JURNAL INDO-ISLAMIKA
Vol. 14 No.2 – July-December 2024 (377-392)
P-ISNN : 2088-9445 || (Print)| e-ISSN 2723-1135 (Online)
Website: http://journal.uinjkt.ac.id/index.php/indo-islamika/index
DOI: https://doi.org/10.15408/jii.v14i2.43765

Sociological Dynamics of Indonesian Islamic Education: Mastery of Information and Communication Technology (ICT) Literacy by Teachers of SMPN 3 South Tangerang City

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Article History

Received: December 23, 2023
Revised: March 16, 2024
Accepted: June 29, 2024

Keywords :
Sociological Dynamics, Information Technology Literacy, PAI Teachers, Mastery of ICT.

ABSTRACT

The study highlights challenges faced by some Islamic Religious Education (PAI) teachers at SMPN 3 Tangerang Selatan in integrating ICT media into learning. Commonly used tools include YouTube, PowerPoint, Google Classroom, and Google. This research analyzes the ICT literacy proficiency of PAI teachers using a qualitative method with a phenomenological approach. Primary data were obtained from two PAI teachers, the vice-principal, and students, while secondary data included curriculum books, school archives, and related documents. Data collection involved non-participant observation and semi-structured interviews, with documents such as curriculum, syllabi, and lesson plans (RPP) analyzed. Following Tammy Moerer-Urdahl and John W. Creswell's phenomenological model, the steps included describing teachers' experiences (epoche), identifying significant statements, grouping them into themes, and synthesizing themes into comprehensive descriptions. The findings offer insights into ICT literacy levels and reveal the ongoing struggles teachers face in effectively incorporating technology into PAI learning processes.

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JURNAL INDO-ISLAMIKA
Published by Graduate School of UIN Syarif Hidayatullah Jakarta, Indonesia.
Please cite this article in APA Style as:
Reksiana., Ugli, A. R. R., Alsamairi, A. M. A., Nurbaini, F. & Wulansari, N. F. Elkoshli, E. M. S. (2024). Sociological Dynamics of Indonesian Islamic Education: Mastery of Information and Communication Technology (ICT) Literacy by Teachers of SMPN 3 South Tangerang City. *Jurnal Indo-Islamika*, 14(2), (377-392). https://doi.org/10.15408/jii.v14i2.43765

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1. INTRODUCTION

Currently, the digital era has brought significant impacts in various aspects of life, including the field of education. The development of information and communication technology (ICT) has revolutionized the way we acquire knowledge, interact, and learn. Education is no longer limited to traditional classrooms but has expanded to digital platforms such as e-learning, educational applications, and social media. Although technology offers many advantages, the digital era also presents several challenges that need to be addressed to ensure that education remains relevant, inclusive, and efficient. This article will review the main challenges faced by education in the digital era and the steps that can be taken to effectively overcome them (Defi Yufarika, 2023).

In the findings of Indah Husnul Khotimah, teachers need to increase their knowledge and improve their skills by undergoing training on IT related to blended learning as a teaching model in the Industry 4.0 era (Indah Husnul Khotimah, 2021).

Zulfa Hazizah and Henry Aditia Rigianti stated that there is an ICT gap between young and senior teacher groups. Their findings prove that both senior and junior teachers still struggle to utilize software (applications) as teaching media in the classroom, thus they need to enhance their IT literacy capacity (Zulfa Hazizah & Henry Aditia Rigianti, 2021).

Nancy Adam-Turner explained that in the current ICT era, teachers face several challenges, such as strengthening character development through exemplary behavior, and importantly, developing literacy in the classroom and integrating it into learning as it can improve student learning outcomes. According to both, what teachers need to do to improve is IT-based training. The reason is that teachers play an important role for the future generation as agents of change (Adam-Turner, 2017). Meanwhile, Adun Priyanto mentioned that the challenges faced by the education world in the ICT era are becoming increasingly complex, as teachers are required to adapt to technological advancements and integrate technology into learning (Priyanto, 2020). Duwi Retnaningsih in her findings stated that the major challenges for teachers are IT, professionalism, creativity in teaching, time mismatch with workload, and monotonous teacher attitudes (Retnaningsih, 2019). In the study by Noor Amirudin, it is mentioned that in the Industry 4.0 revolution era, teachers are required to adapt. Islamic religious education is now faced with several aspects of challenges, including renewal and innovation in the system, governance, curriculum, and data literacy and information technology skills (Amirudin, 2019).

