Digital Literacy Training to Increase Data Privacy Awareness Among High School Students in Tangerang

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ABSTRACT

The development of digital technology has had a significant impact on daily life, including for high school students in Tangerang. However, a lack of awareness about the importance of protecting personal data privacy can increase the risk of misuse of personal information. This Community Service activity aimed to conduct digital literacy training to enhance students' understanding of data privacy. The method used included an interactive approach involving material delivery, discussions, and Q&A sessions that focused on understanding technology, data protection strategies, and the application of digital ethics. The results showed that digital literacy training was effective in raising students' awareness of personal information security, such as using strong passwords, enabling two-step verification, and recognizing cyber threats such as phishing and hacking. Furthermore, the training encouraged students to act more responsibly in the digital world, thereby fostering a safer online environment. Thus, digital literacy training is an essential aspect of equipping students with the necessary skills and insights to navigate the digital era safely and wisely.

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INTRODUCTION

The rapid advancement of modern technology has profoundly influenced society, particularly through the rise of social media, which has become an integral part of daily life. Individuals across all age groups—children, adolescents, and adults alike—now actively maintain social media accounts. These platforms serve as spaces for self-expression, the dissemination of ideas, social interaction, and public discourse. Numerous applications such as Facebook, Twitter, Instagram, YouTube, and others have been developed to meet users' needs, enabling communication and connectivity across local, regional, and international communities.

In this context, digital literacy emerges as a fundamental competency amid the swift evolution of information technology. It encompasses not only the technical ability to navigate digital tools but also a critical understanding of personal data protection. As cyber threats become increasingly sophisticated, digital literacy plays a vital role in safeguarding personal information against misuse and unauthorized access (Saputra, 2023).

Article 27 of the Regulation of the Minister of Communication and Information Technology of the Republic of Indonesia No. 20 of 2016 on the Protection of Personal Data in Electronic Systems underscores the legal responsibilities of internet users within the framework of digital literacy. The regulation mandates that individuals must maintain the confidentiality of personal data that is acquired, processed, and analyzed; use such data solely for legitimate purposes; ensure that data and related documents are protected from misuse; and be held accountable for any personal data under their control—whether organizationally or individually—should breaches occur (Bunga et al., 2022).

High school students in South Tangerang are in urgent need of training in digital literacy and data privacy to ensure safe and effective engagement with digital platforms. In an era characterized by pervasive internet access and technological sophistication, students are exposed to vast information networks and digital environments that simultaneously present significant security risks. Without a foundational understanding of digital literacy, students are particularly vulnerable to cyber threats such as phishing, malware, and identity theft. A structured training program would equip them with essential skills to secure personal information and manage their digital footprints responsibly.

Moreover, cultivating critical thinking is paramount in enabling students to assess online content discerningly and avoid falling prey to misinformation or hoaxes. Privacy literacy also instills digital ethics, guiding students to interact respectfully and responsibly in virtual spaces. Such training, therefore, enhances not only technical competencies but also fosters greater awareness of digital rights and responsibilities, reinforcing the importance of privacy in today's interconnected world. Additionally, it supports digital learning, which has become a core component of post-pandemic educational systems. Through this initiative, students will be better prepared to face the complexities of digital life with confidence, caution, and resilience.

In the contemporary digital landscape, information and communication technologies have become deeply embedded in everyday routines. High school students, as digital natives, are inherently familiar with using technology for communication, information retrieval, and sharing personal content (Setiawati et al., 2021). However, this familiarity often coincides with an increased risk of privacy violations and data security breaches (Anggen Suari & Sarjana, 2023; Ma & Chen, 2023). In South Tangerang, many students still lack sufficient awareness of the significance of personal data protection and the strategies needed to safeguard it. Incidents involving unauthorized dissemination of personal images or videos, online scams, and identity theft are alarmingly prevalent among this demographic (Fadli et al., 2024).

Data literacy—the ability to comprehend, analyze, and interpret data within relevant contexts—is essential in addressing these challenges. In the realm of data privacy, such literacy is crucial for helping students understand how their personal data is collected, processed, and secured (Zakir et al., 2025). Unfortunately, many students still lack the requisite knowledge to protect their privacy effectively (Nguyen et al., 2023). Therefore, targeted data literacy training is imperative to raise students' awareness and empower them to safeguard their personal information in increasingly complex digital environments.

As part of the younger generation, high school students in Tangerang must receive digital literacy training to raise their awareness of the importance of protecting their personal data. With the growing prevalence of cybersecurity threats, a lack of understanding puts them at risk of having their personal information misused. This training equips students with the knowledge and skills necessary to safeguard their data from irresponsible parties.

Firstly, digital literacy training offers in-depth insights into how digital technologies operate and how personal data can be exploited. This is crucial, as many students remain unaware of how easily their information can be accessed or manipulated by others. With a clearer understanding, they will become more cautious and vigilant when sharing personal details online.

