



## **Strengthening Digital Literacy and Security, as well as Social Media Ethics at MTs Mambaul Ma'arif Belik**

**Nazmah Chasanatun Maulid<sup>1\*</sup>, Ghufron Zaida Muflih<sup>1</sup>, Fersellia<sup>1</sup>, Anisa Lutfiyani<sup>1</sup>, Endang Wahyuningsih<sup>1</sup>, Fahmi Fachri<sup>1</sup>**

<sup>1</sup>Universitas Ma'arif Nahdlatul Ulama Kebumen, Indonesia

---

### **Article Info**

#### **Article history:**

Received: August 16, 2025

Revised: September 20, 2025

Accepted: October 18, 2025

#### **Keywords:**

Digital literacy;

Digital security;

Social media ethics;

Student education;

Community service.

---

### **Abstract**

**Background:** The rapid advancement of digital technology requires the younger generation to develop strong digital literacy skills, particularly in digital security and social media ethics. However, many students still lack awareness of online threats such as data breaches, hoaxes, and unethical digital behavior, which can negatively impact their safety and character development. Therefore, educational interventions are needed to strengthen students' understanding and responsible use of digital platforms.

**Aims:** This Community Service (PkM) activity aimed to enhance students' knowledge and awareness at MTs Mambaul Ma'arif Belik regarding digital security risks and the ethical use of social media, enabling them to become safe, smart, and responsible digital users.

**Methods:** The activity was implemented through several stages, including preparation, material delivery, hands-on practice, interactive discussions, and evaluation using pre- and post-tests. A total of 20 students participated and completed a 10-item test instrument covering password security, account privacy, hoax identification, and ethical behavior in digital environments.

**Result:** The evaluation results indicated a significant improvement in students' knowledge levels, with the average score increasing from 48 in the pre-test to 82 in the post-test. This demonstrates that the training effectively improved students' understanding of digital security and social media ethics.

**Conclusion:** The community service activity successfully strengthened students' digital literacy, particularly in maintaining online security and practicing ethical behavior on social media. This program can serve as an initial step toward developing sustainable digital literacy education in secondary schools, promoting the formation of responsible and secure technology users for the future.

---

**To cite this article:** Maulid, N.C., Muflih, G. Z., Fersellia, Lutfiyani, A., Wahyuningsih, E., & Fachri, F. (2025). Strengthening Digital Literacy and Security, as well as Social Media Ethics at MTs Mambaul Ma'arif Belik. *KONEKTIVITAS: Jurnal Pengabdian kepada Masyarakat*, 1(2), 67-75. <https://doi.org/10.65818/konektivitas.v1i2.239>

This article is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/) © 2025 by author/s

---

## **INTRODUCTION**

The development of innovative technology is growing rapidly in various aspects of life, such as health, education, government, and social life (Fauzi et al., 2022). Innovative technology is transforming economic structures, influencing social dynamics, and becoming the center of modern society (Chakim & Bimantara, 2023). Technological advancements have introduced various new communication tools, such as mobile phones, the internet, television, and various other digital media. Communication media options are also increasingly diverse, ranging from instant messaging applications, social media platforms, and video conferencing services (Anggraeni et al., 2022).

In 2025, the number of internet users in Indonesia is recorded at 229 million, showing significant growth compared to the previous year, which was around 8 million users in one year. In

---

\* Corresponding author:

Maulid, N.C., Universitas Ma'arif Nahdlatul Ulama Kebumen, Indonesia. ✉ [fersellia98@gmail.com](mailto:fersellia98@gmail.com)

2024, the number of internet users will reach 221 million. Growth is reflected in the national internet penetration rate. In 2025, the internet penetration rate will reach 20.66%, an increase of 1.16% compared to 2024 (APJII, 2025). Compiled from DATEPORTAL, in 2025 the number of internet users in Indonesia will reach around 212 million people, with a penetration rate of 74.6 percent of the total population. The number of social media users in Indonesia is recorded at 143 million accounts in January 2025, or around 50.2 percent of the total population (Kemp, 2025). Social media has become part of people's activities and is widely used or accessed, such as platforms like YouTube, WhatsApp, Instagram, and Facebook, which are the main choices for sharing information, communicating, and accessing entertainment (Murdiani et al., 2022). Based on the high level of daily use of various social media platforms, such as YouTube, WhatsApp, Instagram, and Facebook, it can be concluded that social media plays a significant role in shaping people's communication patterns, information dissemination, and entertainment consumption. Therefore, increased digital literacy, particularly regarding digital security and social media ethics, is necessary to ensure that these platforms can be used wisely, safely, and responsibly.

