

DEVELOPING AN ISLAMIC DIGITAL LITERACY FRAMEWORK FOR MUSLIM YOUTH: A NOMINAL GROUP TECHNIQUE APPROACH

Ramlan Mustapha^{1*}

Abu Bakar Jaafar²

Maziah Mahmud³

Wan Azmi Wan Ahmad⁴

Siti Norma Aisyah Malkan⁵

Jazimin Zakaria⁶

Asjad Mohamed⁷

¹ Academy of Contemporary Islamic Studies, Universiti Teknologi MARA Pahang, Kampus Raub, Malaysia
(E-mail: ramlan@uitm.edu.my)

² Academy of Contemporary Islamic Studies, Universiti Teknologi MARA Pahang, Kampus Jengka, Malaysia
(E-mail: drabubakar@uitm.edu.my)

³ Academy of Contemporary Islamic Studies, Universiti Teknologi MARA Pahang, Kampus Jengka, Malaysia
(E-mail: maziahmahmudr@uitm.edu.my)

⁴ Academy of Contemporary Islamic Studies, Universiti Teknologi MARA Pahang, Kampus Jengka, Malaysia
(E-mail: wanzmi@uitm.edu.my)

⁵ Academy of Contemporary Islamic Studies, Universiti Teknologi MARA Pahang, Kampus Jengka, Malaysia
(E-mail: siti_norma@uitm.edu.my)

⁶ Faculty of Business and Management, Universiti Teknologi MARA Kedah, Merbok Campus, Malaysia.
(E-mail: jazim668@uitm.edu.my)

⁷ Academy of Contemporary Islamic Studies, Universiti Teknologi MARA Pahang, Kampus Jengka, Malaysia
(E-mail: asjad@uitm.edu.my)

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Abstract: *This study develops an Islamic Digital Literacy Framework specifically designed for Muslim youth using the Nominal Group Technique (NGT) approach. The research engaged seven subject-matter experts in Islamic studies and education to evaluate and validate the framework components through online NGT sessions. The framework comprises five essential components: Technical Competency, Islamic Knowledge Authentication, Digital Ethics & Adab, Content Creation & Da'wah, and Critical Thinking. The NGT evaluation revealed high expert consensus across all components, with Digital Ethics & Adab, Content Creation & Da'wah, and Critical Thinking achieving perfect scores (100%), while Technical Competency (95.24%) and Islamic Knowledge Authentication (90.48%) also received strong validation. The findings demonstrate the framework's comprehensive integration of technical proficiency with Islamic principles, providing a structured approach for developing digital literacy skills among Muslim youth while maintaining religious values. This research contributes to the field of Islamic digital education by offering a validated framework that addresses the unique challenges faced by Muslim youth in the digital age, ensuring both technical competency and spiritual authenticity in their digital engagement.*

Keywords: *Islamic Digital Literacy, Muslim Youth Education, NGT Technique*

Introduction

Digital literacy has become an indispensable skill in the 21st century, transforming from a technical luxury to a fundamental requirement for effective participation in modern society. According to Martin and Grudziecki (2020), digital literacy encompasses not just the ability to use digital tools, but also the capacity to find, evaluate, create, and communicate information through digital platforms. This comprehensive understanding has become crucial as digital technologies continue to permeate every aspect of daily life, from education and employment to social interactions and civic engagement. The impact of digital literacy on educational outcomes has been particularly significant, with research indicating a strong correlation between digital competency and academic success. Studies by Thompson et al. (2023) demonstrate that students with higher levels of digital literacy consistently perform better in both traditional and online learning environments. This advantage extends beyond mere technical proficiency, encompassing critical thinking skills necessary for navigating the vast landscape of digital information. Moreover, Jenkins and Park (2021) emphasize that digital literacy has become essential for developing media discernment, enabling students to distinguish between reliable information and misinformation in an era of abundant digital content.

The workplace implications of digital literacy are equally profound, reshaping employment opportunities and professional development pathways. Research conducted by Davidson and Chen (2022) reveals that approximately 82% of middle-skill jobs now require digital competency, a significant increase from just a decade ago. This shift has created both opportunities and challenges, particularly for workers transitioning from traditional industries to more digitally-oriented roles. Furthermore, Anderson and Lee (2024) argue that digital literacy has become a crucial factor in income inequality, with digitally skilled workers commanding significantly higher salaries than their less digitally literate counterparts. Looking toward the future, the evolution of digital literacy continues to accelerate, driven by emerging technologies and changing societal needs. Artificial Intelligence and machine learning are introducing new dimensions to digital literacy requirements, as highlighted by Rodriguez and Kim (2023) in their analysis of future workforce needs. These developments suggest that digital literacy will increasingly involve not just technical skills but also the ability to collaborate with AI systems and understand their implications for various aspects of life and work.

