Digital Readiness in Islamic Education: A Case Study of Pesantren Assalafiyyah Mlangi Sleman, Indonesia

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Article Info	Abstract
	Purpose – The study's primary objective was to assess the level of preparedness among students at Pondok Pesantren Assalafiyyah Mlangi, Komplek Kitab Putra Madrasi, in navigating the challenges of the digital era, with a specific focus on their adaptability within the sphere of Islamic education. **Design/methods**– A quantitative research methodology was adopted, centering on a survey conducted among 302 active male students at the institution. The sample size, which amounted to 75 students, was calculated using the Solvin formula. A structured questionnaire, designed to evaluate various aspects of digital literacy and adaptability, was employed for data collection, with the analysis executed through Likert scale scoring. **Findings** – The study unveiled a substantial level of digital literacy among the students. It was found that the majority of students had access to digital devices and were capable of discerning between positive and negative content on the internet. Notably, 84% of the survey responses were classified as 'Highly Suitable' in terms of digital era readiness, based on Arikunto's evaluative scale. **Research implications/limitations** – These findings indicate an imperative need to deepen the integration of digital literacy and ethical considerations within Islamic educational curricula. However, the research's confinement to a single educational institution poses limitations on the broader applicability and generalizability of its conclusions. **Practical implications** – The results emphasize the importance of incorporating comprehensive digital education in Islamic educational settings, preparing students not only for technological proficiency but also for responsible and ethical digital engagement. **Originality/value** – This study contributes valuable insights into the current state of digital readiness among students in an Islamic educational context. Its focus on the intersection of traditional Islamic education with contemporary digital challenges presents a unique perspective in educational research.

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Introduction

The rapid acceleration of information technology within society signifies an era where globalization's influence is increasingly pervasive. This advancement has brought forth innovative changes in various sectors, including Islamic education, highlighting the necessity to understand and adapt to the digital age's challenges (Budiman & Isnaeni, 2019; Karomani et al., 2021) The integration of digital technology in educational contexts has created a paradigm shift, particularly in Islamic boarding schools, known as Pesantren, which are traditionally anchored in disseminating Islamic knowledge and preserving religious traditions.

Previous research has demonstrated the profound impact of digital technology on educational practices. For instance, Baik (2023) highlighted the need for verification methods in dental education due to inconsistencies brought about by digital evaluation. Similarly, Song et al. (2022) found a correlation between the overuse of digital teaching technologies and academic burnout. In contrast, Silalahi et al. (2023)observed an enhancement in creativity through digital learning strategies in Christian education, underscoring the diverse effects of digitalization on learning environments.

The role of digital technology in education has been further emphasized by the experiences of students and educators alike Ho et al. (2023) pointed out the challenges of communication in online classrooms, while Naidoo (2020) stressed the importance of collaborative practice on digital platforms. These studies reflect the evolving nature of education in the digital era, where traditional methods are continually being reassessed and redefined.

However, this transition to digitalized learning is not without its challenges. The study by Sari et al. (2020) revealed a concerning trend of low digital ethics among students in Surakarta City, Indonesia. This finding underscores the need for enhanced digital literacy and ethical considerations within educational frameworks. Moreover, Chodak et al. (2023) and Abramovich (2020) highlighted the varying attitudes towards remote education and the integration of technological tools in learning, respectively, further emphasizing the multifaceted impact of digitalization in education.

Recognizing these challenges, our study aims to address the gaps and limitations observed in previous research. We focus on the readiness of students in Pesantren Assalafiyah Mlangi, an Islamic boarding school, in the face of rapid digitalization. This research is particularly significant as it evaluates how these students, born into the digital era, adapt to and integrate technology in their pursuit of Islamic education. Our study seeks to contribute to the understanding of how traditional religious education can coexist and evolve with technological advancements, thus preparing students for a future where digital competency is paramount.