Ease of access to information not only has a positive impact on progress such as increasing interaction, learning and religion (Purnomo & Jannah, 2024). Ease of access to information also has a negative impact (Hasanah et al., 2022), such as the spread of hoaxes, privacy violations, cyberbullying, and other digital threats (Kustiawan et al., 2023).

Digital literacy is a fundamental skill that young people must possess (Husen, 2025). The need to improve digital literacy in the education sector is an effort to improve the ability to understand and utilize information from various sources, as well as the ability to find, use, and disseminate information in the digital world (Yulisnawati, 2021). Individuals with strong digital literacy skills are better prepared to participate in society, face challenges, solve problems, and create innovative solutions (Gusta et al., 2023). Without adequate digital literacy, students are more vulnerable to misinformation, privacy risks, and inappropriate online behavior, which may negatively affect their personal development and social interactions.

MTs Mambaul Ma'arif Belik is an Islamic educational institution located on Jl. Raya Belik–Moga KM. 1, Belik District, Pemalang Regency. Established in 1988, this madrasah is under the auspices of the Ministry of Religious Affairs of the Republic of Indonesia and currently holds accreditation status B. As a learning center, MTs Mambaul Ma'arif Belik focuses not only on academic aspects, but also on character building, spirituality, and social skills of students.

Students at MTs Mambaul Ma'arif Belik are increasingly familiar with the use of social media as part of their daily activities. However, this ease of access to technology has not been fully matched by adequate digital literacy. Many students still lack an understanding of the importance of maintaining account privacy, using strong passwords, and the risks of digital threats such as online fraud, data theft, and misinformation. This situation creates potential vulnerabilities when students engage in online activities without adequate guidance and knowledge.

Social media ethics also pose a challenge for students. Some students still use social media solely for entertainment without understanding the boundaries of healthy and responsible communication. Behaviors such as spreading hoaxes, hate speech, and even the potential for digital bullying can arise from a lack of understanding of digital ethics. Furthermore, the role of teachers and parents in providing guidance in the digital space is not yet optimal.

This situation highlights the need for a digital literacy education program focused on improving digital security skills and social media ethics for students at MTs Mambaul Ma'arif Belik. This educational effort aims to equip students with an understanding of how to maintain privacy, recognize digital threats, and develop critical and responsible attitudes in using social media. This educational and training approach for students at MTs Mambatul Ma'arif Belik is expected to foster smarter, more ethical technology users, and those aligned with the Islamic values upheld at this faith-based institution.

Digital literacy education and training activities are carried out as a form of community service, particularly in secondary education settings. The goal is to equip MTs Mambaul Ma'arif Belik students with the potential dangers of cyberspace and to improve their ability to use technology safely, critically, and responsibly. This training also aims to strengthen students' understanding of the productive and wise use of digital media, enabling them to participate positively in the ever-evolving digital ecosystem.

## METHOD

This community service activity is implemented through a structured education and training program for students at MTs Manbaul Ma'arif Belik, held directly in the classroom. The program is designed to provide participants with conceptual understanding and practical skills related to digital literacy, particularly in aspects of digital security and social media ethics. Systematically, this education and training activity includes three main stages.

### *Preparation Stage*

The preparation stage was carried out to ensure that activities at MTs Mambaul Ma'arif Belik ran optimally and according to needs. In the preparation stage, the implementation team conducted visits and direct observations at the madrasah to assess the school's condition and identify students' needs related to digital literacy. Coordination and official permit requests were submitted to the principal regarding the implementation of activities, including the use of classrooms as activity locations. The number of participants for the training was determined, namely 20 8<sup>th</sup> grade students. The community service team, together with the school, prepared the necessary facilities and infrastructure, such as classrooms, projectors, sound systems, training modules, presentation slides, and evaluation instruments.

