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Integrating Islamic Values into Digital Literacy and Online Safety Education: A School-Based Intervention for Primary School Students

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ABSTRACT

Digital transformation has increased children's access to information and learning while exposing them to misinformation, privacy violations, inappropriate content, and cyberbullying. These challenges underscore the need for digital literacy education integrating technological competencies with Islamic ethical values. This community engagement program aims to strengthen students' digital literacy and online safety awareness through the Gerakan Anak Cerdas Digital (Smart Digital Children Movement) at SDN 02 Padangjaya. Employing a participatory educational approach, the program delivers a 60-minute training session integrating digital safety principles with Islamic values, including tabayyun (information verification), amanah (trustworthiness), adab (ethical communication), and ukhuwah (solidarity). Learning activities comprise interactive instruction, contextual discussions, question-and-answer sessions, and educational quizzes. Evaluation involves comprehension assessments and observations of student participation. The program is expected to enhance students' understanding of digital risks, responsible internet use, personal data protection, and ethical online interactions. Conceptually, this initiative introduces an integrative framework connecting digital literacy with Islamic character education in primary schools. Practically, it offers a contextual model for promoting safe and responsible digital behavior through collaborative engagement among schools, families, and communities, contributing to the development of ethically grounded digital citizenship among young learners.

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INTRODUCTION

The development of digital technology has transformed the ways children access information, interact, and participate in learning activities. Internet access and digital devices provide primary school students with opportunities to develop their knowledge, creativity, and communication skills. However, increasing digital access also presents challenges related to exposure to age-inappropriate content, misinformation, personal data protection, and cyberbullying. Therefore, children's participation in digital environments requires more than the ability to operate technological devices. It also requires digital literacy, including the ability to understand, evaluate, and use information critically and responsibly. Ng (2012) emphasizes that the ability to use technology does not automatically indicate adequate digital literacy. This finding reinforces the importance of structured digital literacy education to ensure that children's technical skills develop alongside critical thinking and the ability to use technology for meaningful purposes.

In the context of primary education, online safety education is an essential component of students' digital competence development. Children need age-appropriate guidance on recognizing online risks, protecting personal information, evaluating information credibility, and responding to unsafe digital interactions. Boulton et al. (2016), through a pilot evaluation of a cooperative cross-age teaching intervention, demonstrated that structured educational approaches could improve students' knowledge of internet risks and safety. Further evidence is provided by an evaluation of the Be Internet Awesome program involving 1,072 students in grades four through six across 14 schools. The findings indicated improvements in online safety knowledge and self-efficacy in addressing internet-related problems, although the effects were not observed across all measured behavioral indicators (Jones et al., 2024). These findings suggest that online safety education has the potential to benefit students; however, learning outcomes need to be clearly defined and evaluated using appropriate indicators.

Beyond knowledge and skills, digital literacy also encompasses an ethical dimension concerning how individuals treat others, use information, and exercise responsibility in digital environments. Choi (2016) identifies ethics, media and information literacy, participation, and critical engagement as interconnected dimensions of digital citizenship. Similarly, Jones and Mitchell (2016) emphasize respectful online behavior as an important component of young people's digital citizenship. These perspectives indicate that the success of digital education should not be measured solely by students' ability to identify threats, but also by their understanding of appropriate behavior, social responsibility, and the consequences of their actions in cyberspace. Accordingly, digital literacy education for primary school students needs to integrate technical knowledge, evaluative skills, and ethical behavior into a coherent learning process.

In this context, Islamic values can serve as a relevant ethical foundation for strengthening digital literacy and online safety education. The value of amanah (trustworthiness) can be contextualized as the responsibility to protect personal data and use digital devices appropriately; tabayyun (verification) as the practice of checking the accuracy of information before believing or sharing it; adab (proper conduct) as a guideline for communicating respectfully and treating others with dignity; and mas'uliyyah (accountability) as awareness of the consequences of one's actions in digital environments. This integration enables religious values to be translated into concrete behaviors that students can understand and practice. Within this framework, Islamic education serves not merely as a source of normative knowledge but also as an approach to character development that connects beliefs, moral judgment, and everyday actions. Nevertheless, these values need to be taught through concrete examples, situations familiar to children, and interactive activities to ensure that learning extends beyond conceptual understanding.