Methods

This study employed a quantitative research design, focusing on a survey-based approach to explore the phenomenon of interest. Conducted at Pesantren Assalafiyyah Mlangi, Kitab Madrasi complex, the research targeted active male students with a total population of 302. The sample size, determined through the Solvin formula with a 10% error tolerance, was established at 75 participants to ensure representativeness (Olarte et al., 2023). Data collection was facilitated through a structured questionnaire, designed and informed by similar educational research methodologies to ensure relevance to the study's objectives (Olarte et al., 2023). The questionnaire was meticulously crafted to capture a broad spectrum of responses pertaining to the students' adaptability and readiness in the face of digitalization challenges, with a particular focus on their integration of technology in Islamic education.
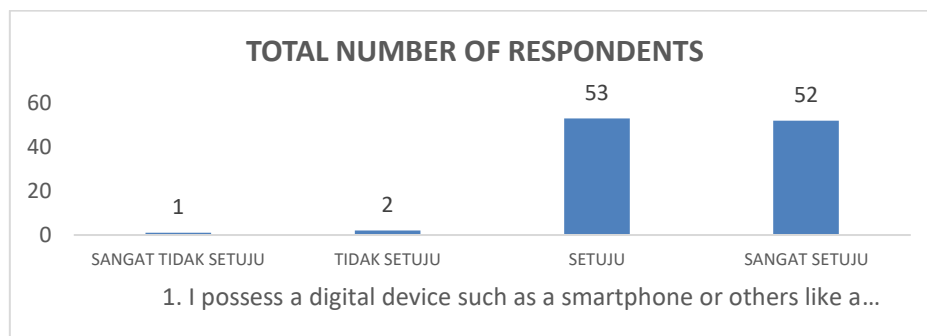
In the data analysis phase, responses were quantitatively assessed by assigning scores to each questionnaire item based on a pre-established rubric. These scores were then aggregated and compared against expected values in both numerical and percentage formats, employing descriptive and inferential statistical methods for a comprehensive analysis (Pallant, 2020). To enhance the study's reliability and validity, a pilot test of the questionnaire was conducted with a subset of the target population, ensuring clarity and appropriateness of the survey items (Muijs, 2010). The internal consistency of the questionnaire was evaluated using Cronbach's alpha to confirm the uniformity of the measurements (Tavakol & Dennick, 2011). Additionally, triangulation with existing literature on the impact of digitalization in Islamic educational settings was employed to validate the findings, ensuring that the results were robust, reliable, and contributed meaningfully to the existing body of knowledge

Results

Data collection in this study was conducted using a questionnaire formulated based on indicators developed by the researcher from expert theories. The researcher presented 9 statements to respondents through the constructed questionnaire. The data gathered from the respondents were processed using a Likert scale, where each response was assigned a score with four answer options: Strongly Agree (SA) scored 4, Agree (A) scored 3, Disagree (D) scored 2, and Strongly Disagree (SD) scored 1.

1. *Diagram of Total Responses to Survey Questionnaire Items*

Diagram 1. I Possess A Digital Device Such as A Smartphone or Others Like A Laptop/Computer

TOTAL NUMBER OF RESPONDENTS

SANGAT TIDAK SETUJU: 1, TIDAK SETUJU: 2, SETUJU: 53, SANGAT SETUJU: 52

1. I possess a digital device such as a smartphone or others like a…

From Diagram 1, it is observed that 1 respondent strongly disagreed, 2 disagreed, 53 agreed, and 52 strongly agreed, indicating that a total of 105 respondents possess digital devices such as smartphones, laptops, etc.

Diagram 2. I am knowledgeable in operating the digital device that I own

TOTAL NUMBER OF RESPONDENTS

SANGAT TIDAK SETUJU: 1, TIDAK SETUJU: 3, SETUJU: 65, SANGAT SETUJU: 39

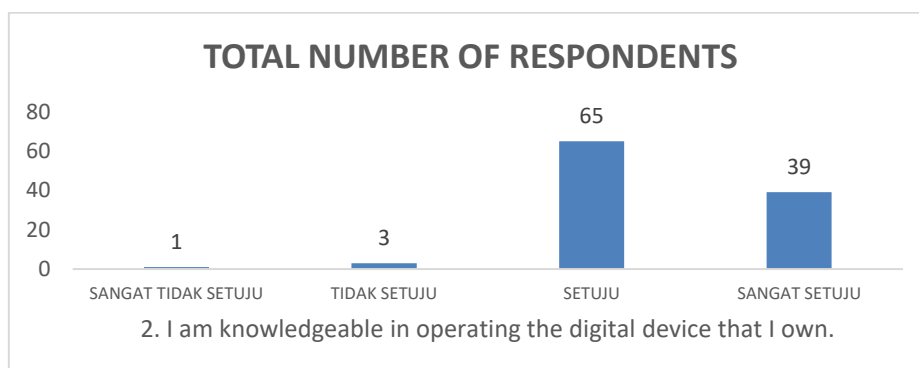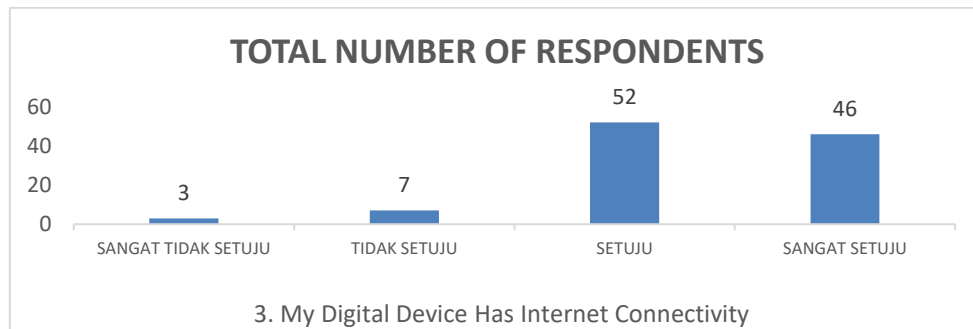2. I am knowledgeable in operating the digital device that I own.