Ni Komag Suni Astini emphasized that the need for information and communication technology literacy should be implemented in education as early as possible (Astini, 2019). Affandy Maulana (2020) stated that teachers not only need the ability to operate ICT devices and software but also require complex skills such as production skills, photovisual skills, hypertextuality skills, and socio-emotional skills. He encourages teachers to be tech-savvy, which is a basic necessity in the current ICT era. In the current ICT era, there are four aspects that teachers need to address. Two of them are the necessity for teachers to optimize the development of ICT literacy and integrate it into Islamic education subjects (Maulana, 2020).

Ismarti's findings also stated that teachers today need to improve their academic knowledge, language, and information technology skills (Agus Sulistyo & Ismarti, 2022). The biggest challenge in the Industry 4.0 revolution era is that teachers need to be literate in information technology as many teachers are still unable to instill critical thinking in students.

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Even Islamic education teachers need to think of appropriate efforts to face the behavioral changes of students in the 4.0 era, including being literate in ICT (Riadi, 2019).

The research conducted by Nancy Adam-Turner (2017) on "ICT Literacy Adoption with Academic Technology: Namely ICT Information Literacy to Enhance Student Learning Outcomes" explores the theory of learning attitudes of faculty in Arts & Sciences and librarians and their perceptions of ICT literacy, including interaction with academic technology (AT) programs and tools. This research uses a literature review to explore the rise of Information Literacy within the parameters of ICT Literacy (Adam-Turner, 2017).

From the research, there are several differences that can be seen in terms of findings, research objects, and research methods. Nancy Adam-Turner's research found the location and position of the different meanings of the terms Information Literacy, ICT Literacy, and ICT Information Literacy. Meanwhile, the direction of this research will focus on ICT Literacy of Islamic Education Teachers in learning. Additionally, in terms of research objects, Adam Turner's research focuses on the distinction of meanings of the three terms, while this research discusses more about ICT literacy using Social Science and Islamic approaches.

Moreover, the direction of this research will differ from the research conducted by Andreas Grillenberger, on "Developing a Theoretically Founded Data Literacy Competency Model," WiPSCE (2018) October 4–6 Potsdam, Germany, (2019). Andreas Grillenberger's research develops a theoretically founded data literacy competency model derived from content centers and process areas of empirical data literacy, and this research also maintains educational perspectives in schools. The difference between this research and Grillenberger's research is that this research focuses on general knowledge perspectives in the field (Grillenberger & Romeike, 2018).

Meanwhile, the research by Chinwe Anunobi1 and Obiora Kingsley Udem also addresses Information Literacy. According to them, ICT components are needed by teachers to recognize when and why information is needed, where to find it, how to evaluate, manage and apply it, synthesize, use and communicate it ethically and legally. Explicitly, these skills are components that include other components such as knowledge and attitudes (Anunobi & Udem, 2014). The difference in Udem's research with this research will be seen in the primary data sources and research types, where Udem's research uses survey research while this research uses qualitative research and will discuss the theory from an Islamic perspective.

Chantel Ridsdale has discussed the relationship between ICT and the skills and abilities that a teacher must possess. The skills mentioned consist of various levels of data literacy. This can be presented in a data literacy matrix, which is organized by five core aspects of the data literacy definition (data, collection, management, evaluation, application). This matrix is intended to form the basis of ongoing conversations about standards for assessing and evaluating data literacy levels, and to inform the creation of learning outcomes in data literacy education (Ridsdale et al., 2015). However, Ridsdale's research focuses too much on data literacy and does not deeply discuss the skills teachers need in teaching related to ICT. Meanwhile, this research will focus on how teachers master ICT in teaching Islamic education subjects in schools.