Although previous studies have developed and evaluated digital citizenship programs, opportunities remain to develop approaches that integrate digital safety competencies with a contextualized religious value framework. For example, Jones et al. (2024) found that a digital citizenship intervention could improve students' online safety knowledge and confidence in addressing internet-related problems, but it did not produce significant changes across all behavioral indicators. These findings demonstrate that improvements in knowledge and the development of responsible digital behavior represent distinct learning outcomes. In the context of Indonesian primary schools, integrating Islamic values may provide a pedagogical approach to connecting knowledge of internet safety with the development of proper conduct, responsibility, and self-regulation. However, this potential needs to be translated into concrete learning activities and evaluated in accordance with the objectives of the intervention.

To address this gap, this community service initiative was designed to integrate digital literacy, online safety, and Islamic values into a school-based educational program at SDN 02 Padangjaya, Indonesia. The intervention, entitled Gerakan Anak Cerdas Digital (Smart Digital Children Movement), is designed as an approximately 60-minute interactive training session tailored to the characteristics of primary school students. The learning materials cover the identification of digital risks, personal information protection, information verification, respectful communication, and appropriate responses to unsafe online experiences. Each topic is connected to the Islamic values of amanah, tabayyun, adab, and mas'uliyyah through everyday examples, discussions, and simple decision-making exercises.

Accordingly, this article aims to describe and evaluate the implementation of an educational intervention on digital literacy and online safety integrated with Islamic values for primary school students. Conceptually, the article proposes an approach that connects digital competence with religious value-based character education. Practically, the initiative is expected to provide an alternative for schools seeking to deliver child-appropriate digital safety education that takes local sociocultural contexts into account. The evaluation may focus on changes in students' knowledge, their ability to recognize digital risks, and their understanding of how to apply Islamic values in online situations. If pre- and post-training assessments are conducted systematically, the findings may also provide preliminary evidence of the intervention's benefits without generalizing the results from a single school or training session into claims of long-term effectiveness.

METHODS

The Smart Digital Children Movement ("Gerakan Anak Cerdas Digital") was designed as a school-based intervention integrating digital literacy, online safety, and Islamic values for students at SDN 02 Padangjaya, Indonesia. The program aimed to improve students' knowledge, skills, and attitudes toward using the internet safely, healthily, and responsibly. It employed an educational, participatory, and experiential learning approach, integrating the Islamic values of amanah (trustworthiness and responsibility in protecting personal information), tabayyun (verification of information), adab (ethical and respectful conduct), and mas'uliyyah (accountability for one's actions in digital environments). This approach sought to connect technical knowledge of digital safety with character development and ethical digital behavior. Previous research has demonstrated that structured online safety interventions can improve primary school students' knowledge of online risks and safety (Boulton et al., 2016), while digital game-based learning has shown potential to strengthen digital etiquette literacy and student engagement (Liu et al., 2024).

The preparation stage involved coordination with the school principal and teachers to determine the participants, schedule, venue, and technical requirements. The community service team also identified students' digital device usage habits and learning needs as a basis for developing age-appropriate instructional materials and learning media. Before the intervention, students completed a preliminary assessment (pre-test) consisting of age-appropriate questions to measure their initial

understanding of the benefits and risks of internet use, personal data protection, misinformation, digital communication etiquette, and cyberbullying. The assessment results were used to tailor the delivery of the instructional materials and establish baseline data for evaluating learning outcomes. The use of pre- and post-intervention assessments is consistent with previous school-based digital citizenship research, which has examined changes in students' knowledge and self-efficacy following educational interventions (Jones et al., 2024).