### *Implementation Stage*

The training implementation stage involved providing material to students of MTs Mambaul Ma'arif Belik regarding Digital Security Education and Social Media Ethics. The purpose of education and training was to increase students' understanding of the benefits of technology while minimizing the risks of negative impacts of digital media use. Before the material was delivered by the community service team, students were given a pretest with 10 questions to measure their knowledge of security and behavior in the digital space. The material delivery was divided into three main sessions. In the first session, students were given basic knowledge about digital security and social media ethics, including basic concepts, potential risks, and principles of good, safe, and responsible social media use.

The second session included hands-on practice, where participants, accompanied by the community service team, conducted simple simulations, such as identifying potential hoaxes, managing account security, and understanding steps to maintain privacy in digital spaces. The third session, a discussion and Q&A session, provided students with the opportunity to share experiences, address challenges they faced, and ask questions about digital security and ethical use of social media. After the third session, students were given a post-test to assess their knowledge of digital security and ethics.

### *Evaluation Stage*

The evaluation was conducted through several steps. Participants were assessed to determine their level of understanding after the training. This was measured through a ten-question pre- and post-test questionnaire focused on Digital Security and Social Media Ethics. The pre-test was conducted before the material was presented to assess students' initial knowledge regarding account privacy, password security, hoax identification, digital communication ethics, and cyber threat risks.

## RESULTS AND DISCUSSION

### **Results**

The community service activities at MTs Mambaul Ma'arif Belik were carried out in three main stages: preparation, implementation, and evaluation. During the preparation stage, the team conducted a field visit to observe the madrasah's condition and coordinate with the school (official permits, classroom provision, facilities/infrastructure, number of participants, etc.). The classroom was agreed upon as the training location, with the duration of the activity adjusted to the students' study schedules.

The implementation phase includes: (1) a pretest to measure students' initial knowledge of digital security and social media ethics; (2) delivery of basic material — covering the concepts of digital security, privacy, cyber threats (phishing, malware, cyberbullying), and communication ethics on social media; (3) hands-on practice and simulations (e.g., creating strong passwords, identifying

hoaxes, setting account privacy); and (4) a discussion/Q&A session that gives students the opportunity to share experiences and ask questions about their digital challenges (Figure 1).



**Figure 1.** Delivery of educational materials in class

The activity focused on delivering digital security and social media ethics education to students at MTs Mambaul Ma'arif Belik. The education and training aimed to increase participants' understanding of the importance of using technology wisely, enabling them to utilize digital media for positive activities while minimizing the risk of potential negative impacts.

This basic understanding serves as a foundation before entering more technical discussions regarding various forms of digital threats. By understanding the relationship between technology use and the potential risks that accompany it, students are expected to be better prepared and more vigilant in using digital devices and social media. The next material focuses on introducing various forms of digital security threats, such as phishing, malware, and cyberbullying. The presentation is done using simple language and includes real-life examples to facilitate student understanding. Phishing is explained as a digital fraud attempt to steal personal information, malware as a malicious device that can damage systems or steal data, while cyberbullying is presented as a form of bullying that occurs through digital media. Providing concrete examples helps students understand that these threats can be encountered in everyday internet activities.

In addition to security aspects, students are also provided with material on the importance of ethical practices in digital activities. This material emphasizes values such as maintaining good manners, respecting the privacy of others, and avoiding the spread of hate speech and false information (hoaxes). Participants are encouraged to use social media safely and beneficially, both for themselves and their surroundings. The emphasis on digital ethics is crucial because it provides students with moral support in developing responsible behavior and positive interactions online (Figure 2).



**Figure 2.** Digital Security Education Materials

Following the presentation, the activity continued with a question-and-answer session that encouraged active student participation. During this session, students were given the opportunity to ask questions, share personal experiences, and address challenges they encountered in using digital media. The discussion was interactive, as many students enthusiastically responded to the material presented. Through this dialogue, the presenter was able to clarify various misconceptions and provide practical solutions tailored to the students' needs and level of understanding. This two-way communication made the activity more meaningful and helped participants understand the material more deeply. The question-and-answer session with students is shown in the following [Figure 3](#).



**Figure 3.** Discussion and practical session

In the closing session, students were invited to perform simple exercises to improve their skills in avoiding various digital threats, one of which was through creating strong passwords. This exercise involved using a combination of letters, numbers, and symbols to create passwords that were difficult to guess but still easy to remember. Students were given live examples and asked to practice them in groups in class. This practical activity aimed to strengthen students' understanding of the importance of digital account protection, so that they not only gained theoretical knowledge but also developed basic skills in maintaining personal security in the digital space.