Secondly, the training introduces practical measures for protecting personal privacy. Students will learn the importance of using strong passwords, enabling two-factor authentication, and recognizing signs of phishing attempts and other cyberattacks. These skills empower them to take preventive action against a variety of digital threats.

In addition, digital literacy training plays a critical role in cultivating digital responsibility among students. They will gain an understanding of ethical technology use, including respecting others' privacy and refraining from sharing personal information without consent. This awareness contributes to creating a safer, healthier digital environment for all users.

Furthermore, this training prepares students to navigate an increasingly digitized world. Many future careers will demand strong digital competencies, including the ability to manage personal data securely. With a solid foundation in digital literacy, high school students in Tangerang will be better equipped to enter the workforce and seize career opportunities in the digital economy.

In conclusion, digital literacy training holds significant value for high school students in Tangerang. By enhancing their awareness of data privacy, the younger generation will be more prepared to face the challenges and harness the opportunities of the digital age—safely and wisely.

METHOD

This Community Service activity was carried out in the South Tangerang area, --located at SMA Negeri 2 Kota Tangerang, targeting high school students as the primary audience. There are 30 students from different schools— SMA Negeri 2 Kota Tangerang, SMKN 11 Serpong, SMKN 3 Tangerang Selatan, SMKN 6 Tangerang Selatan, SMK Riksa I, and SMKP Puspa Wisata.

The activity was conducted in three sessions, consisting of a one-way communication session (lecture), a two-way communication session (discussion and Q&A) and implementation by creating a social media content:
- Session I: Delivery of material on digital literacy and raising awareness of data privacy
- Session II: Q&A session between the speaker and the participants

- Session III: Evaluation in form of questionairre and creating a social media campaign (Instagram) focused on data privacy
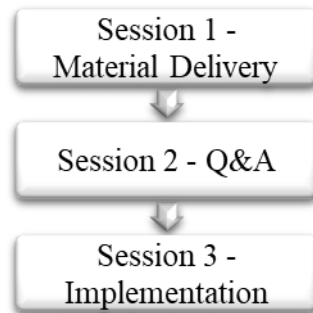

FIGURE 1. Method
Source: own elaboration

RESULTS AND DISCUSSION

The community service activity on data privacy awareness for high school students was designed to respond to the growing concerns about digital safety in today's increasingly connected world. In an era where teenagers are active users of social media, online platforms, and various digital tools, their personal data is more vulnerable than ever. The activity aimed to enhance students' understanding of how their digital footprints are created, shared, and potentially exploited.

FIGURE 2. Session 1
Source: screenshot Instagram @pkmtangsel2025

First session was delivered in one-way communication where topic of data privacy in digital media literacy was explained to high school students as the audience. This community service activity, titled "Digital Literacy and Personal Data Protection," was developed in response to the increasing need for youth awareness in the digital age, particularly among high school students who are active users of digital technologies. The sessions were informed by a range of scholarly sources emphasizing the urgency of strengthening digital literacy to protect personal data. As noted by Purwaningsih, Hidayat, and Nugroho (2021), the millennial and Gen Z generations are highly engaged with technology but often lack sufficient digital literacy to navigate it safely, especially in the context of Society 5.0. The activity was structured to introduce students to core concepts of data privacy, digital identity, online tracking, and oversharing. According to Saputra (2021), personal data protection should be embedded in digital

literacy education from an early age, as many young people remain unaware of what constitutes personal data and how it can be misused.

FIGURE 3. Session 2
Source: screenshot Instagram @pkmtangsel2025

Second session was the interactive sessions i.e question and answer session about the topic and participants experience and it found out that they frequently engage in oversharing behaviors—posting excessive personal information on social media without understanding the long-term consequences.

In the Q&A session, it was revealed that the majority of the audience did not know what constitutes personal and private information, and in practice, they often share such information on their social media accounts, including information related to their identity.This finding reflects the concerns raised by Bunga, Dewi, and Dewi (2022), who argue that oversharing is a key issue that increases vulnerability to digital threats such as cyberbullying, identity theft, and online exploitation. Through reflective activities and real-life case studies, students examined their own online habits, such as posting real-time locations or personal photos with identifiable information. These discussions encouraged students to critically assess the risks involved in digital interactions and understand the importance of consent, privacy settings, and data management.

Third session was the evaluation session. An evaluation session in a community service activity involves a systematic approach to examine the effectiveness, outcomes, and impact of the program. Rossi, Lipsey, and Freeman (2004) state that this evaluation compares the program's achievements against its initial objectives to enhance the quality and relevance of the service. This session typically includes reviewing the accomplishments, analyzing the implementation process, collecting feedback from participants, and pinpointing areas for improvement. Patton (2008) highlights that evaluation sessions are crucial for understanding a program's value, ensuring accountability, and supporting future planning.

