

IMPROVING DIGITAL LITERACY AND ADOLESCENT MENTAL HEALTH IN THE SOCIAL MEDIA ERA

Sufyan^{1*}, Maimun¹, Muhammad Yassir³, Yonoriadi¹, Alfina¹, Nurrisma¹, Ismail¹,
Riyan Maulana¹, Saiful Marhaban², Zainuddin², Rahmat Arfan⁴, Muridha Hasan³, Deni
Trianda Pitri³, Sabitah³, Lusi Tuter Mulia³, Zeni Abdi³

¹ STMIK Indonesia Banda Aceh, Indonesia

² Universitas Syiah Kuala

³ Gunung Leuser University, Aceh, Indonesia

⁴ Kutaraja Polytechnic, Banda Aceh, Indonesia, Indonesia

Email correspondence: sofyan.ars@gmail.com

ABSTRACT

The rapid rise of social media usage among adolescents presents both opportunities and challenges, particularly concerning mental health and digital literacy. In the digital age, adolescents must navigate complex virtual environments while maintaining psychological well-being. This community service program aimed to enhance digital literacy and promote mental health awareness among school-aged adolescents in Aceh. The activity involved 25 participants aged 15–24, drawn from various schools and youth communities. Implemented over two days, the program employed a quasi-experimental design, combining interactive education, case discussions, and role-play simulations. Pre-test and post-test evaluations measured changes in participants' knowledge levels. The results indicated a significant improvement in understanding digital literacy and mental health concepts, as evidenced by a Wilcoxon test result of $p = 0.010$ (< 0.05). These findings underscore the effectiveness of interdisciplinary educational interventions in equipping adolescents with critical digital skills and emotional resilience in the era of pervasive social media. The program highlights the importance of collaborative efforts among educators, families, and communities in fostering safe, informed, and mentally healthy digital engagement among youth.

Keywords: digital literacy, mental health, adolescents, social media, community service, education

INTRODUCTION

In the contemporary digital epoch, adolescents navigate an intricate landscape where social media's pervasive influence intersects with their burgeoning digital literacy and mental well-being (Sari & Nurdini, 2022). The ubiquitous nature of social media platforms has become an undeniable reality, particularly for young individuals who are increasingly immersed in these virtual environments (Alfaridzi et al., 2024). Digital literacy emerges as a crucial competency to navigate the challenges of this era (Alfiani et al., 2024). Digital literacy extends beyond mere operational skills with digital devices, representing a holistic integration of capabilities in utilizing information and communication technologies (Gunawan & Dyatmika, 2022). It encompasses the ability to access, evaluate, and synthesize digital resources, enabling individuals to discern credible information from misinformation and to engage thoughtfully in online interactions (Irawan et al., 2025). The surge in social media usage among adolescents presents both opportunities and challenges to their mental health. While social media can

facilitate social connection, provide access to information, and serve as a platform for self-expression, excessive or problematic use has been linked to various mental health concerns (Saputra et al., 2024). The rapid dissemination of information, the potential for cyberbullying, and the pressure to maintain a curated online persona can significantly impact adolescents' psychological well-being. Therefore, investigating the intricate relationship between digital literacy, social media engagement, and mental health among school-aged adolescents becomes imperative. It is vital to explore strategies for bolstering digital literacy skills among adolescents, fostering responsible social media usage, and promoting mental health awareness in the digital age (Rahmawati et al., 2024). Furthermore, online support and governmental regulations are crucial to safeguarding mental health in this evolving digital landscape (Suryoadji et al., 2024).