The results of the pretest and posttest evaluations showed a significant increase in understanding among students at MTs Mambaul Ma'arif Belik after participating in digital literacy training. The pretest was administered before the material was delivered to measure students' initial abilities on ten themes related to digital security and social media ethics. In general, the pretest results indicated that students' knowledge levels were still in the low to moderate category. The number of students who answered each question correctly ranged from 6 to 11 students out of a total of 20 participants. The topics with the least understanding in the pretest stage were phishing and online fraud (6 students correctly), and malware and device threats (7 students correctly). This indicates that the concept of technical digital threats is still relatively unfamiliar to most students.

After the training activities were carried out through material delivery, interactive discussions, and practical simulations, student understanding increased significantly, as shown by the posttest results. In the posttest stage, the number of students who answered correctly on each theme increased sharply, ranging from 17 to 19 students. The highest increase occurred in the theme of phishing and online fraud, with an increase of 183%, followed by malware and device threats with an increase of 157%. These results confirm that the delivery of material accompanied by real-life case

examples and simple practices is effective in improving student understanding on topics that were previously difficult to grasp.

Overall, the average number of correct answers increased from 8.3 students in the pretest to 17.9 students in the posttest. This increase demonstrates that the training provided positively impacted students' understanding of digital security, data privacy, social media ethics, and cyberthreat prevention measures. Therefore, the training was effective and relevant in improving digital literacy among high school students (Table 1).

**Table 1.** Recapitulation of Correct Answers in Pretest and Posttest

No.	Question Theme	Number of Correct Pretest (n=20)	Posttest Correct Number (n=20)	Percentage Increase
1	Digital account privacy	9 students	18 students	100%
2	Password security	8 students	17 students	113%
3	Identifying hoaxes	10 students	19 students	90%
4	Digital communication ethics	7 students	17 students	143%
5	Personal data protection	8 students	18 students	125%
6	Phishing and online fraud	6 students	17 students	183%
7	Malware and device threats	7 students	18 students	157%
8	Cyberbullying and its prevention	9 students	18 students	100%
9	Responsible use of social media	11 students	19 students	73%
10	Everyday digital security steps	8 students	18 students	125%

## Discussion

The implementation of digital literacy training at MTs Mambaul Ma'arif Belik demonstrated that well-structured community service activities integrating theoretical instruction, hands-on practice, and interactive dialogue can significantly improve students' digital competencies. These results are consistent with recent studies reporting that digital literacy programs effectively enhance students' understanding of digital security, privacy protection, and ethical online behavior (Utin, Hana, & Christine, 2025; Ayuningtyas, Sakti, & Nidatya, 2025).

The relatively low pretest scores align with previous research showing that students often lack adequate awareness and preparedness when facing digital threats such as phishing, malware, and cyberbullying (Retnowati, Fajrie, & Fakhriyah, 2025). This underscores the importance of early and structured digital literacy education that goes beyond basic usage skills, emphasizing prevention strategies and ethical decision-making.

Interactive components, such as Q&A sessions and hands-on activities, played a crucial role in facilitating deeper comprehension. This supports evidence from systematic literature reviews showing that participatory and simulation-based strategies are more effective than passive lecturing in building digital and online safety skills among students (Fachrin, 2025). By contextualizing abstract cybersecurity concepts with real-life scenarios, students could form practical mental models, enabling better transfer of knowledge to everyday digital interactions.

The emphasis on ethical behavior in digital environments also aligns with research arguing that digital literacy should integrate moral and social dimensions, not merely technical competencies (Puspitoningrum et al., 2025). Ethical literacy fosters critical thinking and responsible engagement online, which has been shown to positively influence students' ability to distinguish credible information and interact respectfully within digital communities.

The significant increases in posttest scores across all themes demonstrate that digital literacy interventions can lead to measurable knowledge gains. Similar results have been reported in other educational contexts, where literacy programs significantly enhanced students' capacity to engage safely and ethically in digital spaces (Ayuningtyas et al., 2025; Utin et al., 2025). Overall, these findings indicate that comprehensive digital literacy training encompassing security, privacy, ethics, and practical skills is essential for preparing students to navigate the complexities of online environments.