SMPN 3 Tangerang Selatan, as a school that excels in national student achievements, has achieved various national achievements such as poetry competitions, taekwondo, mathematics, and science (Sholeh, 2021). According to the principal and Islamic education teacher at SMPN 3 Tangerang Selatan, ICT literacy is implemented by teachers using various media and ICT

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applications in learning activities. Additionally, according to both, ICT literacy must be supported by complete facilities at the school (Rendra, 2021). The Islamic education teachers at SMPN 3 Tangerang Selatan stated that they have frequently used ICT media in Islamic education learning. Moreover, the Islamic education teachers at the school stated that the GLN policy requires teachers, especially Islamic education teachers, to adapt their teaching using ICT. However, according to the teachers, this policy must be supported by facilities, especially internet access. The teachers still feel burdened if they have to apply ICT in every aspect of learning if it is not supported by complete facilities at the school (Sholeh, 2021).

SMPN 3 Tangerang Selatan is a public school in South Tangerang that has been accredited with an "A" grade and uses the Merdeka Curriculum. It was also a pilot project school for the 2013 curriculum from 2018 to 2020. The school is located at Jl. Ir. H. Juanda No.01, Cempaka Putih, Ciputat Timur, South Tangerang, Banten 15412 (Sholeh, 2021). The vision of SMPN 3 South Tangerang City is "Excellence in achievement, exemplary in attitude and action, consistent in practicing religious teachings, creating a healthy and green environment." Its mission includes: 1. Realizing an improvement in the quality of graduates. 2. Increasing the number of graduates who enter public high schools or vocational schools. 3. Fostering self-confidence, a spirit of mutual cooperation, and love for the nation. 4. Enhancing work achievements accompanied by appropriate recognition, grounded in the spirit of exemplary behavior and sincerity. 5. Elevating the school's status to become a leading school. 6. Moving towards an environmentally conscious school. 7. Regularly conducting clean Fridays. 8. Encouraging all school members to care about waste. 9. Consistently behaving in a clean and healthy manner (Sholeh, 2021).

SMP Negeri 3 South Tangerang City has received the prestigious Adiwiyata Mandiri award, the highest environmental award in Indonesia for schools. This award was presented during the World Environment Day commemoration in Riau on July 22, 2016. The school has 53 educators, consisting of 13 with an S2 academic qualification, 38 with an S1 academic qualification, and 2 with a D3 academic qualification (Muhammad Yurisman Haidir, 2020). Given the reasons mentioned, the theme of this research becomes relevant to study and investigate.

2. METHODS

The research approach used in this study is qualitative, specifically phenomenology. Qualitative research aims to describe or provide an illustration of the object being studied through the data or samples collected as they are, without conducting analysis or making conclusions that apply universally (Sugiyono, 2016). The data sources in this research are taken from two sources: primary data (primary sources) and supporting data (secondary data). Primary data (primary sources) are data collected directly from the field in the form of documentation, observation, formal and informal interviews. These primary data are sourced from 2 Islamic Education (PAI) teachers, the Vice Principal, and students at SMPN. In addition to primary data, secondary data are also collected from Islamic Education curriculum books, school archives used as research subjects, school websites, teacher journals, syllabi, lesson plans (RPP), and so on.

Data collection techniques include observation, interview, and documentation methods. The researcher uses non-participant observation methods (Creswell, n.d.). The observation used is non-participant. This research uses semi-structured interviews (Sugiyono, 2016). Semi-structured interviews are used by the researcher based on the fact that, according to Salim and

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Haidir, they are most commonly used by researchers in the field of education (Farida Nugrahani, 2014)**.** Documentation studies in this research aim to search for, collect, and complete data related to the research problem, namely how religion teachers at outstanding schools in Cluster 1 South Tangerang apply ICT literacy and data literacy, as well as their educational and curriculum documents.