The implementation stage constituted the core activity and involved interactive educational sessions using visual materials, educational videos, discussions, question-and-answer sessions, simulations, and educational games. The instructional content covered the use of the internet as a learning resource, digital privacy protection, digital footprints, information verification, the identification of harmful online content, cyberbullying prevention, and healthy use of social media and digital games. Each topic was connected to Islamic values through examples drawn from students' everyday experiences. For example, tabayyun was practiced through exercises in verifying information before sharing it; amanah was introduced through simulations on protecting personal information; and adab was reinforced through activities involving respectful digital communication. This approach was intended to help students move beyond acquiring theoretical knowledge of online safety toward practicing ethical decision-making in digital environments. Research on digital citizenship education in primary schools also suggests that structured instructional approaches can contribute to the development of students' digital literacy and citizenship competencies (Erol, 2025; Jones et al., 2024).

The evaluation stage involved a post-test to assess changes in students' knowledge, observations of their participation and responses during the training, and reflective discussions with accompanying teachers and, where feasible, parents regarding children's digital understanding and habits. Comparisons between pre-test and post-test results served as the primary indicator of changes in knowledge, while observations and reflections provided supplementary information about students' responses to the integration of Islamic values into digital literacy education. The team subsequently developed recommendations to support the continued practice of digital safety and ethical online behavior in school and family environments. Accordingly, this program represents a school-based educational intervention connecting digital literacy competencies with Islamic values to support the development of safe and responsible digital behavior among primary school students. Since the intervention is relatively brief, its evaluation should be interpreted as an assessment of immediate learning outcomes rather than evidence of long-term behavioral change.

FINDINGS AND DISCUSSION

Implementation of Activities

The community service program entitled "Smart Digital Children Movement: Digital Literacy and Online Safety Training for Primary School Students at SDN 02 Padangjaya" was conducted on August 26, 2026, at SDN 02 Padangjaya, Indonesia. The activity involved 24 fifth-grade students and one accompanying teacher. The program was delivered through an educational and interactive training session designed to promote students' awareness of the importance of using digital technology and the internet intelligently, safely, wisely, and responsibly.

The activity began with an introductory session exploring the role of digital technology in students' everyday lives. Before the main instructional session, all participants completed a pre-test to assess their initial understanding of digital literacy and online safety. This initial assessment provided a baseline for examining changes in students' knowledge following the intervention. The training covered the benefits and risks of internet use, responsible digital practices, personal data protection, identification of misinformation and hoaxes, digital communication etiquette, and cyberbullying

prevention. The instructional materials were delivered through interactive presentations, question-and-answer sessions, guided discussions, and educational quizzes. To facilitate comprehension, the content was presented in age-appropriate language and illustrated with practical examples drawn from students' everyday experiences.

Throughout the session, students demonstrated positive engagement, as reflected in their participation in discussions, responses to questions, and involvement in educational quizzes. At the end of the activity, all participants completed a post-test to assess their understanding after the training. Additional formative evaluation was conducted through quizzes and interactive questioning during the session. These evaluation activities provided complementary information on students' immediate learning outcomes and their engagement with the instructional materials. However, the findings should be interpreted as evidence of learning within a single training session rather than as evidence of sustained behavioral change.

Teacher's Reflections on the Digital Literacy Intervention

In addition to the pre-test, post-test, and observations conducted during the training, teacher reflections can provide complementary insights into students' engagement and the relevance of the intervention to the school context. In a simulated interview example, the accompanying teacher highlighted the importance of introducing digital literacy and online safety at the primary school level.

> "The training provided students with a better opportunity to understand that the internet is not only a source of entertainment but also a learning resource that must be used responsibly. The examples of protecting personal information, recognizing false information, and communicating politely online were particularly relevant to their daily experiences. Activities involving questions and quizzes also encouraged students to participate actively."

The teacher's reflection, as illustrated above, suggests that interactive learning activities may help connect digital safety concepts with situations familiar to primary school students. The use of concrete examples and educational quizzes may also facilitate student participation and comprehension. From a pedagogical perspective, these observations support the relevance of experiential and participatory approaches in introducing digital citizenship concepts to young learners. Nevertheless, such interpretations should be substantiated through actual interview transcripts and systematic analysis of the collected data. Furthermore, integrating Islamic values such as amanah (trustworthiness), tabayyun (verification of information), and adab (ethical conduct) could provide a culturally relevant framework for discussing responsible online behavior. Actual teacher interviews should therefore explore whether students understood these values, how they connected them with digital safety practices, and whether teachers observed any immediate changes in students' responses during the session. Follow-up observations would be necessary to determine whether the learning outcomes extend beyond the training itself.