Diagram 2 reveals that 1 respondent strongly disagreed, 3 disagreed, 65 agreed, and 39 strongly agreed, leading to the conclusion that 104 respondents are knowledgeable in operating their digital devices.

Diagram 3. My Digital Device Has Internet Connectivity

TOTAL NUMBER OF RESPONDENTS

	SANGAT TIDAK SETUJU	TIDAK SETUJU	SETUJU	SANGAT SETUJU
Value	3	7	52	46

3. My Digital Device Has Internet Connectivity

According to Diagram 3, 3 respondents strongly disagreed, 7 disagreed, 52 agreed, and 46 strongly agreed, thereby concluding that 98 respondents have internet connections on their devices.

Diagram 4. I am Able to Access the Internet Using Digital Devices l

TOTAL NUMBER OF RESPONDENTS

	SANGAT TIDAK SETUJU	TIDAK SETUJU	SETUJU	SANGAT SETUJU
Value	1	5	60	43

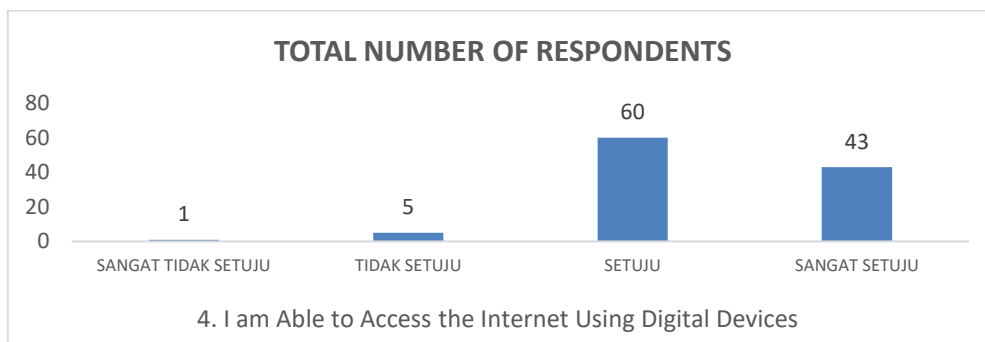4. I am Able to Access the Internet Using Digital Devices

Diagram 4 shows that no respondents strongly disagreed, 5 disagreed, 60 agreed, and 44 strongly agreed, implying that 103 students can access the internet using their digital devices.