The documents and school archives examined in this research include curriculum documents and their components such as syllabi and lesson plans (RPP) used in the school. To complement this data, the author also examines written documents in the form of school profiles, photos of student activities at school, teacher journals, and school activity reports. In this research, the model of qualitative data analysis used is the phenomenology model by Tammy Moerer-Urdahl and John W. Creswell, with the following steps: first, the researcher describes the experiences of PAI teachers with the phenomenon (epoche) of ICT literacy. Second, the researcher identifies significant statements in the database from PAI teacher informants. Third, the researcher groups the information statements into units of meaning and themes. Fourth, the researcher synthesizes these themes into a description of individual experiences (textual and structural descriptions), and then compiles a combined description of the meaning and essence of these experiences. Fifth, the researcher constructs an overall explanation of the meaning and essence (essence) of the application of ICT literacy by PAI teachers in learning (Moerer-Urdahl & Creswell, 2004).

3. RESULTS AND DISCUSSION

The development of Information and Communication Technology (ICT) has brought about many changes, including in the field of education, giving rise to the concept of e-learning. With e-learning, the teaching and learning process becomes more effective and efficient. ICT is also highly applicable in Madrasahs, creating the concept of e-Madrasah. E-Madrasah offers benefits for students, teachers, and Madrasah managers with flexible educational programs, Islamic outreach, and learning materials that can be made more engaging and memorable. The integration of ICT in school education can enhance the quality of education and facilitate outreach. The impact of ICT integration in education is the acceleration of computer literacy among the Indonesian population (Nuryana, 2019).

The use of Information and Communication Technology (ICT) as a learning medium is now a necessity for teachers in the 4.0 era. Although designing ICT-based learning media requires specific skills for teachers, this does not mean that such media should be avoided and abandoned. The massive amount of information in the world of education, supported by ICT, allows teachers, students, and the community to produce and consume information. Therefore, mastery of ICT literacy is needed to filter the need for appropriate and healthy information and education. With the emergence of new technology, the way information is sought will be influenced. Mastery of ICT literacy is required for teachers and students, and the school environment so that the school community has a critical attitude towards information (Kholid, 2020).

Currently, teachers have a positive attitude towards new technology. Teachers seem to find ICT more useful and have greater self-confidence. This indicates that teachers are proactive in the current challenges where ICT plays a role in the education system. Teachers' attitudes should always be balanced with the appropriate attitudes needed to face the ever-evolving technology, including the current belief that ICT is very important in learning (Anam & Septiliana, 2023).

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Meanwhile, according to Nuryani and Handayani, to face the challenges of education in the 4.0 era, every teacher needs ICT skills and abilities. Some of the mastery needed in this era includes the ability to use and utilize ICT in learning (Nuryani & Handayani, 2020). Manual learning is often considered less appropriate and monotonous, especially for Islamic Education (PAI) materials. Currently, PAI lessons through ICT literacy need serious attention to be implemented by students, such as the scope of materials, volume of delivery, and learning strategies. With this strategy, PAI learning can be delivered in a more engaging, enjoyable, effective, and efficient manner. Some benefits and advantages of ICT learning include improving learning achievements, increasing learning motivation, enhancing learning quality, fostering innovation and creativity in learning, making it easier for teachers to deliver lesson materials, facilitating students in exploring learning resources, and making learning more effective and efficient (Lisyawati et al., 2023).

UNESCO also provides information about the importance and implications of computer literacy for economic and social development, which has been recognized by policymakers at the international and national levels. Information literacy needs to be considered not only in relation to education but also in the broader context of work, such as in the fields of society, civil society, health, and welfare. Informant S.F. at SMPN 3 South Tangerang City also stated that, in his opinion, PAI teachers basically already have ICT/ICT literacy but are still at a beginner level or limited to simple ICT media. Here is an excerpt from the interview with informant S.F.:

> *"It seems that they already have ICT/ICT literacy, but it needs to be constantly honed and used. Because if you look, many teachers here use ICT in learning, but not every day. Here, if operating a laptop is possible, PPT is possible, in focus is possible like LMS google classroom is possible, but if it's advanced media like programming, the teachers here can't do it yet." (S.F, 2021)*

Informant R.A. at SMPN 3 South Tangerang City also stated that he already has ICT/ICT literacy in learning in the ICT era. He believes this is because he has often attended training sessions and even frequently represented the regional government from public schools. Here is an excerpt from the interview with informant R.A. (2021):