### *Implications*

The findings of this community service activity carry several important implications for educational practice and community-based digital literacy initiatives. First, the significant improvement in students' understanding of digital security and social media ethics indicates that structured training combining theoretical explanation, simulation, and reflective dialogue can effectively bridge the gap between digital exposure and digital competence. This suggests that schools, particularly faith-based secondary institutions, should consider integrating similar literacy programs into regular learning activities to foster responsible digital citizenship aligned with moral and cultural values. Moreover, the participatory approach applied in this program demonstrates that experiential learning strategies can enhance students' engagement and internalization of ethical principles, rather than merely increasing technical knowledge. From a broader community service perspective, the program illustrates how universities can function as agents of social transformation by transferring practical knowledge that addresses real societal challenges, especially the risks associated with rapid technological adoption among adolescents. Therefore, this activity implies the need for sustainable collaboration between educational institutions, teachers, parents, and higher education practitioners to create a holistic ecosystem that supports safe, ethical, and critical digital participation among young learners.

### *Contribution of Community Service*

This community service activity contributes to strengthening students' digital awareness and competencies by providing structured and contextually relevant digital literacy training. The program demonstrates the role of higher education institutions in addressing societal needs through educational outreach and knowledge transfer. Furthermore, the training model implemented in this activity can serve as a practical reference for similar community service programs aimed at improving digital literacy among students in comparable educational settings.

### *Limitations*

Despite the positive outcomes, this study has several limitations. The training was conducted over a relatively short period, limiting the ability to evaluate long-term knowledge retention and behavioral change in students' digital practices. In addition, the assessment relied primarily on pretest and posttest scores, without longitudinal observation of students' actual online behavior. The study was also conducted in a single institution, which may limit the generalizability of the findings to broader educational contexts.

### *Suggestions*

Future community service programs and research should consider implementing digital literacy training on a sustained and continuous basis, ideally integrated into the formal school curriculum. Longitudinal studies are recommended to assess long-term impacts on students' digital behavior and ethical awareness. In addition, involving teachers and parents in digital literacy initiatives may help reinforce safe and responsible digital practices beyond the classroom. The development of localized case studies and simulation-based learning materials is also suggested to enhance relevance and learning effectiveness.

## **CONCLUSION**

Community service activities in the form of training on Digital Literacy and Security, as well as Social Media Ethics at MTs Mambaul Ma'arif Belik, have been well-run and have had a significant impact on improving student understanding. Based on the results of the pre- and post-test evaluation, there has been a significant increase in knowledge across all aspects tested, particularly those related to phishing, malware, personal data protection, and digital communication ethics. This demonstrates that students are able to understand the material presented through theoretical presentations, case studies, interactive discussions, and hands-on practice.

This training equips students with the basic skills to maintain account security, create strong passwords, identify hoaxes and digital threats, and apply ethical social media practices. Furthermore, this activity fosters critical and responsible use of technology, enabling students to participate safely and positively in the digital environment.

Overall, this training program was effective and relevant as an effort to improve digital literacy among students. It is hoped that similar activities can be carried out sustainably in the future, with the support of schools and parents, so that students can navigate the increasingly complex dynamics of the digital world.

#### ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to the principal, teachers, and students of MTs Mambaul Ma'arif Belik for their cooperation and active participation in this community service activity. Special appreciation is extended to the school administration for providing facilities, support, and valuable assistance throughout the implementation of the program. The authors also thank the academic institution and colleagues who contributed to the planning, execution, and evaluation of this activity. Their collaboration and support were essential in ensuring the success of this digital literacy training program. Finally, the authors acknowledge all parties who have directly or indirectly supported this activity and made the achievement of its objectives possible.

#### AUTHOR CONTRIBUTION STATEMENT

NM contributed to the conceptualization of the study, project design, and supervision of the community service activities. GM was responsible for material development, training implementation, and coordination with the partner school. FS conducted data collection, including administering the pretest and posttest instruments, and assisted in classroom facilitation. AL performed data analysis and interpretation of evaluation results. EW contributed to the preparation of educational media, practical simulations, and documentation of activities. FF was responsible for manuscript writing, editing, and final review. All authors have read and approved the final manuscript.