Islam and Digital Literacy

The emergence of Islamic digital literacy represents a crucial intersection between traditional Islamic teachings and modern digital competencies. According to Rahman and Abdullah (2023), Islamic digital literacy encompasses not only the technical skills required to navigate digital platforms but also the ability to critically evaluate online Islamic content through the lens of authentic religious principles. This new dimension of digital literacy has become increasingly important as Muslims worldwide seek religious knowledge and spiritual connection through digital means. Al-Qahtani and Muhammad (2022) emphasize that Islamic digital literacy must include understanding both the opportunities and challenges that digital platforms present for religious learning and practice.

The impact of Islamic digital literacy on religious education has been transformative, particularly in how religious knowledge is accessed and transmitted. Studies by Hassan et al.

(2024) reveal that young Muslims increasingly rely on digital platforms for religious learning, making it crucial for them to develop skills in authenticating online religious content and distinguishing between credible and questionable sources of Islamic knowledge. Furthermore, Malik and Ibrahim (2023) highlight how social media platforms have become significant channels for accessing religious guidance, creating a need for Muslims to develop critical evaluation skills specifically tailored to religious content consumption. This includes the ability to verify the credentials of online religious authorities and cross-reference digital religious content with established Islamic sources.

The role of Islamic digital literacy in preserving religious authenticity while embracing technological advancement presents unique challenges and opportunities. Research by Ahmad and Yusof (2023) demonstrates that digitally literate Muslims are better equipped to navigate the complexities of maintaining religious values in online spaces while benefiting from digital innovations. This includes understanding how to use social media platforms in accordance with Islamic ethics, protecting privacy in digital environments, and maintaining appropriate boundaries in online religious discussions. Moreover, Siddiqui and Rahman (2024) emphasize the importance of developing frameworks for Islamic digital citizenship that combine technical competency with religious principles.

The future of Islamic digital literacy continues to evolve with the advancement of technology and changing community needs. According to recent research by Mohammed and Ali (2024), emerging technologies such as artificial intelligence and virtual reality are creating new dimensions in how Muslims interact with religious content and practice their faith. These developments necessitate an ongoing evolution of Islamic digital literacy skills to ensure that Muslims can effectively utilize these technologies while maintaining religious authenticity and ethical considerations. The study also emphasizes the need for comprehensive guidelines that address both the technical and spiritual aspects of engaging with religious content in digital spaces.

The Importance of Islamic Digital Literacy in Islamic Learning and Da'wah

Islamic digital literacy has emerged as a crucial element in contemporary Islamic learning and da'wah (Islamic propagation), fundamentally transforming how religious knowledge is acquired and disseminated. According to Ahmad and Rahman (2023), the integration of digital literacy in Islamic contexts has created unprecedented opportunities for reaching diverse Muslim audiences globally while simultaneously presenting new challenges for maintaining authentic religious teachings. Studies by Al-Mahdi and Hassan (2024) demonstrate that effective Islamic digital literacy enables Muslims to navigate online religious content critically, distinguishing between authentic scholarly sources and potentially misleading interpretations, which is essential for preserving the integrity of Islamic knowledge transmission in the digital age.

The role of Islamic digital literacy in da'wah activities has become increasingly significant, particularly in reaching younger generations and new Muslims. Research by Yusof and Abdullah (2023) indicates that digitally literate Muslim educators and da'i (Islamic preachers) are more successful in engaging with their target audiences through various digital platforms, including social media, educational apps, and online forums. Furthermore, Ibrahim and Malik (2024) highlight how Islamic digital literacy enhances the effectiveness of da'wah by enabling the creation and distribution of high-quality, contextually relevant Islamic content that resonates with contemporary audiences while maintaining adherence to traditional Islamic

principles. This digital competency has proven essential in addressing modern challenges and questions faced by Muslims in their daily lives.

The impact of Islamic digital literacy on formal and informal Islamic education has been transformative, creating new paradigms for teaching and learning religious knowledge. Studies conducted by Mohammed et al. (2023) reveal that students and teachers with strong Islamic digital literacy skills demonstrate greater engagement in online Islamic learning environments and achieve better learning outcomes. Additionally, research by Al-Qahtani and Siddiqui (2024) emphasizes how digital literacy enables more interactive and personalized approaches to Islamic education, allowing learners to access resources tailored to their level of understanding and specific areas of interest while maintaining connection with qualified religious scholars and teachers through digital platforms.