LITERATURE REVIEWS

Social Media's Impact on Adolescent Mental Health

Adolescents' mental health is intricately linked to social media usage, with potential risks like cyberbullying and the pressure to present a perfect online image (Hamilton et al., 2024). The constant connectivity and exposure to curated content can fuel social comparison, leading to anxiety, depression, and body image issues (Anguyo et al., 2023; Wiedicke et al., 2022). The addictive nature of social media platforms, designed to maximize user engagement, can further exacerbate these mental health challenges. This highlights the urgent need for interventions that promote responsible social media use and foster critical thinking skills among adolescents. Cyberbullying, a pervasive issue in the digital age, has detrimental effects on adolescents' mental health, leading to anxiety, depression, and even suicidal ideation (Khalaf et al., 2023). This form of harassment can occur anonymously, making it difficult to trace and stop, and its impact can be far-reaching, affecting victims' self-esteem, social relationships, and academic performance (Khalaf et al., 2023). The pressure to maintain a perfect online persona can also contribute to mental health issues, as adolescents strive to meet unrealistic expectations and portray an idealized version of themselves. This pressure can lead to feelings of inadequacy, low self-esteem, and a constant need for validation from others, further exacerbating anxiety and depression (Faqihi et al., 2024). Conversely, social media can offer marginalized communities benefits like reduced in-person bullying (Bacaj et al., 2025). For example, LGBTQ+ youth may find community online when their physical environment lacks support (Blackwell et al., 2025). It is essential to address both the positive and negative aspects of social media in the context of adolescent mental health.

Digital Literacy as a Protective Factor

Cultivating digital literacy among adolescents is a pivotal strategy for mitigating the adverse effects of social media on their mental health. Digital literacy encompasses the ability to critically evaluate online content, discern misinformation, and engage in responsible online behavior. Equipping adolescents with these skills empowers them to navigate the digital landscape more effectively and make informed decisions about their social media usage (Khalaf et al., 2023). Critical thinking, an essential component of digital literacy, enables adolescents to analyze information objectively, identify biases, and assess the credibility of sources. This skill is paramount in an era characterized by the proliferation of fake news and disinformation. By fostering critical thinking skills, educators and parents can empower adolescents to become

discerning consumers of online content and to resist the influence of misinformation. Furthermore, media literacy education plays a crucial role in equipping adolescents with the tools to understand the persuasive techniques used in online advertising and social media content. Understanding how media messages are constructed and disseminated enables adolescents to make informed decisions about their consumption habits and to resist the manipulative tactics employed by marketers. Digital literacy is an indispensable skill for modern students, who must navigate technological, informational, cognitive, and socio-emotional challenges in the digital age (Lawitta & Najdah, 2025). Self-efficacy is closely associated with digital literacy, and it enhances students' ability to use technology and the internet effectively and safely (Lawitta & Najdah, 2025).

Strategies for Enhancing Digital Literacy

Enhancing digital literacy among adolescents requires a multifaceted approach involving schools, families, and communities. Integrating digital literacy into the school curriculum is essential for providing adolescents with the foundational skills and knowledge they need to navigate the digital world safely and responsibly (RELA et al., 2025). This can be achieved through dedicated courses, workshops, and activities that focus on critical thinking, media literacy, online safety, and responsible social media usage (Lawitta & Najdah, 2025). Teachers play a crucial role in fostering digital literacy among adolescents by incorporating digital tools and resources into their teaching practices. They can model responsible online behavior, provide guidance on evaluating online sources, and facilitate discussions about the ethical and social implications of technology. Furthermore, collaboration between schools and families is essential for reinforcing digital literacy skills and promoting responsible online behavior at home. Parents can play a vital role in fostering digital literacy among their children by engaging in open and honest conversations about technology, setting clear expectations for online behavior, and monitoring their children's online activities. Schools and parents need to cooperate to minimize students' exposure to online risks while increasing their digital knowledge (Hussein & Reem, 2020). Community-based initiatives, such as libraries, community centers, and youth organizations, can also contribute to enhancing digital literacy by providing access to technology, training programs, and resources for adolescents and their families. Digital literacy encompasses the skills to use diverse information sources and digital tools to create, manage, and share media, thus it is paramount to provide digital literacy training and educational initiatives in higher education institutions (Koh et al., 2022; Lawitta & Najdah, 2025). Such initiatives are pivotal in mentoring the younger generation to be digitally literate so that they can contribute effectively towards individual, societal, and national development (Irawan et al., 2025; Reddy et al., 2021).