#### REFERENCES

- Anggraeni, PN, Herdiani, S., Rustini, T., & Arifin, MH (2022). The Influence of Advances in Communication Technology on Children's Social Development. *Journal of Social Science Education*, 14(1), 144–147. <https://doi.org/10.37304/jpips.v14i1.4743>
- APJII. (2025). Survey of Internet Penetration and Internet Usage Behavior 2025. <https://survei.apjii.or.id/>
- Chakim, MHR, & Bimantara, AA (2023). Technological Advances in the 21st Century: Changing Perspectives. *ADI Community Service*, 4(1), 40–45. <https://doi.org/10.34306/adimas.v4i1.1036>
- Fauzi, E., Sinatrya, MV, Ramdhani, ND, Ramadhan, R., & Safari, ZMR (2022). The influence of advances in information technology on accounting development. *Journal of Economic Education Research*, 7(2), 189–197. <https://doi.org/10.21067/jrpe.v7i2.6877>
- Gusta, W., Alhusna, A., & Medina, P. (2023). The Influence of Digital Literacy on High School Students' Critical Thinking Skills in Mathematics. *Angewandte Chemie International Edition*, 6(11), 951–952, 4(1), 5–24. <https://doi.org/https://doi.org/10.56799/peshum.v4i1.6266>
- Hasanah, L., Putri, MA, Hanin, AH, & Siregar, WS (2022). The Impact of Information Technology Development on Students. *Journal of Informatics and Educational Technology*, 2(2), 44–48. <https://doi.org/https://doi.org/10.25008/jitp.v2i2.33>
- Husen, N. (2025). Improving Digital Literacy Among Junior High School Students through a Gamification Approach. *BARAKATI: Journal of Community Service*, 3(2), 58–65. <https://doi.org/https://doi.org/10.62394/barakati.v3i2.175>
- Kemp, S. (2025). Digital 2025: Indonesia — DataReportal – Global Digital Insights. DATEPORTAL. <https://datareportal.com/reports/digital-2025-indonesia>
- Kustiawan, W., Hasibuan, AA, Lubis, N., Fayrozi, MF, & Maisarah, M. (2023). Positive and Negative Impacts of National Infrastructure Development in the Digital Era. *Equivalent: Journal of Social and Technical Sciences*, 5(2), 202–207. <https://doi.org/10.59261/jequi.v5i2.160>
- Murdiani, T., Asnusa, S., & Ramaputra, MG (2022). Utilizing Preferred Social Media for MSMEs to Support Digital Marketing Efforts. *Proceedings of the Darmajaya National Seminar*, 1(0), 117–125. <https://jurnal.darmajaya.ac.id/index.php/PSND/article/view/3256>

- Purnomo, ID, & Jannah, R. (2024). The Positive and Negative Impacts of Social Media on Islamic Religious Education. *Religion: Journal of Religion, Social, and Culture*, 3(2), 588–599. <https://doi.org/https://doi.org/10.55606/religion.v3i2.967>
- Yulisnawati, T. (2021). Digital Literacy in Elementary School Learning as an Effort to Improve the Quality of Educators. *Proceedings of the National Seminar on Elementary Education*, 1(1), 388–397.
- Ayuningtyas, R., Sakti, D. V., & Nidatya, R. (2025). The effectiveness of digital literacy programs in improving students' online security awareness and ethical behavior. *Journal of Digital Education and Learning Innovation*, 7(1), 45–58.
- Fachrin, M. (2025). Participatory and simulation-based approaches in digital literacy education: A systematic review. *Fondasi: Journal of Educational Research*, 4(2), 120–135.
- Puspitonigrum, E., Sari, A. P., Wibowo, T., & Hidayat, R. (2025). Integrating ethical dimensions into digital literacy education for secondary students. *Contemporary Digital Education Journal*, 6(1), 78–92.
- Retnowati, D., Fajrie, N., & Fakhriyah, F. (2025). Students' awareness of cyber threats: Challenges in digital safety education. *Journal of Primary Technology and Media Education*, 9(2), 210–224.
- Utin, U., Hana, H., & Christine, C. (2025). Digital literacy training in schools: Enhancing security awareness and responsible online behavior. *Community Education and Development Journal*, 8(1), 33–47.