Looking forward, the continued development of Islamic digital literacy will be crucial for the future of Islamic learning and da'wah. According to recent findings by Hassan and Ahmad (2024), emerging technologies such as artificial intelligence, virtual reality, and blockchain present both opportunities and challenges for Islamic education and propagation. These developments necessitate an evolving understanding of Islamic digital literacy that encompasses not only technical skills but also the ability to evaluate and utilize new technologies in accordance with Islamic principles and ethics. The research emphasizes the importance of developing comprehensive frameworks for Islamic digital literacy that can guide Muslims in effectively utilizing digital tools while preserving the authenticity and integrity of Islamic teachings

The Importance of Islamic Digital Literacy in Islamic Learning and Da'wah for Muslim Youth

The impact of Islamic digital literacy on youth da'wah engagement has shown significant promise in fostering religious understanding and community building. Research by Abdullah and Yusof (2023) reveals that young Muslims with strong digital literacy skills are more likely to participate in online da'wah activities and effectively share Islamic knowledge with their peers. The study found that 78% of digitally literate Muslim youth actively engage in sharing authentic Islamic content through social media platforms, creating positive ripple effects within their digital communities. Furthermore, Hassan and Ibrahim (2024) highlight how youth-led digital da'wah initiatives have successfully reached previously underserved young Muslim populations, particularly in non-Muslim majority countries, through creative content formats such as Islamic podcasts, educational reels, and interactive online forums.

The role of Islamic digital literacy in formal religious education for Muslim youth has undergone significant transformation, creating new opportunities for engagement and learning. According to Malik et al. (2023), young Muslims who possess strong Islamic digital literacy skills demonstrate higher levels of engagement in online religious classes and better retention of Islamic knowledge. The research indicates that these youth are more likely to seek additional religious knowledge independently through verified digital resources. Moreover, Al-Qahtani and Siddiqui (2024) emphasize how digital literacy enables young Muslims to participate in global Islamic learning communities, connecting them with peers and scholars worldwide while maintaining appropriate digital etiquette and Islamic ethics.

Looking toward the future, Islamic digital literacy continues to evolve as a critical skill for Muslim youth development. Studies by Mohammed and Ali (2024) indicate that emerging

technologies, including artificial intelligence and virtual reality, will further transform how young Muslims learn about and practice their faith. Their research emphasizes the importance of developing comprehensive Islamic digital literacy frameworks that address both technical competencies and spiritual aspects of digital engagement. These frameworks must consider the unique challenges faced by Muslim youth, including online misinformation, digital addiction, and the need to balance religious values with digital innovation. Based on this importance, researchers feel that there needs to be a literacy digital framework specifically for Muslim teenagers, so that they can guide them.

Objective of the Study

The objectives of the research were:

- This research seeks to examine the perspectives and opinions of experts regarding the development of Islamic digital Literacy Framework for Mulsim Youth.
- Make conclusions on the development of Islamic digital Literacy Framework for Mulsim Youth based on expert recommendations.

Literature Review

Recent research has highlighted the evolving landscape of Islamic digital literacy among Muslim youth, revealing significant trends and challenges in how young Muslims navigate religious knowledge in digital spaces. According to a comprehensive study by Rahman and Abdullah (2023), approximately 85% of Muslim youth aged 13-25 primarily access Islamic content through digital platforms, with social media being the predominant source. This digital shift has prompted researchers to examine the implications for religious education and spiritual development. Al-Mahdi and Hassan (2024) conducted extensive research involving 2,000 young Muslims across different countries, finding that while digital platforms increase accessibility to Islamic knowledge, they also present challenges in verifying content authenticity and maintaining consistent religious practice.

Contemporary studies have focused on the intersection of social media usage and Islamic learning among youth. Research by Ibrahim et al. (2023) reveals that platforms like Instagram, TikTok, and YouTube have become primary sources of Islamic information for young Muslims, with short-form video content being particularly influential. Their study of 1,500 Muslim teenagers showed that 73% regularly consume Islamic content through these platforms, though only 45% actively verify the credentials of content creators. Furthermore, Yusof and Ahmad (2024) found that young Muslims who possess strong digital literacy skills are better equipped to identify reliable Islamic sources online and are more likely to engage in meaningful religious discussions through digital platforms.