Diagram 5. I Operate Digital Devices Daily When at Home or on Vacation

TOTAL NUMBER OF RESPONDENTS

	SANGAT TIDAK SETUJU	TIDAK SETUJU	SETUJU	SANGAT SETUJU
Value	1	11	53	43

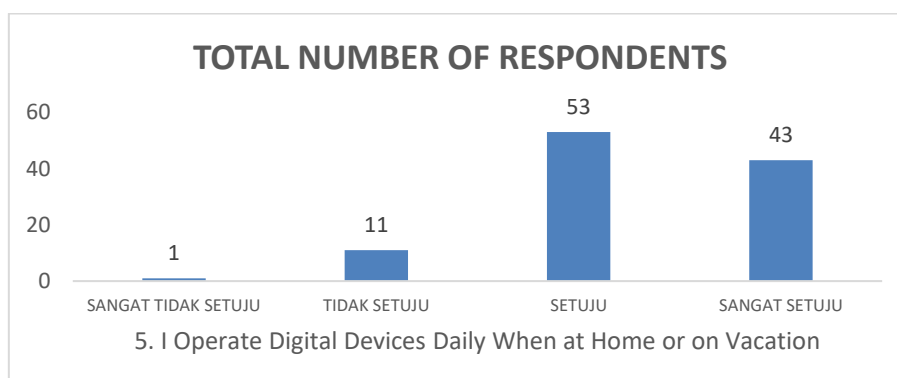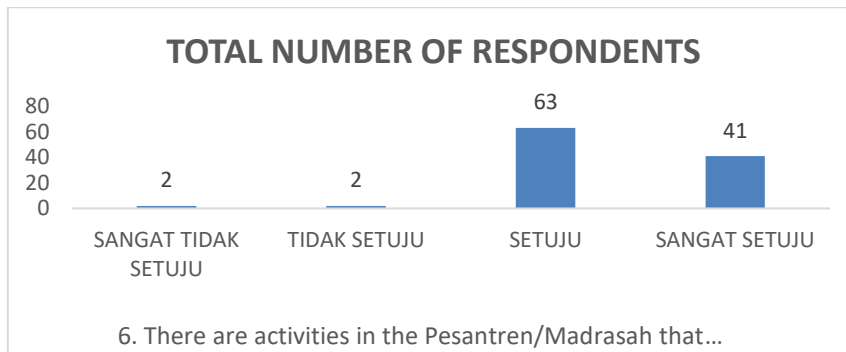5. I Operate Digital Devices Daily When at Home or on Vacation

Diagram 5 indicates that 1 respondent strongly disagreed, 11 disagreed, 53 agreed, and 43 strongly agreed, suggesting that 96 respondents operate their digital devices daily while at home or on vacation.

Diagram 6. There are activities in the Pesantren/Madrasah that involve digital devices

TOTAL NUMBER OF RESPONDENTS

80	
60	
40	
20	2 2 63 41
0	
	SANGAT TIDAK SETUJU TIDAK SETUJU SETUJU SANGAT SETUJU

6. There are activities in the Pesantren/Madrasah that…

From Diagram 6, it is seen that 2 respondents strongly disagreed and disagreed respectively, while 63 agreed, and 41 strongly agreed, concluding that there are 104 individuals who agree on the involvement of digital devices in Pesantren/Madrasah activities.

Diagram 7. I Can Utilize Digital Devices and the Internet to Assist in Learning Activities or Other Tasks

TOTAL NUMBER OF RESPONDENTS

60	
40	
20	0 2 49 57
0	
	SANGAT TIDAK SETUJU TIDAK SETUJU SETUJU SANGAT SETUJU

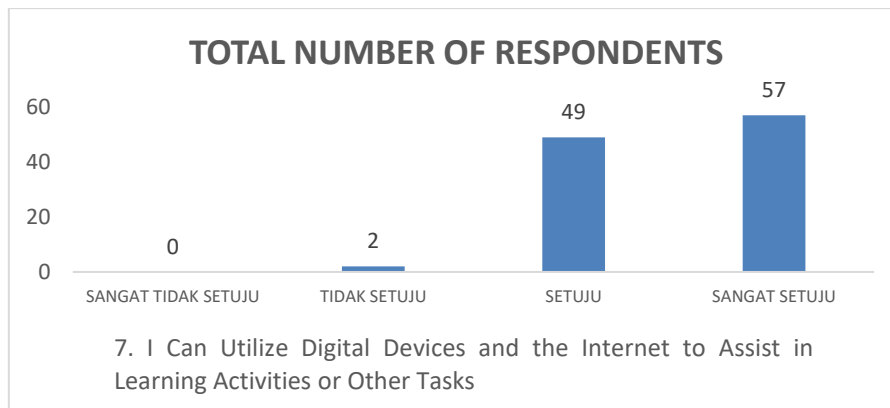7. I Can Utilize Digital Devices and the Internet to Assist in Learning Activities or Other Tasks

Diagram 7 shows that no respondents strongly disagreed, 2 disagreed, 49 agreed, and 57 strongly agreed, concluding that 106 students agree on using digital devices and the internet to aid their learning or other tasks.