> *"I already have it, because I recently represented the Tangsel province to attend the learning house training. Not all teachers, I was fortunate to be chosen to represent Tangsel. Securing data or files on the laptop is possible. For example, if I use apple, I use safari, google, opera. I have often received training, and even this Friday, I will represent South Tangerang for interactive learning training in collaboration with the Ministry of Education and Culture with SEAMOLEC."*

Informant R.A. also added that he has the ability to operate TIK-based media such as LMS, YouTube, and others, but not yet at the level of creating advanced teaching content. Here is the information from the interview with informant R.A. (2021):

> *"I also often use ICT in learning, often using google classroom applications that can be integrated into learning. The applications are like YouTube, google classroom, and others."*

Meanwhile, informant A. at SMPN 3 South Tangerang City explained that he is not yet capable of ICT/ICT literacy in learning because he rarely uses it. Here is an excerpt from the interview with informant A.:

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"I myself am not proficient in ICT, so it's difficult, there are many obstacles. If it's about ICT, maybe it's a bit lacking, but if it's about being a teacher, I have already been certified." (A, 2021)

Informant S.F. at SMPN 3 South Tangerang City explained that the aspects that need to be developed in PAI teachers' mastery of learning include media and applications, as well as the development of TIK-based teaching media and materials in PAI learning. Here is an excerpt from the interview with informant S.F. (S.F, 2021):

"The ability of teachers to manage TIK-based learning must be fully understood by the teacher with all TIK learning media. Besides that, in making TIK-based teaching media and materials, for example, video content, interactive media, or like now using Canva and many others."

This includes fulfilling the elements of ICT mastery mentioned by Anusca Ferrari. The content creation referred to by Ferrari includes creating content in various formats, including multimedia, editing and enhancing created content or creating new ones, to express creatively through ICT and technology. Additionally, in content creation, teachers must be able to integrate and elaborate, which includes modifying, perfecting, and combining existing resources to create something new, original, and relevant to knowledge (Ferrari, 2013).

Furthermore, in content creation, it also includes understanding how copyright and licenses apply to information and content. Including programming aspects: applying settings, modifying programs, application programs, software, devices, and understanding programming principles to understand what is behind a program (Suradika et al., 2020). If we look at the aspects of content and teaching material creation mentioned by Ferrari, it is very complex because PAI teachers must master everything in content creation, including mastering various multimedia formats, editing and enhancing created content or creating new ones, understanding copyright, and so on.

Informant R.A. at SMPN 3 South Tangerang City also explained the aspects that still need to be developed in ICT/ICT literacy mastery of PAI teachers. According to him, the aspects that still need to be developed are applications, software, and PAI teachers are still at the user level, not yet at the creator level like TIK teaching materials. Here is an excerpt from the interview with informant R.A. (R.A, 2021):

"The most important thing for me is language, for communication. If it's about managing ICT, there are many, like I sometimes use various video editing applications and other applications, so I want to improve again, I will attend training tomorrow. So, the point is I want to be able to create and use various applications in learning. If it's like animation, I can't do it yet. That seems to require intensive and expensive training."

Informant A. at SMPN 3 South Tangerang City also explained that the ICT/ICT literacy mastery that still needs to be developed by PAI teachers includes media, publication, and content creation. Here is an excerpt from the interview with informant A.

"In ICT in learning, I am not yet very proficient, to be able to apply and have ICT skills, I still need to learn a lot. I honestly use ICT in class sometimes, I have to use a laptop first, and there are many preparations."

Skantz clearly states that the ICT literacy that teachers must possess includes a set of general and specific technological skills in using ICT devices. The general skills mentioned refer to both hardware and software to manage various ICT resources, including general operational skills, such as turning on a computer or activating or deactivating an iPad. Specific basic skills

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include handling ICT learning platforms and teaching aids that are integral to the curriculum (Skantz-åberg et al., 2022).

Furthermore, Skantz elaborates that these basic skills must enable teachers to explore, acquire, store, produce, present, and exchange information. In terms of production, teachers must be able to create and edit media and teaching materials in learning. According to him, this is something that teachers should do to achieve learning objectives (Skantz-åberg et al., 2022).