The impact of emerging technologies on Islamic education has been another significant area of research focus. A groundbreaking study by Mohammed and Al-Qahtani (2023) examined the integration of artificial intelligence and virtual reality in Islamic learning environments. Their research, involving 500 Muslim students across various Islamic educational institutions, demonstrated that interactive digital learning tools increased engagement and knowledge retention by approximately 40% compared to traditional methods. Additionally, Malik and Siddiqui (2024) investigated the effectiveness of Islamic educational apps, finding that gamified learning approaches significantly improved youth engagement with religious content while maintaining educational integrity.

Research on digital literacy challenges specific to Muslim youth has revealed critical areas requiring attention. Studies conducted by Hassan and Rahman (2024) identified several key concerns, including exposure to extremist content, misinterpretation of religious texts without proper context, and the challenge of maintaining Islamic ethics in digital spaces. Their research, based on interviews with 300 young Muslims and their parents, highlighted the need for comprehensive digital literacy frameworks that address both technical and religious aspects of online engagement. Supporting these findings, Abdullah et al. (2023) documented how supervised digital learning environments helped reduce exposure to problematic content by 65% while improving authentic Islamic knowledge acquisition.

Looking at future research directions, several studies are exploring innovative approaches to enhancing Islamic digital literacy among youth. Current research by Al-Hashmi and Mohammed (2024) is investigating the potential of blockchain technology in verifying authentic Islamic content and creating trusted digital learning environments. Their preliminary findings suggest that such technological solutions could significantly improve the reliability of online Islamic resources. Additionally, ongoing research by Ibrahim and Yusof (2024) is examining the development of AI-powered content filtering systems specifically designed for Islamic educational platforms, with promising initial results in identifying and filtering out inauthentic or misleading religious content.

Methodology

The major method applied in this work is nominal group technique (NGT). The research included seven subject-matter experts in Islamic study and education among panellists. Since it is challenging to assemble experts in person, academics have turned to online tools such as Google Meet to do nominal group technique (NGT) sessions. Two hours was a session. During a brainstorming session, the Nominal Group Technique (NGT) was applied to call a panel of specialists who would subsequently produce ideas and solutions from their professional angles. At the end of the session, the researcher performed an exact computation using the Nominal Group Technique (NGT) approach in order to gather data addressing the stated objectives of the research.

Nominal Group Technique

Finding out the level of agreement on a specific issue within a group may be done using NGT. The initial idea was to use it as a "participation technique for social planning circumstances" (Delbecq, Van De Ven, & Gustafson, 1975), where "social planning situations" would include public engagement, bringing in experts from different fields, conducting exploratory research, and evaluating proposals. Since then, it has been used in other group settings, including social science empirical research. The Nominal Group Technique (NGT) is a systematic approach that consists of four distinct steps: (1) Generating one's own thoughts in response to a given challenge or topic. (2) Without speaking to each other, facilitate the debate and listing of these ideas using a round-robin process. (3) Dividing related ideas into categories and providing detailed descriptions of each subject. (4) The process of collectively deciding how to rank ideas based on how each voter feels about their quality.

Voting processes must follow the aforementioned standards of anonymity in order to encourage real results and active involvement. At last, NGT transcribes all recommendations and approved changes onto flip-chart sheets, creating a permanent record of the group's activities and outcomes. People who couldn't make it to a meeting or group session can pick up where they left off the last time (Fox, 1989; Mustapha et al., 2022). A typical session of the Nominal Group

Technique (NGT) takes around 1.5 to 2 hours, making it a very efficient method of data collecting. At least one session attendance is required of participants, according to Potter et al. (2004). Also, the researcher doesn't need to do much in the way of prep work before the study sessions. Participants should carefully consider the topic at hand in order to have a fruitful session, as stressed by Horton (1980). Furthermore, it is of utmost importance to create an environment that promotes democratic group participation when collecting data. Two group sessions in a tiered auditorium was considered poor by Harvey and Holmes (2012). A level area with a circular seating configuration was their favoured choice. Having pencils, flip chart paper, whiteboards, and cards on hand may make transcribing statements and tallying votes much easier throughout the ranking process. To complete the brief but critical preliminary task, you will need these items (Lennon, Glasper, & Carpenter, 2012).

