrasah, Ustaz Muhammad Reza, S.Pd.I, acknowledged that the main challenges in implementing ICT at MAS Nurul Ulum lie in the limited facilities and the uneven technological competencies among teachers. The madrasah has responded by allocating funds for additional projectors, improving Wi-Fi networks, and encouraging teachers to participate in ICT training organized by the Ministry of Religious Affairs and other Islamic educational institutions. Furthermore, the madrasah has established a community of practice among teachers, where those who are proficient in ICT mentor their colleagues. This approach not only enhances technical skills but also strengthens professional collaboration within the institution.

The madrasah has also adopted strategic measures by strengthening digital infrastructure and providing continuous training. These efforts align with the school-based ICT development approach, in which technological advancement is carried out gradually and adapted to the human resource capacity of the educational institution. Thus, the identified obstacles and solutions indicate that although PAI teachers at MAS Nurul Ulum still face challenges in terms of facilities and technical competencies, they have demonstrated strong professional commitment and pedagogical adaptability. The integration of ICT in learning is not merely a demand of modernization but an essential effort to achieve PAI instruction that is contextual, inspiring, and relevant to students' lives in the digital era.

4. Conclusions

The conclusions of this study are as follows:

1. The Competence of Islamic Education (PAI) Teachers in Implementing ICT-Based Learning Media at MAS Nurul Ulum The PAI teachers have demonstrated strong professional competence that aligns with the demands of modern, technology-based education. This is evident from their abilities in Mastery of Subject Matter, Setting Learning Objectives, Using Appropriate Teaching Methods and Media, Managing the Learning Process, Assessing Learning Outcomes, Engaging in Continuous Professional Development, and Integrating Religious Values into instruction.
2. The Ability of PAI Teachers to Implement ICT-Based Learning Media at MAS Nurul Ulum The teachers have shown significant progress in this area. They are capable of mastering, designing, developing, and implementing digital media effectively, resulting in positive impacts on the quality of learning and their overall professionalism.
3. Barriers Faced by PAI Teachers in Implementing ICT-Based Learning Media at MAS Nurul Ulum. PAI teachers encounter three main obstacles: limited technological facilities and infrastructure, varying levels of technical skills among teachers, and low student readiness for digital-based learning. These challenges affect the effectiveness of ICT-based PAI instruction. The solutions adopted include utilizing offline media, using personal devices, collaborating with fellow teachers in media development, and combining ICT methods with conventional approaches.

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