Røkenes and Krumsvik explain that the ICT literacy that teachers must possess includes skills, knowledge, creativity, and attitudes to use ICT media for learning and to provide knowledge to students and the community. These skills involve using PowerPoint, the internet, creating web pages using HTML code, and using data recording tools. However, according to them, these skills need to involve both teachers and students to gain direct experience using technology in the classroom (Røkenes & Krumsvik, 2014).

The ICT literacy skills that teachers must master, according to Andi Asari et al., include accessing, selecting, understanding, analyzing, verifying, evaluating, distributing, producing, participating, and collaborating. In this regard, they believe that teachers must be able to fulfill all these aspects to be considered ICT literate, including the ability to produce ICT materials, media, and teaching aids for learning purposes (Andi Asari et al, 2023). Media and teaching aids that can be used in developing ICT literacy include the use of e-modules to facilitate the demands of the era of massive information technology development, which requires ICT skills or literacy from teachers. Additionally, the massive development of information technology today is like a double-edged sword with positive and negative effects on society, so ICT literacy learning cannot be avoided, as explained (Lastri, 2023).

In Abdul Latif's findings, there are five elements in ICT literacy that teachers must master, in addition to being able to access information by finding and sharing materials and understanding information and ideas. An equally important element is creating content in various forms, utilizing language, images, sound, and new ICT tools and technologies (Abdul Latip, 2020). This element is the third of the five elements mentioned by Hobbs for teachers to have ICT literacy in learning. According to Hobbs, this element is rarely met by teachers due to their inability in media and technology (Hobbs, 2010).

Findings from (Ningsih et al., 2021), state that the ability to create ICT-based media and teaching materials is indeed within the realm of four ICT masteries. These four masteries are basic skills that teachers must possess: 1) Information mastery, including students' ability to search, process, evaluate, and use information accountably; 2) Communication mastery, including students' skills in using social media features to discuss with others; 3) Content creation mastery, including teachers' ability to create innovative works; 4) Security mastery, useful for protecting all data owned.

Pratama and Haryanto mention that teachers must be able to use technology optimally and create harmonious and dynamic creative learning. In this regard, according to them, teachers must be able to create teaching content that is integrated into educational technology applications, becoming one of the main elements faced by PAI teachers (Haryanto, 2017).

Furthermore, according to Drajat Nugroho, the stage of developing content material and multimedia elements must be prepared. The content material formed includes script dialogues, and the presentation of material is interview-style visual information. This transfer adapts to the chosen game nuances. The content material created follows the sequence of the material

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discussed. Multimedia elements that must be included are images, text, and audio as packaging, accompaniment, and explanation for material delivery in the media (Drajat Nugroho, 2016).

Meanwhile, according to Amaly et al., applying teaching content to educational technology requires PAI teachers to understand appropriate teaching materials that students can comprehend, including the ability to choose enjoyable teaching content. Of course, the learning process needs to be carried out correctly and according to the procedures established in the educational curriculum (Abdul Mun'im Amaly et al., 2021).

Teaching materials that can be developed in ICT literacy include ICT books on Islamic Religious Education and Morals, as well as learning videos from YouTube. The use of ICT books can be provided by the school or created by the teacher as a student learning guide. While waiting for teacher ICT literacy, several applications are often used, including WhatsApp groups, Google Meet, Google Classroom, and Google Forms. According to Firmansyah, these applications have their respective functions to support online PAI learning (Firmansyah, 2021).

Amanullah states that using ICT teaching materials like flipbooks is an alternative solution to support student learning in the era of the industrial revolution 4.0. Additionally, he believes that by creating ICT teaching materials, teachers can make learning very varied and attractive in terms of visual and audiovisual presentation. Thus, the use of ICT teaching media becomes an appropriate solution to make the learning atmosphere in the classroom more engaging, communicative, interactive, and supportive of students' understanding of the material presented by the teacher (Muhammad Abror Amanullah, 2019). Besides presenting material in unique and attractive image variations, according to Indariani et al., ICT modules or teaching materials can also present introductory material in video form. This video presentation aims to simulate so that students do not have difficulty understanding the material to be discussed and serves as a review to introduce the next material (Supardi Ritonga, 2024).