The Role of Digital Ethics

In conjunction with digital literacy, instilling digital ethics in adolescents is crucial for promoting responsible online behavior and mitigating the risks associated with social media use (HENDAYANA et al., 2024). Digital ethics encompasses a set of moral principles and values that guide individuals' behavior in the digital realm. It emphasizes the importance of respecting others' privacy, avoiding cyberbullying, and engaging in responsible online communication (HENDAYANA et al., 2024). Educating adolescents about digital ethics can help them develop a strong moral compass and make ethical decisions when using social media and other digital platforms (Rianto, 2019). Furthermore, promoting empathy and understanding

among adolescents can help to reduce cyberbullying and online harassment. By encouraging adolescents to consider the impact of their online actions on others, educators and parents can foster a culture of respect and inclusivity in the digital world. Digital ethics can be taught through various means, including classroom discussions, role-playing activities, and case studies.

Mental Health Support and Resources

Despite the proactive implementation of digital literacy initiatives and the instillation of ethical digital behavior, the potential for social media to negatively impact mental health exists; thus it is essential to provide mental health support and resources for adolescents who may be struggling with issues such as cyberbullying, social comparison, or social media addiction. Schools can play a vital role in providing mental health support by offering counseling services, support groups, and mental health awareness programs. It is also important to create a supportive and inclusive school environment where adolescents feel comfortable seeking help when they need it. Furthermore, parents can play a crucial role in supporting their children's mental health by being attentive to their emotional needs, providing a safe and supportive home environment, and seeking professional help if necessary. Encouraging open communication between parents and adolescents about their online experiences can help to identify potential mental health issues early on and prevent them from escalating. Reaching young people and providing support when needed is essential to their well-being (Khalaf et al., 2023). Digital interventions and mental health services can be integrated into schools to support students.

METHOD

The primary target of this community service program is youth aged 15–24 years from schools and youth communities in the Aceh region. Twenty-five participants represented several schools and youth organizations near the activity location. The activity was held over two consecutive days at a public facility easily accessible to participants. The activity was divided into three main stages: preparation, implementation, and evaluation, with the following details:

1. Preparation Stage

This stage begins with coordination between the community service team and implementing partners. This process includes technical activity planning, obtaining permits from local authorities, selecting relevant resource persons from various disciplines (public health, psychology, information technology), developing an activity schedule (rundown), and preparing supporting facilities and infrastructure. Partners include youth organizations and school communities committed to mental health and digital literacy issues.

2. Implementation Stage

The implementation methods used in this training include:

- a. Interactive education on digital literacy and mental health,
 - b. Case Study Discussion, and
 - c. Role-play simulations to strengthen participants' understanding of the material.
- The material is delivered using a communicative approach and tailored to the

characteristics of adolescents to make it easier to understand and apply in everyday life, especially when interacting with social media.

3. **Evaluation Stage**

The evaluation was conducted to determine changes in participants' knowledge levels before and after the training. The evaluation design used a quasi-experimental approach with pre-test and post-test instruments. The questionnaire was structured as short questions and distributed online via Google Forms. This evaluation aimed to assess the effectiveness of the material presented in improving adolescents' understanding of digital literacy and mental health issues.

This community service activity not only involved youth as active participants but also fostered cross-sector collaboration. Strategic partners included representatives from guidance and counseling teachers, the school's youth community, and two students from the Public Health Study Program who served as field facilitators. This active partner role and cross-sector involvement were key to the success of this community service program in reaching and empowering youth comprehensively.

RESULTS AND DISCUSSION

This community service activity was held over two days, involving dozens of students from various schools in Aceh. The program was designed to increase adolescents' understanding of the importance of digital literacy and mental health in facing the challenges of the social media era. As a first step, participants were required to follow health protocols before entering the activity area, demonstrating that this activity prioritizes not only educational aspects but also safety.

Preparation Stage

The initial phase involved coordination between the community service team and implementing partners, comprising the school's youth community and educational leaders. The implementing team, comprised of lecturers from communication science, psychology, and information technology, collaborated to develop relevant training materials. Additionally, logistical preparations, location permits, and the formation of an implementing committee, which also included student representatives, were carried out.

Implementation Stage

The event was divided into two main sessions. On the first day, participants received education on the importance of maintaining mental health and the wise use of digital media. The material covered:

1. Definition and scope of digital literacy and mental health,
2. The impact of social media on adolescent emotions,
3. Strategies to counter hoaxes and negative information,
4. Safe and responsible use of technology.