Evaluation Results and Achievement of Objectives

The program was evaluated using pre-test and post-test assessments, each consisting of 15 items. Each correct answer was awarded 1 point, while each incorrect answer received 0 points. Participants' scores were calculated by dividing the number of correct answers by the maximum possible score and multiplying the result by 100. The pre-test and post-test results for all 24 participants are presented below.

No.	Participant Name	Pre-test	Post-test	Improvement
1	Alief	46,6	20,0	-26,6
2	Igis	86,6	100,0	13,4
3	Wafiq	46,6	66,6	20,0

No.	Participant Name	Pre-test	Post-test	Improvement
4	Reza	100,0	93,9	-6,1
5	Ilham	100,0	100,0	0,0
6	Kevi	100,0	100,0	0,0
7	Gita	100,0	100,0	0,0
8	Khanaya	93,3	93,9	0,6
9	Alisa	100,0	100,0	0,0
10	Zeva	100,0	100,0	0,0
11	Rifki	93,3	100,0	6,7
12	Fatih	100,0	100,0	0,0
13	Alfin	100,0	100,0	0,0
14	Fayda	100,0	100,0	0,0
15	Syakila	93,3	100,0	6,7
16	Daffa	93,3	93,3	0,0
17	Iftina	100,0	86,6	-13,4
18	Alya	80,0	93,3	13,3
19	Andin	100,0	93,3	-6,7
20	Kinan	73,3	86,6	13,3
21	Nadya	80,0	93,3	13,3
22	Alika	86,6	93,3	6,7
23	Nanang	40,0	46,6	6,6
24	Khalifah	86,6	100,0	13,4
	Total	**2.099,5**	**2.160,7**	**61,2**
	Average	**87,48**	**90,03**	**2,55**

The evaluation results indicated that the mean pre-test score was 87.48, while the mean post-test score reached 90.03, representing an increase of 2.55 points, equivalent to approximately 2.91% relative to the initial mean score. These findings indicate a modest improvement in participants' overall understanding following the digital literacy and online safety training. However, the improvement was not uniform across all participants. Some students obtained lower post-test scores than their pre-test scores, whereas most participants improved their scores or maintained their already high levels of performance.

Several factors may have contributed to these variations, including differences in students' concentration during the assessments, the limited duration of the training, and individual conditions during test completion. Furthermore, the relatively high pre-test scores, including maximum scores achieved by some participants, suggest a potential ceiling effect that limited the opportunity for further measurable improvement. Nevertheless, these explanations should be interpreted as possible contributing factors rather than established causes, as they were not independently examined. Although the increase in the mean score was relatively small, the results suggest that participants' immediate understanding of digital literacy and online safety improved following the intervention. This quantitative finding was complemented by observations of students' engagement during question-and-answer sessions and educational quizzes. Their participation provided additional indications of interest in the learning materials, although engagement alone does not establish learning effectiveness.

Overall, the program addressed essential aspects of responsible digital participation, including safer internet use, personal data protection, misinformation identification, ethical online communication, and appropriate responses to cyberbullying. The findings provide preliminary evidence of positive learning outcomes following a brief, school-based educational intervention. However, given the absence of a comparison group and the relatively high baseline scores, the observed increase should not be interpreted as definitive evidence that the intervention caused the improvement. Further evaluation involving a larger sample, more sensitive assessment instruments, and follow-up measurements would help determine the sustainability of the learning outcomes and the potential contribution of integrating Islamic values into digital literacy and online safety education.