Diagram 8. I Can Differentiate Between Positive and Negative Content on the Internet

TOTAL NUMBER OF RESPONDENTS

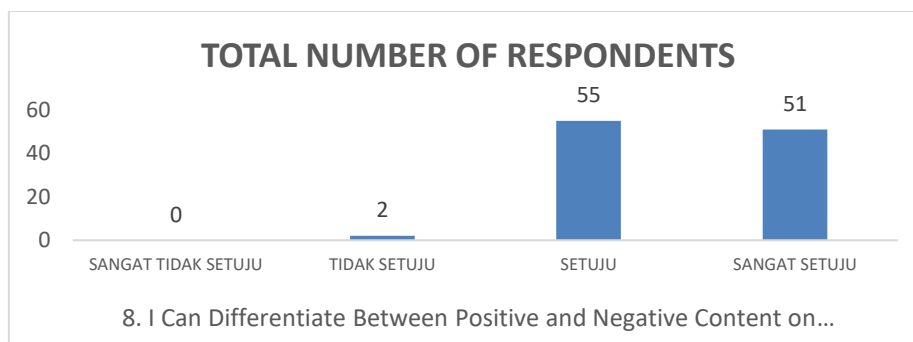8. I Can Differentiate Between Positive and Negative Content on…

Diagram 8 illustrates that no respondents strongly disagreed, 2 disagreed, 55 agreed, and 51 strongly agreed, leading to the conclusion that 106 students can differentiate between positive and negative internet content. Diagram 1.9 shows that no respondents strongly disagreed, 5 disagreed, 60 agreed, and 43 strongly agreed, indicating that 93 respondents prefer accessing positive/beneficial content over negative content.

Diagram 9. I More Frequently Access Positive/Beneficial Content Than Negative Content

TOTAL NUMBER OF RESPONDENTS

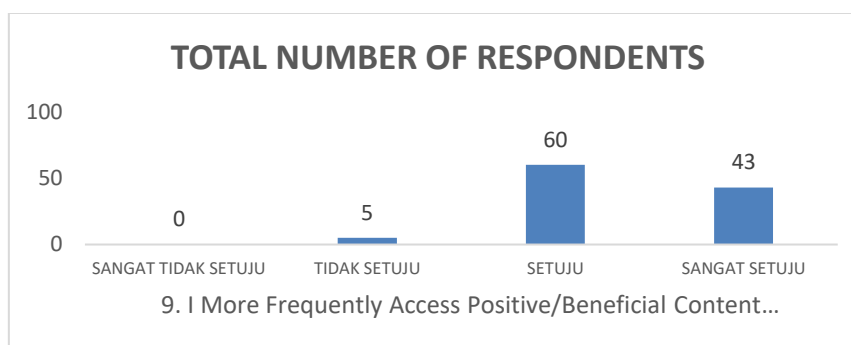9. I More Frequently Access Positive/Beneficial Content…

Diagram 9 shows that no respondents strongly disagreed, 5 disagreed, 60 agreed, and 43 strongly agreed, indicating that 93 respondents prefer accessing positive/beneficial content over negative content.

2. *Total Score and Percentage of Respondents' Answers to Questionnaire Items*

The total and percentage scores of respondents' answers to the questionnaire statements are outlined in the table 1.

Table 1. The Total and Percentage Scores of Respondents' Answers

No	Statement	Score			
		SA	A	D	SD
1	I own a digital device such as a smartphone or laptop/computer	52	53	2	1
2	I know how to operate the digital device I own	39	65	3	1
3	My digital device has an internet connection	56	42	7	3
4	I am able to access the internet using my digital device	43	60	5	
5	I operate my digital device every day when at home/on vacation	43	53	11	1
6	There are activities at the Pesantren/Madrasah that involve digital devices	41	63	2	2

7	**I can use digital devices and the internet to assist in learning activities or other tasks**	57	49	2	
8	**I can differentiate between positive and negative content on the internet**	51	55	2	
9	**I more often access positive/beneficial content rather than negative content**	43	60	5	
	TOTAL RESPONSES	425	500	39	8
	TOTAL SCORES	1700	1500	78	8
	Σ SCORES	3247			
	PERCENTAGE (%)	84			

The total score is the sum of the scores for each questionnaire statement, multiplied by the Likert scale weighting. The maximum score is the product of the maximum score on the Likert scale and the number of questions, i.e., 4 x 9 = 36. The expected total score is the product of the maximum score and the number of respondents, i.e., 36 x 108 = 3888. The sum of the questionnaire scores is the sum of the scores for each answer option (SA, A, D, SD) across all statements, totaling 1700 + 1500 + 78 + 8 = 3247. The percentage of the sum of the questionnaire scores is calculated as $\frac{\Sigma \text{Questionnaire Score}}{\text{Expected Score}}$ x100%, resulting in $\frac{3247}{3888}$ x100% = 84%.