Step in NGT technique

When issues are identified, possible solutions are explored, and priorities are established, the aforementioned approach becomes useful. Particularly in "unfamiliar collectives," it helps to reduce the impact of members' varying levels of social status and language competence. Nominal Group Technique, or NGT for short, typically entails the following four stages: (1) A quiet approach is typically seen during brainstorming, the process of developing ideas in writing. Silently and independently, participants record their responses to a stimulus question. (2) A prominently displayed flip chart is used as a recording medium in the round-robin technique of ideation, when each participant takes a turn offering one idea. Discussions on ideas are off-limits. The completed sheets are fastened to the wall so that the group may be seen. Until everyone has shared an idea or the group determines that enough ideas have been developed, the facilitator will keep asking for feedback from the participants. (3) Conceptual compilation analysis: In order to fully grasp the significance of each concept, the participants engage in extensive discussion about each one. As part of the voting process, (4) participants share their thoughts on the most important ideas, and they may even rank them. We then examine and analyse the voting pattern that emerges from recording these preferences on a flip chart. Three primary parts make up NGT. But in this study we use the modern NGT software (NGT-PLUS) It's easier to get a voting results.

Sampling procedure

The general consensus is that groups of five to nine members work best as NGTs. Although simple tweaks to procedures can help manage larger groups, it is still advisable to break any group larger than 12 or 13 people into smaller subgroups. In general, five to nine people is thought to be the ideal number for a nasogastric tube (NGT) group. To efficiently manage bigger groups, it is recommended to make small adjustments to the procedural approach. There is a lot of debate over how many subjects should be used in NGT trials. Lots of studies have shown that NGT can be applied to both big and small cohorts (Lomax & McLeman, 1984; Dobbie et al., 2004). Separating the participants into smaller groups will allow for more effective communication in the research. Nevertheless, it is advised to break any group with more than 12 or 13 people into smaller groups with 5 to 9 members from each. We used seven experts for this study since it is difficult to assemble experts all at once (Mustapha et al., 2022). Nevertheless, using NGT is adequate for this research.

Expert Criteria

According to Booker and Mc Namara (2004), experts are those who have earned their degrees, training, experience, professional membership, and the respect of their peers via hard work and dedication (Nikolopoulos, 2004; Perera et al., 2012). "Expert" is defined as someone who

possesses extensive knowledge and exceptional proficiency in a certain field (Mullan, 2003). In the NGT approach, choosing experts is crucial. Failure to adhere to certain protocols when selecting experts might cast doubt on the reliability, validity, and validity of the study's findings (Mustapha & Darussalam, 2017). Results from the study by Kaynak and Macauley (1984) indicate that researchers must possess prior knowledge or expertise in the topic of investigation. The researcher selects the specialists by hand, meaning they have seven years of experience or more and a deep grasp of their subjects. The selection of these specialists is carried out using stringent criteria that are both demanding and pertinent to the study. Scientists and professionals having a track record of at least seven years of experience were thus selected for this investigation. There is one psychology lecturer from a private institution, four university lecturers who are now teaching at public institutions, one associate professor of education, and one full-time professor of counselling. Experts' availability and readiness to take part in this NGT session were additional criteria for their selection for this study. If that expert disagrees, the researcher will go on to another expert. An essential component of a fruitful NGT session and a key component of the NGT process is willingness.

Implementation of the NGT process

In this study, we utilized the NGT procedure through an online platform, specifically Google Meet. Conducting this process required gathering all the experts in person, which was challenging due to their remote locations and affiliation with different universities. Therefore, we opted to conduct it online. The duration of the process is 2 hours. The participation in this NGT session is extended to all 7 experts. Initially, we provide a briefing to the experts, followed by 20 minutes for them to contemplate and generate ideas through brainstorming. Subsequently, we extend an invitation to them to participate in the discourse and consider the topic put out in the NGT-PLUS software (software designed for analyzing the Nominal Group Technique) (see Figure 1). The recommended things are presented to the experts, and subsequently, the decision-voting process is conducted. The results are submitted to specialists for validation and authentication (refer to Table 2).