Setiadi et al. state that ICT-based teaching materials can take the form of PDFs, infographics, and videos. PDF teaching materials must include the subject identity, introduction, material description, material summary, and quizzes/assignments (included in the PDF). Infographic teaching materials include script material, infographic script (graphic elements, colors, fonts, images, composition, and proportions). Learning video teaching materials include script material, storyboard (scenes, visuals, introductory music, dialogue, duration), and must involve filming, editing, rendering, and uploading materials or teaching aids (Pidi Mohamad Setiadi dan Dwi Alia, 2022).

Chairunisa and Zamhari mention that ICT-based teaching materials in the form of e-modules are one of the most used teaching materials in the learning process. Additionally, e-modules organize material, learning activities, and evaluations to measure the level of success or the material provided through the module. E-module teaching materials allow teachers, including PAI teachers, to compile more varied and attractive learning resources. E-module teaching materials can also include information in the form of text and images, and even interactive materials and examples in the form of videos that can be created independently or from YouTube content (Chairunisa & Zamhari, 2022).

Meanwhile (Farhana et al., 2021) mention that types of ICT-based teaching materials include audio and video, text, models, overhead projectors (OHP), PowerPoint slides, and interactive multimedia. In teaching using ICT-based teaching materials, there are five important components for teachers and students, such as learning instructions, mastery to be achieved,

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supporting information, exercises, and evaluations. Additionally, teaching materials can also be in the form of blog content, podcasts, photo and video sharing like Flickr and YouTube. Blog content functions to see problems from different perspectives in learning. Additionally, blog content allows teachers to know what students think, concretely and persistently. Blogging, according to them, is one way to create and publish content online. Meanwhile, podcasts, usually in the form of audio recordings of an event, are also a means to project and share content with others so they can listen at a time and place (usually mobile) of their choice (Wheeler, 2012).

Other forms of content sharing such as images and videos can be easily achieved using photo and video sharing services like Flickr and YouTube. Some of these types can be slide presentations through Slideshare, and the like. However, for any of the above formats, user-created content to be fully utilized first needs organization and labeling, because without these two aspects, content, according to them, cannot be achieved (Qonita Izza, 2024).

The ability of teachers to use media and create such teaching materials can be seen from how PAI teachers can utilize software and hardware devices. Therefore, PAI teachers must be able to use software and hardware in their teaching to create ICT-based teaching materials (Chairunisa & Zamhari, 2022).

Amaly et al. state that PAI teachers in their mastery need to develop and create new integrated learning concepts optimally with technology. If teachers can optimize technology in learning, a series of benefits will be obtained, such as: 1) for students, increasing attention, concentration, motivation, and independence, 2) for teachers, reducing the time for delivering material, making it enjoyable, designing more attractive materials, and encouraging teachers to enhance their knowledge and skills regarding computers or other technologies (Abdul Mun'im Amaly et al., 2021).

Mastery of ICT literacy is understood in various forms, at least according to Wheeler, there are nine skills that someone is said to master ICT: able to manage and share content, manage identity, manage privacy, create ICT content, reuse content, social networking, select and filter content, transliteration, and self-broadcasting (Wheeler, 2012). Asari explains that the mastery of basic and advanced ICT literacy is summarized in the following ten stages: accessing, selecting, understanding, analyzing, verifying, evaluating, distributing, producing, participating, and collaborating (Asari et al., 2019). Rullie Nasrullah et al. state that indicators of teachers who have mastered ICT literacy include the ability to process various information, understand messages, and communicate effectively with others in various forms. In this case, the forms include creating, collaborating, communicating, and working according to ethical rules, and understanding when and how technology should be used effectively to achieve goals (Nasrullah et al., 2017).

There are three levels in ICT literacy if someone is capable of creating content or teaching materials in learning, namely the first level, knowing various software tools and packages to produce content or material, understanding how to use some simple tools and understanding how to modify content information. Second level: finding out about and using various ways that can be produced by ICT, knowing multimedia equipment, understanding licensing procedures with the content produced, finding out about tools that support creating new programs or applications (Rahman et al., 2021).