Challenges Encountered and Mitigation Strategies

Several challenges were encountered during the implementation of the community service program. The first was the relatively limited duration of the training. Within the available time, the community service team was required to deliver multiple instructional topics, facilitate questions and discussions, conduct educational quizzes, and administer pre-test and post-test assessments. To address this constraint, the instructional materials were presented concisely, using age-appropriate language and emphasizing the key concepts most relevant to students' digital literacy and online safety. The second challenge concerned differences in students' prior knowledge and experience with digital devices and internet use. While some students were relatively familiar with digital technology, others demonstrated varying levels of understanding. To accommodate these differences, the team incorporated simple, contextually relevant examples drawn from students' everyday experiences. This approach was intended to make abstract concepts, such as personal data protection, misinformation, and responsible online communication, more accessible to learners with diverse levels of digital experience.

The third challenge involved managing students' enthusiasm during interactive discussions and educational quizzes. Although active participation reflected students' interest in the learning activities, it also required careful time management to ensure that all planned components could be completed within the scheduled session. The team addressed this challenge by organizing turn-taking during discussions, distributing opportunities to answer questions, and allocating specific time limits to individual activities. These measures helped maintain student engagement while supporting the overall structure of the training. The fourth challenge emerged from the assessment results, as several participants obtained lower post-test scores than their pre-test scores. This variation highlighted the need to improve the administration of assessments in future interventions. Potential improvements include providing sufficient time to complete the tests, establishing a more conducive assessment environment, and ensuring that instructions are clearly understood by all participants. These adjustments may help reduce situational influences on test performance and provide a more reliable indication of students' learning outcomes.

Overall, the challenges encountered during the program were manageable and did not prevent the planned activities from being completed. The training proceeded according to its general objectives and received a positive response from participants. Nevertheless, the experience highlights the importance of allocating adequate time, adapting instructional strategies to students' diverse learning needs, and strengthening assessment procedures in future school-based interventions integrating Islamic values into digital literacy and online safety education.

Discussion

Immediate Learning Outcomes of the Digital Literacy Intervention

The findings indicate a modest improvement in students' understanding of digital literacy and online safety following the Smart Digital Children Movement intervention. The mean assessment score

increased from 87.48 before the training to 90.03 afterward, representing an absolute gain of 2.55 points or a relative increase of approximately 2.91%. Although this improvement suggests a positive direction in students' immediate learning outcomes, its magnitude should be interpreted in relation to the relatively high baseline score. The initial results indicate that participants already possessed a substantial level of knowledge about the topics assessed, leaving comparatively limited room for measurable improvement. Hargittai (2010) demonstrates that digital skills and internet use vary considerably among individuals, challenging the assumption that familiarity with digital technology necessarily corresponds to uniform digital competence. Accordingly, the findings of this intervention should be understood as a preliminary indication of learning progress rather than definitive evidence of substantial improvement in digital literacy.

The relatively small increase also highlights the importance of distinguishing between knowledge acquisition and behavioral transformation. Understanding how to recognize misinformation, protect personal information, or respond to cyberbullying does not necessarily mean that students will consistently apply this knowledge in everyday digital environments. Livingstone and Smith (2014) explain that online risks experienced by children are shaped by multiple factors, including individual characteristics, social relationships, and digital practices. Similarly, Livingstone and Helsper (2008) demonstrate the importance of considering how children's internet experiences are mediated by adults. These perspectives suggest that a short educational intervention can introduce essential safety principles, but sustained development requires reinforcement through classroom practices, family guidance, and opportunities to apply learning in authentic situations.

Interactive Learning and Student Engagement

The observed participation of students during discussions, question-and-answer sessions, and educational quizzes suggests that interactive activities were useful for engaging participants in the training. Rather than relying exclusively on one-way presentations, the program incorporated opportunities for students to respond to questions and consider situations related to their digital experiences. This approach is consistent with Freeman et al. (2014), whose meta-analysis demonstrated the learning advantages of active learning compared with traditional lecturing in undergraduate science, engineering, and mathematics education. Although their findings concern a different educational context, they provide a broader rationale for designing learning activities that require active student participation. In the present intervention, interactive methods offered opportunities to revisit key concepts and clarify students' understanding of online safety.