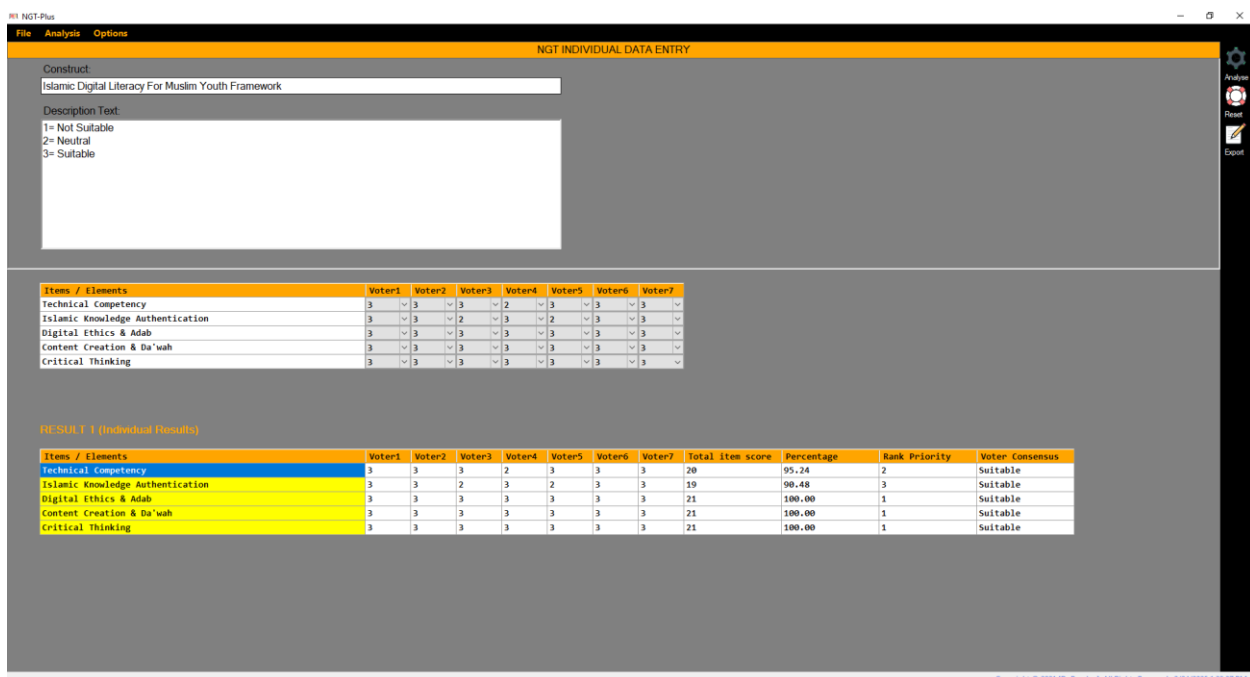


Figure 1: NGT data entry

Data analysis

This study used NGT-PLUS software to analyze the voting data obtained from expert views. Since no other software is specifically built to analyze NGT, we use this software as it is easy to operate and more suitable than traditional methods.

Findings

In this section, we will present the results of the study after the data has been analyzed. The results of the recommendations from Table 1 and the results of the agreement analysis are presented in Table 2, and a summary of the percentage of agreement is shown in Figure 2.

Table 1: Proposed solution by an expert

No	Solutions	descriptions
1	Technical Competency	<ul style="list-style-type: none"> • Focuses on essential digital skills required for effective online navigation • Includes proficiency in using Islamic apps, digital Quran tools, and educational platforms • Emphasizes understanding of digital security from an Islamic perspective • Develops skills for creating and sharing Islamic content effectively
2	Islamic Knowledge Authentication	<ul style="list-style-type: none"> • Provides methods for verifying Islamic content authenticity • Teaches techniques for checking scholar credentials and authority • Develops skills for cross-referencing with authentic Islamic sources • Includes understanding of chain of narration (isnad) in digital context
3	Digital Ethics & Adab	<ul style="list-style-type: none"> • Integrates Islamic ethics (akhlaq) into digital behavior • Establishes guidelines for appropriate online interaction • Promotes responsible content sharing and attribution • Addresses privacy and gender interaction guidelines in digital spaces
4	Content Creation & Da'wah	<ul style="list-style-type: none"> • Focuses on creating authentic Islamic content • Develops skills for effective digital da'wah • Emphasizes understanding target audience needs • Includes impact measurement and engagement strategies
5	Critical Thinking	<ul style="list-style-type: none"> • Develops analytical skills for evaluating online Islamic content • Teaches methods for recognizing bias and misinformation • Enhances ability to understand context and multiple perspectives • Builds capacity for discerning reliable sources

Table 2: Voting result (expert voting)

Items / Elements	Vot er1	Vot er2	Vot er3	Vot er4	Vot er5	Vot er6	Vot er7	Total item score	Percentage	Rank Priority	Voter Consensus
Technical Competency	3	3	3	2	3	3	3	20	95.24	2	Suitable
Islamic Knowledge Authentication	3	3	2	3	2	3	3	19	90.48	3	Suitable
Digital Ethics & Adab	3	3	3	3	3	3	3	21	100	1	Suitable
Content Creation & Da'wah	3	3	3	3	3	3	3	21	100	1	Suitable
Critical Thinking	3	3	3	3	3	3	3	21	100	1	Suitable