While at the third level: choosing ways to produce content that is not so familiar and using this in a context that suits the needs and objectives of learning, finding out about and using ways to edit and improve content/material, finding out about and using expert ways to combine existing

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content such as mash-ups, knowing various types of licenses, learning how to code and program (Ferrari, 2013).

In mastering ICT literacy, there are several main indicators that someone can be said to have mastered ICT literacy, namely: first, the use of media (technical skills). This relates to the capacity or ability of teachers to access information and use media. Second, critical understanding (cognitive mastery). This aspect is related to understanding and evaluating the content and media information. Third, communicative ability (social ability, participation, creative ability). This aspect is related to the ability to create ICT content or teaching materials, social relationships, and community participation (Marina et al., 2023). These three criteria indicate that a teacher must be able to create content or teaching materials and play an active role in the community in changing the social order for the better.

Not only that, Celot and Tornero in the European Commission Directorate General Information Society and Media Literacy Unit detail the levels of ICT literacy mastery into three levels: Basic, Medium, and Advanced. At the Basic level, someone's mastery is related to a set of abilities that allow the use of basic media, the use of media that is still limited, still at the stage of knowing its basic functions, using it for specific purposes and to determine tools (Celot & Pérez Tornero, 2009). While at the Medium level, an individual's communicative ability through media is still limited but fluent in media use. In this level, the individual knows its functions and can operate it, more complexly. Additionally, the individual knows how to obtain and evaluate the information they need, also evaluating information (Dhahrani et al., 2024).

On the Advanced level, the ability is seen from being very active in media use, being aware of and interested in the laws that affect its use. The user has in-depth knowledge of techniques and language and can analyze and change conditions that affect their communicative relationships and message creation. Socially, the user is able to activate group cooperation, which allows them to solve problems (Hilmi, Siti Fatimah Zuhra, 2024). At this level, if we look at teachers, they are not just able to use media deeply, but more than that, they are capable of creating messages or ICT-based teaching materials.

Informant R.A. at SMPN 3 South Tangerang City also added another challenge felt by PAI teachers, which is the inability to manage and maximize the use of ICT-based media, such as editing and managing programs on the computer. Here is an excerpt from the interview with informant (R.A, 2021):

> *"But if it's about programming, not yet. I can't do it if it involves tweaking programs, just as a user. If it's about saving data, creating teaching materials from PPT, videos on YouTube, yes, I can. Especially if it's about saving data in Google Drive or in regular folders, but if it's about creating it myself, not yet. If it's about what iCloud is, I understand it too, but I rarely use it because it's usually paid if it exceeds the standard."*

Thus, referring to the analysis above, it is indeed true that the ability that PAI teachers must develop is ICT-based skills or competencies. This ability should actually be mastered and developed by PAI teachers because it falls within the realm of teachers' ICT literacy mastery. Referring to the opinions of several figures mentioned above, such as Marina et al., Anusca Ferrari, Skantz, Røkenes and Krumsvik, Andi Asari et al., and Hobbs, Ningsih, Rullie Nasrullah et al., Celot and Pérez Tornero, a person can be said to have mastered ICT literacy if they have a series of abilities such as accessing, selecting, understanding, analyzing, verifying, evaluating,

distributing, producing, participating, and collaborating, and even creating content in various forms, utilizing language, images, sound, and new ICT tools and technologies.

CONCLUSION

From the analysis above, it is evident that the mastery of Information and Communication Technology (ICT) literacy by PAI teachers at SMPN 3 South Tangerang City has been attempted by using several applications such as laptops, infocus projectors, PPT materials, and others, which are integrated into the learning process. However, the findings of this research highlight that there are varying abilities among PAI teachers at SMPN 3 South Tangerang City, as some teachers stated that they are already capable of integrating ICT media into PAI learning, while others still feel awkward or experience difficulties in doing so. Another finding is that the applications frequently used by PAI teachers at SMPN 3 South Tangerang City include YouTube videos, PPT, Google Classroom, Google, and others. In terms of creating teaching materials, PAI teachers at SMPN 3 South Tangerang City produce teaching materials in the form of YouTube videos and materials made from PPT, but the creation of these teaching materials is still at the stage of making materials in PPT, so the teaching video materials are still based on simple content.

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