The total questionnaire score from the respondent data is 3247 (84%) out of the expected 3888 (100%). According to Arikunto's Arikunto & Cepi Abdul Jabar (2009a) suitability table, this percentage score falls into the 'Highly Suitable' category, indicating that the male students of Pondok Pesantren Assalafiyyah Malngi, Komplek Kitab Madrasi, are categorized as Ready to Face the Digital Era. The scale presentation according to Arikunto's Arikunto & Cepi Abdul Jabar (2009a) total percentage score theory is as follows:

Discussion

The primary objective of this research was to assess the preparedness of students at Pesantren Assalafiyyah Mlangi in facing the challenges of digitalization, with a focus on their adaptation to information technology within the context of contemporary Islamic education. This study was contextualized within a broader discourse on the integration of digital technologies in educational settings, a topic that has garnered increasing attention in recent years (Baik, 2023; Song et al., 2022). The rapid evolution of digital technologies has transformed traditional educational methodologies, necessitating an evaluation of how these changes impact students in Islamic educational institutions.

The results of the survey conducted in this study indicated a high level of digital device ownership and operational knowledge among the students, with a significant majority having access to and ability to operate digital devices and connect to the internet. This finding is particularly relevant in the context of educational digitalization, where access to technology is a prerequisite for successful integration (Kovács Cerović et al., 2022; Meng et al., 2021). Furthermore, the majority of students reported their ability to differentiate between positive and negative content online, an essential skill in navigating the digital landscape (Seresirikachorn et al., 2022; Supiarza & Sarbeni, 2021).

Comparatively, these findings align with the observations made in previous studies regarding the digital competence of contemporary students (Das et al., 2019; Yuan et al., 2023). However, they also highlight a contrast in terms of the digital ethics profile observed in certain regions (Sari et al., 2020), suggesting a potential variability in digital literacy and ethics education across different educational settings. Furthermore, the findings support the notion that exposure to digital technologies does not necessarily lead to academic burnout, contradicting some previous studies (Song et al., 2022).

The high degree of digital engagement among the students of Pesantren Assalafiyyah Mlangi suggests a readiness to adapt to digitalized educational environments. This readiness is crucial, considering the increasing reliance on digital tools for educational purposes

(Laverie et al., 2020; Naidoo, 2020). The students' ability to discern between positive and negative online content also indicates a level of digital maturity necessary for navigating the complexities of the digital world (Arias-Pittman et al., 2023; Blakemore & Agllias, 2020).

However, the findings should be interpreted with caution, considering the specific context of the study and the potential variability in digital literacy across different educational settings. While the students at Pesantren Assalafiyyah Mlangi demonstrate a commendable level of digital readiness, it may not be reflective of the situation in other Islamic educational institutions, where access to digital technologies and the level of digital literacy might differ (Alcocer-Vázquez & Zapata-González, 2021; Andersen & Wellen, 2023).

Given the increasing significance of digital technologies in education, these findings have important implications for Islamic educational institutions. They suggest a need to further integrate digital literacy and ethics into the curriculum to ensure students are not only technologically proficient but also capable of using these tools responsibly and effectively in their educational pursuits (Gao, 2023; Tsou et al., 2022).

Overall, the study contributes to a growing body of knowledge on the integration of digital technologies in Islamic education, highlighting the readiness of students to embrace these changes. It underscores the importance of equipping students with the necessary skills to thrive in the digital era and calls for a nuanced approach in incorporating digital literacy into religious education, balancing traditional values with modern technological advancements.

Conclusion

This study aimed to evaluate the digital era preparedness of students at Pondok Pesantren Assalafiyyah Mlangi, Komplek Kitab Putra Madrasi, focusing on their adaptation to information technology in contemporary Islamic education. The findings, based on a structured questionnaire, revealed a significant level of digital literacy among the students, with a majority having access to and proficiency in operating digital devices, as well as the ability to discern between positive and negative online content, indicating a readiness to navigate the digital landscape with 84% suitability according to Arikunto's scale (Arikunto & Cepi Abdul Jabar, 2009b). These results have important implications for Islamic educational institutions, suggesting the need for further integration of digital literacy and ethics into the curriculum (Gao, 2023; Tsou et al., 2022). However, the study's limitation lies in its focus on a single institution, which may affect the generalizability of the findings. Future research should extend to multiple Islamic educational settings and consider longitudinal studies to provide a more comprehensive understanding of the impact of digitalization on Islamic education, encompassing traditional teaching methodologies and spiritual development.

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