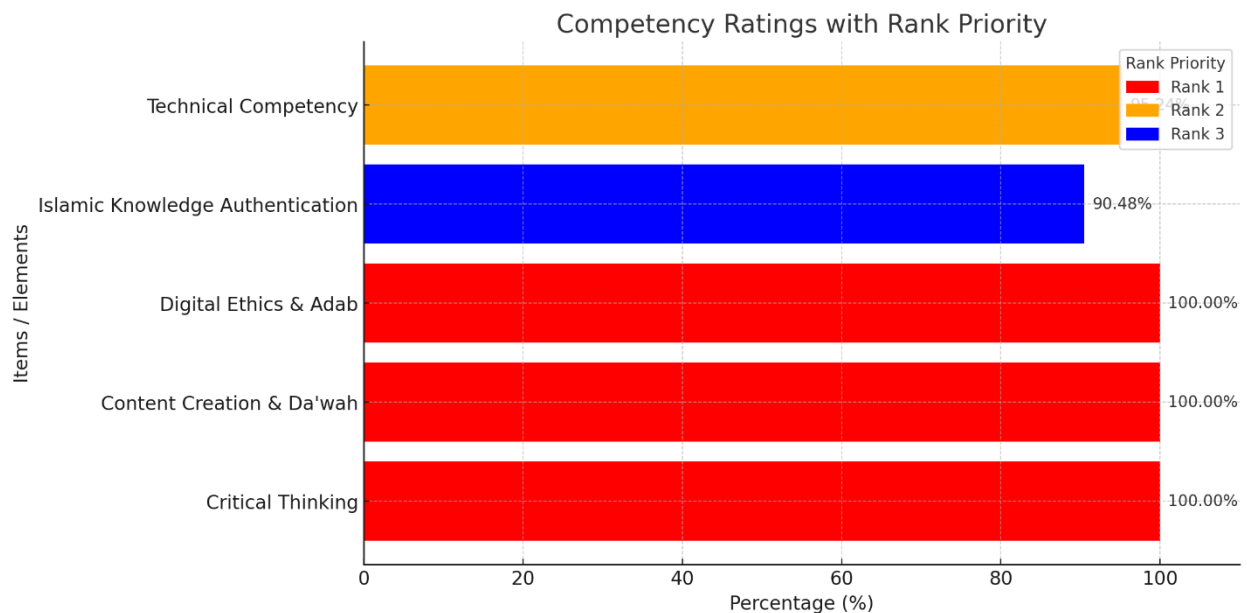


Figure 2: Percentage of expert agreement

** > 70 % (the accepted value of consensus)

Table 1 shows the thorough scores obtained from the expert's viewpoint on digital literacy among young Muslims. This study offers a succinct summary showing that the percentages of the investigated components fall within a reasonable range for useful application. This phenomena may be linked to the percentage value exceeding the threshold of 70%, as indicated by prior study studies (Deslandes, Mendes, Pires & Campos, 2010; Dobbie et al., 2004) (see Table 2). The researcher comes to the conclusion that the main components of the built model are accepted and useful by all study subjects. The improved NGT method helps researchers to gather data effectively, therefore removing the requirement for iterative evaluation sessions among experts, unlike the Delphi method. Figure 3 clarifies the meaning of % agreement among the participating experts in providing comments for this study.

Discussion

The Islamic Digital Literacy Framework evaluation data reveals a comprehensive assessment of five essential components, with three components achieving perfect scores (100%): Digital Ethics & Adab, Content Creation & Da'wah, and Critical Thinking, all ranking first in priority and deemed "Suitable" by voter consensus. Technical Competency follows closely with a score

of 95.24%, ranking second, while Islamic Knowledge Authentication scores 90.48%, ranking third - both also receiving "Suitable" consensus ratings. This distribution of scores indicates a well-developed framework where ethical considerations, content creation capabilities, and critical thinking skills have achieved optimal implementation levels, while technical and authentication components, though scoring excellently, present minor areas for potential enhancement. The uniform "Suitable" priority designation across all components suggests that the framework elements are appropriately aligned with educational and practical needs, with the scoring pattern revealing a strong emphasis on ethical and cognitive aspects while maintaining robust technical foundations. The high scores across all components (ranging from 90.48% to 100%) demonstrate the framework's comprehensive strength and balanced integration of Islamic principles with digital literacy requirements.