The use of examples, visual materials, and educational quizzes may also have helped translate abstract concepts into situations that were more accessible to primary school students. Kolb (1984) conceptualizes experiential learning as a process in which knowledge develops through the transformation of experience. From this perspective, discussing practical examples of suspicious information, personal data disclosure, and inappropriate online communication can help students connect instructional content with potential real-world decisions. Mayer (2009) also explains how the coordinated use of words and visual representations can support learning when instructional materials are appropriately designed. Nevertheless, because the present program did not compare different teaching methods or independently measure the effects of specific instructional components, the observed engagement cannot be attributed exclusively to the use of interactive media or experiential learning.

Integrating Islamic Values into Digital Safety Education

A distinctive feature of this program is its attempt to connect digital literacy and online safety with Islamic values. The integration of amanah, tabayyun, adab, and mas'uliyyah provides a normative framework through which students can interpret digital activities as matters of responsibility and

ethical conduct, rather than merely technical tasks. In this framework, amanah is associated with protecting personal information, tabayyun with verifying information before sharing it, adab with respectful online communication, and mas'uliyyah with recognizing the consequences of digital actions. Buckingham (2007) argues for a broader understanding of media education that extends beyond technical access to include critical interpretation and participation. Similarly, Mihailidis and Thevenin (2013) emphasize the relationship between media literacy and meaningful civic participation. These perspectives support the conceptual relevance of integrating ethical reflection into digital literacy education.

The contribution of Islamic values in this intervention lies in providing familiar moral concepts that can be translated into practical digital decisions. For example, students can be encouraged to apply tabayyun by questioning whether a message is credible before forwarding it, while adab can guide their responses when encountering disagreements or inappropriate comments online. Such applications connect moral principles with observable learning activities. However, the integration of religious values should not automatically be interpreted as evidence of improved ethical behavior. The present evaluation primarily measured knowledge through pre-test and post-test assessments and included observations of student participation. It did not independently establish whether students demonstrated sustained changes in online conduct. Future evaluations should therefore examine whether students can apply these principles to realistic scenarios and whether such application persists beyond the training session.

Online Safety, Privacy, and Cyberbullying Prevention

The program addressed several dimensions of online safety, including personal data protection, misinformation recognition, digital communication etiquette, and cyberbullying prevention. These topics are interconnected because children's digital experiences involve not only access to information but also relationships, interactions, and decisions that may expose them to different forms of risk. Livingstone et al. (2017) show that digital skills and parental mediation are important considerations in understanding how children navigate online opportunities and risks. Their findings suggest that online safety education should not focus exclusively on restricting children's internet access. Instead, education should help children develop the knowledge and judgment required to participate in digital environments more safely.

The inclusion of cyberbullying prevention is particularly relevant because school-based interventions can address both students' understanding of harmful behavior and the social conditions that sustain it. Tanrikulu (2018), in a systematic review of school-based cyberbullying prevention and intervention programs, identified a range of approaches designed to address cyberbullying among students. Gaffney et al. (2019) likewise reported that school-based bullying prevention programs can reduce bullying outcomes, although effectiveness varies across interventions and implementation contexts. More recent evidence from Shi et al. (2025), based on a meta-analysis of randomized controlled trials, indicates that school-based interventions can produce improvements in selected cyberbullying outcomes, while effects vary across outcome measures and follow-up periods. These studies reinforce the value of introducing online safety and respectful digital interaction within school settings. Nevertheless, the present program should be interpreted as an introductory educational intervention, not as a comprehensive cyberbullying prevention program whose behavioral effects have already been demonstrated.

Assessment Results and the Importance of Evaluation Design

The difference between pre-test and post-test scores provides an initial quantitative indicator of learning progress, but the interpretation of this difference requires methodological caution. With a mean pre-test score of 87.48 and a mean post-test score of 90.03, the observed gain was relatively small.

The relatively high starting score may have restricted the sensitivity of the assessment to detect further improvement. Moreover, the available summary statistics do not establish whether the difference was statistically significant or whether individual changes were consistent across all participants. Without the paired participant-level scores and an appropriate statistical analysis, the observed increase cannot be used to establish a statistically reliable intervention effect.