A questionnaire serves as a structured tool for evaluating community service activities by capturing stakeholder satisfaction, effectiveness, and impact. Recent studies, such as those by Rachmiatie et al. (2022) and Lau & Snell (2023), highlight its role in assessing service outcomes, resource utilization, and community engagement. Using Likert scales and targeted indicators, questionnaires provide quantifiable insights that guide program improvements ensuring systematic feedback from participants.

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TABLE 1. Questionnaire Result

No	Question	Response		
		Agree	**Neutral**	**Disagree**
1	I understand fundamental concepts of digital literacy, such as online safety and privacy.	87%	10%	3%
2	I understand the urgency of digital literacy, such as online safety and privacy.	100%	0	0
3	I am confident in using a variety of digital tools and platforms for communication and information.	90%	10%	0
4	I feel concerned about sharing personal information on social media platforms.	100%	0	0
5	I make an effort to educate myself about new tools and practices to enhance my online safety.	90%	10%	0
6	I share the information about the online safety and privacy on my social media platforms	77%	17%	6%

Source: Data Process

The survey table reflects participant responses to six statements concerning digital literacy and online safety awareness. The results indicate overwhelming agreement with the importance and understanding of digital literacy concepts. For instance, 87% of respondents acknowledge understanding fundamental digital literacy ideas like online safety and privacy, while 10% remain neutral and a minimal 3% disagree. Significantly, every participant agrees on the urgency of digital literacy and concerns about sharing personal information on social media, showing a collective awareness of contemporary digital risks. Confidence in utilizing diverse digital tools is high, with 90% affirming their capability. Similarly, 90% report actively educating themselves about new online safety measures, signaling proactive engagement. Sharing information on social media about these topics, while slightly lower at 77% agreement, still indicates a majority strive to spread awareness. The low percentages of neutral or disagreement responses highlight strong participant commitment and engagement with the subject matter.

Overall, these findings suggest that the community service program or campaign efficiently raised awareness, boosted confidence in digital communication skills, and fostered responsible online behavior. Participants not only understand the critical need for digital literacy but also feel motivated to apply and share this knowledge in their digital interactions. Such feedback is crucial for program evaluators to confirm that the objectives of promoting online safety and privacy awareness are being met effectively and to identify areas, such as social media sharing, that might need additional encouragement or support to enhance community impact.

The last session was the implementation of participants' comprehension from session 1 and 2 by creating content about data privacy displayed on their social media accounts with some hashtags- @fikomumb, @universitasmercubuana and @pkmtangsel2025.

FIGURE 4. Session 3
Source: screenshot Instagram @pkmtangsel2025

In addition to behavioral aspects, the community service also highlighted the legal and ethical dimensions of personal data protection. Emphasizing knowledge of digital rights and national regulations, such as Indonesia's Personal Data Protection Law (UU PDP), it becomes essential for empowering individuals to safeguard their data (Simanjuntak, 2024). During the sessions, students were introduced to basic legal frameworks and discussed scenarios where legal protection is applicable. Many students expressed surprise at the extent to which apps and platforms collect and use their information—often without explicit consent (Chen & Chen, 2025). This prompted in-depth conversations about digital responsibility and accountability, both individually and collectively.

The broader academic context, as outlined by Rahmadanita and Hidayat (2022), shows a sharp rise in research concerning digital literacy and data protection from 2012 to 2022. This trend supports the relevance and timeliness of community service programs like this, which directly address contemporary educational and societal needs. The integration of engaging multimedia materials, practical demonstrations, and peer discussions proved effective in increasing comprehension and interest among students. As a result, many participants reported increased awareness and a willingness to implement safer online behaviors. Going forward, the program could be expanded through student-led initiatives, such as creating school-wide data privacy campaigns or organizing peer mentoring groups. Ultimately, this activity not only fulfilled its educational mission but also contributed to the cultivation of critical, informed, and responsible digital citizens.

CONCLUSION

The rapid integration of social media into the daily lives of individuals across all age groups underscores the essential need for digital literacy, especially among high school students in regions like South Tangerang. Digital literacy extends beyond technical skills to encompass critical understanding and ethical responsibility surrounding data privacy and online safety. As cyber threats such as phishing, identity theft, and unauthorized data sharing become increasingly prevalent, the importance of educating

youth on protective measures becomes paramount. Current regulations, such as Indonesia's Ministry of Communication and Information Technology's mandates on personal data protection, further highlight the legal and ethical frameworks necessary for responsible digital engagement. Through targeted community service initiatives involving lectures, interactive discussions, and practical applications like social media campaigns, students gain both awareness and actionable skills to navigate digital environments securely. This multifaceted training not only equips young people to safeguard their personal information but also fosters critical thinking to discern misinformation and encourages digital ethics. Given the pervasive role of technology in education and future careers, enhancing students' digital literacy is essential for their personal safety and professional readiness. Ultimately, structured digital literacy programs addressing data privacy empower students to participate confidently and responsibly in the digital world, contributing to a safer online community and preparing them to face the evolving challenges of the information age with resilience and caution.

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