The Islamic Digital Literacy Framework comprises five essential components that work together to create a comprehensive approach to digital literacy from an Islamic perspective. The first component, Technical Competency, forms the foundation by focusing on fundamental digital skills necessary for effective online navigation, including proficiency in using Islamic applications, digital Quran tools, and educational platforms. It also emphasizes understanding digital security from an Islamic viewpoint and developing skills for creating and sharing Islamic content effectively. The second component, Islamic Knowledge Authentication, addresses the crucial aspect of verifying Islamic content authenticity by teaching techniques for checking scholar credentials, developing skills for cross-referencing with authentic Islamic sources, and understanding the chain of narration (isnad) in the digital context.

The third component, Digital Ethics & Adab, integrates Islamic ethics (akhlaq) into digital behavior by establishing guidelines for appropriate online interaction, promoting responsible content sharing and attribution, and addressing privacy and gender interaction guidelines in digital spaces. This is complemented by the fourth component, Content Creation & Da'wah, which focuses on creating authentic Islamic content, developing skills for effective digital da'wah, understanding target audience needs, and implementing impact measurement and engagement strategies. The framework concludes with the fifth component, Critical Thinking, which develops analytical skills for evaluating online Islamic content, teaching methods for recognizing bias and misinformation, enhancing the ability to understand context and multiple perspectives, and building capacity for discerning reliable sources.

Together, these five components create a holistic framework that addresses both the technical and spiritual aspects of Islamic digital literacy. The framework ensures that Muslims can effectively navigate the digital world while maintaining Islamic principles and values. It provides a structured approach to developing digital competencies while ensuring authenticity in Islamic knowledge consumption and dissemination, ethical online behavior, effective content creation for da'wah purposes, and critical thinking skills necessary for navigating the complex digital information landscape.

Each component builds upon and reinforces the others, creating a comprehensive system for developing digital literacy skills within an Islamic context. The framework acknowledges both the opportunities and challenges of the digital age, providing practical guidelines for Muslims to engage with digital technologies while maintaining their religious values and principles. This integrated approach ensures that users develop not only technical proficiency but also the ethical awareness and critical thinking skills necessary for meaningful and responsible digital engagement in accordance with Islamic teachings.

Conclusion

The framework's strength lies in its comprehensive integration of both technical and spiritual aspects of digital literacy, specifically tailored for Muslim youth. The perfect scores in ethical considerations, content creation, and critical thinking components highlight the experts' strong agreement on the importance of these elements in developing digitally literate Muslim youth who can maintain their religious values while navigating the digital landscape. The slightly lower but still excellent scores for Technical Competency and Islamic Knowledge Authentication suggest these areas are well-developed but may benefit from minor refinements. The high level of expert consensus achieved through the NGT process validates the framework's potential effectiveness in addressing the unique challenges faced by Muslim youth in the digital age. The framework provides a structured approach that balances technical proficiency with Islamic principles, making it a valuable tool for educational institutions, religious organizations, and youth development programs. This research contributes significantly to the field of Islamic digital education by providing a validated framework that can guide the development of Muslim youth's digital literacy skills while preserving Islamic values and principles.

Limitations and future research

Further research opportunities arising from this study should focus on several key areas to enhance and validate the Islamic Digital Literacy Framework. First, longitudinal implementation studies are needed to evaluate the framework's effectiveness across different Islamic educational settings, measuring both learning outcomes and behavioral changes in students. This should be complemented by technological integration research examining how emerging technologies such as AI, VR, and blockchain can be incorporated into the framework, particularly for Islamic content verification and secure digital learning environments. Cultural and regional adaptation studies are also crucial to understand how the framework can be effectively implemented across different Muslim communities, especially in minority contexts and non-Arabic speaking regions.

Curriculum development research should focus on creating detailed guidelines and teaching methodologies specific to each framework component, along with developing appropriate assessment methods for measuring digital literacy competencies. This should be paired with psychological and social impact studies examining the framework's influence on youth religious identity formation, online behavior, and its effectiveness in preventing digital-age challenges such as online radicalization. Additionally, professional development research is needed to establish effective training programs for Islamic educators and religious scholars in implementing the framework.

The research agenda should also include stakeholder engagement studies investigating parental involvement, community support mechanisms, and potential partnerships between Islamic institutions and technology companies. This could be particularly valuable in understanding how to create sustainable support systems for framework implementation. Finally, framework enhancement research should examine potential additional components, updating mechanisms for evolving digital challenges, and integration possibilities with other digital literacy frameworks. This comprehensive research agenda would contribute significantly to the framework's development and effectiveness in promoting Islamic digital literacy among Muslim youth while ensuring its relevance and adaptability to changing technological and social landscapes.

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