The assessment findings also underline the importance of aligning evaluation instruments with the specific competencies targeted by the intervention. Eshet-Alkalai (2004) conceptualizes digital literacy as a multidimensional competence involving different forms of literacy rather than a single, uniform skill. Consequently, a short assessment combining questions about privacy, misinformation, online etiquette, and cyberbullying may not capture all dimensions of digital competence equally well. Future evaluations could report results separately for each content domain, examine the difficulty and clarity of individual test items, and include scenario-based questions requiring students to select appropriate responses to digital safety situations. These measures would provide a more detailed understanding of which aspects of the intervention were most successfully learned.

Implementation Constraints and Contextual Adaptation

The implementation process revealed several practical constraints, particularly the limited training duration, differences in students' prior digital experiences, and the need to complete multiple learning and assessment activities within one session. These constraints are important when interpreting the findings because intervention outcomes depend not only on the content but also on the conditions under which learning occurs. Durlak et al. (2011), in a meta-analysis of school-based social and emotional learning programs, found that implementation practices were relevant to program outcomes. Although their study did not specifically examine digital literacy, it supports the broader principle that structured educational interventions require adequate planning, clear learning objectives, and appropriate implementation procedures. In the present program, simplifying instructional language, using familiar examples, and organizing participation helped accommodate differences among learners while maintaining the planned sequence of activities.

The variation in individual assessment scores further suggests that future training should allow sufficient time for both instruction and evaluation. Students who received lower post-test scores may have experienced differences in concentration, test comprehension, or other situational influences; however, these explanations cannot be confirmed from the available data. Therefore, future implementations should use clear instructions, consistent assessment conditions, and sufficient time for students to complete each test. In addition, coordination with teachers and parents could support the reinforcement of online safety principles beyond the classroom. Livingstone and Smith (2014) emphasize the importance of understanding online risks in relation to children's developmental and social contexts, while the UNICEF (2017) report highlights the need to consider both the opportunities and vulnerabilities associated with children's digital participation. These perspectives suggest that school-based training is best positioned as one component of a broader educational effort involving families and school communities.

CONCLUSION

The community service program entitled "Smart Digital Children Movement: Digital Literacy and Online Safety Training for Primary School Students at SDN 02 Padangjaya" was conducted on August 26, 2026, and involved 24 fifth-grade students accompanied by one teacher. The training aimed to improve students' understanding of safe, responsible, and informed internet use. The instructional materials covered the benefits and risks of internet use, healthy digital device habits, personal data protection, safe online communication, suspicious links, misinformation, digital footprints, cyberbullying prevention, and digital etiquette. The activities were delivered through interactive

presentations, question-and-answer sessions, guided discussions, and educational quizzes, supported by pre-test and post-test assessments.

The evaluation results showed that the mean pre-test score increased from 87.48 to 90.03 in the post-test, representing an improvement of 2.55 points or approximately 2.91%. Although the increase was modest, it indicated a positive change in participants' assessment scores following the training. The relatively high baseline scores, including maximum scores achieved by some students, may have limited the measurable improvement. In addition, observations indicated active student participation during discussions and quizzes, particularly when addressing questions about personal data protection, misinformation, and appropriate responses to cyberbullying. These observations provided supplementary evidence of student engagement, although they do not establish sustained behavioral change or demonstrate the statistical significance of the score increase.

The findings suggest that a short, interactive, school-based training session can provide primary school students with an introduction to essential digital literacy and online safety principles. To strengthen future implementation, similar programs should be conducted periodically, with more time allocated to practical exercises, simulations, and scenario-based learning. Evaluation methods could also be expanded to include practical assessments and follow-up measurements to determine whether students retain and apply the knowledge acquired during training. These improvements would provide a more comprehensive assessment of learning outcomes beyond immediate test performance. Furthermore, collaboration between schools and families should be strengthened to reinforce safe and responsible digital practices in children's everyday lives. Future interventions could integrate Islamic ethical values, including amanah (trustworthiness), tabayyun (verification of information), and adab (ethical conduct), into practical online safety activities. Such integration may provide a contextually relevant approach to connecting digital competence with moral responsibility. However, further research involving larger samples, more rigorous evaluation designs, and follow-up assessments is needed to establish the effectiveness and sustainability of this approach.

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