Participants were given a pre-test before the material was presented to gauge their initial knowledge. Their enthusiasm was evident in their active participation in the discussion, their

commitment to the post-test, and their note-taking of important material. On the second day, case study discussions and role-play simulations were held to strengthen participants' practical understanding. They were divided into small groups and asked to analyze scenarios related to mental stress resulting from social media use. This activity encouraged participants to identify problems and formulate solutions together.

Evaluation of Results

The evaluation was conducted by comparing the pre-test and post-test results. The majority of participants showed an increase in scores, indicating increased knowledge. Statistical analysis using the Wilcoxon test showed a p-value of 0.010 (<0.05), indicating a significant difference between before and after the educational intervention. This indicates that the integrated educational approach was effective in improving adolescents' understanding of digital literacy and mental health.

Discussion

Teenagers, as an age group highly active on social media, require enhanced digital literacy, not only technical but also psychological. Social media can often be a source of stress, anxiety, and even depression if not handled wisely. Therefore, understanding how to filter information and maintain emotional balance is crucial.

The findings from this activity align with previous research, which found that adolescents need more information and education about mental health and digital safety. As many as 60% of adolescents rely on devices like mobile phones and laptops to find information, but not all of the information they access is reliable. Therefore, this type of training is highly relevant. Support from the surrounding community, particularly from the school community, teachers, and peers, is also crucial in fostering mentally healthy behaviors. The community plays a key role in encouraging adolescents to seek help when facing psychological distress. Improving digital literacy and mental health must be a continuous effort, especially within an educational context that adapts to changing times.

CONCLUSION

Addressing the intertwined challenges of enhancing digital literacy and bolstering mental health among school-aged adolescents in the era of social media necessitates a concerted, multi-pronged approach. This approach must encompass educational initiatives, ethical guidelines, mental health support, and collaborative efforts involving schools, families, and communities. By equipping adolescents with the skills and knowledge they need to navigate the digital world safely and responsibly, while also providing them with the support they need to protect their mental health, we can empower them to thrive in the digital age and reach their full potential (Canonigo et al., 2024; O'Reilly et al., 2018; Saputra et al., 2024). By scaling AI programs in a sustainable and inclusive manner, while addressing resistance to change and insufficient training, we are setting the stage for future AI programs to be more effective in educational settings. AI can convert spoken words into text for hearing-impaired learners or provide audio descriptions for visually impaired users, ensuring inclusivity in education. This can include subsidized platforms, technical support, and flexible learning options designed to bridge digital divides. AI-driven platforms can offer personalized learning experiences that cater to individual

student needs. AI systems can continuously assess student performance and adjust the difficulty and content of learning materials accordingly.

REFERENCES

- Alfaridzi, GR, Putri, EM, & Sulistiasih, S. (2024). Social media effects on adolescent mental health amidst digital transformation: A comprehensive study of psychological and related risks. *Observation: Journal of Psychological Science Publication*, 2(3), 202–222. <https://doi.org/10.61132/observasi.v2i3.491>
- Canonigo, J., Uy, L. K., & Culajara, C. L. (2024). Social media usage, body image, and psychological well being among college students. *Asian Journal of Education and Social Studies*, 50(6), 451–470. <https://doi.org/10.9734/ajess/2024/v50i61425>
- Dewi, I., Kasturi, T., & Purwandari, E. (2024). The role of social media on subjective well being of adolescents: A systematic literature review. *Journal of Educational, Health and Community Psychology*, 13(1), 152–169. <https://doi.org/10.12928/jehcp.v13i1>
- Ghozali, G., Fatma, F., & Oktaviani, L. W. (2024). Relationship between social media addiction and anxiety among junior high school students. *Indonesian Journal of Global Health Research*, 6(S4), 191–202. <https://doi.org/10.37287/ijghr.v6iS4>
- Muhammad Yassir, Isnani (2022). *Socialization of Teenage Marriage Prevention to Avoid the Influence of Divorce at Sman 1 Kutacane*, Jurnal Solusi Masyarakat Dikara. Volume 2, No. 2 Accessed <http://jsmd.dikara.org/jsmd/article/view/27>
- Muhammad Yassir, Suryani (2021). *Audio Visual Media on Improving Learning Outcomes and Student Responses on the Concept of Photosynthesis in Class VIII at MTSN Lawe Sigala-Gala, Deleng Pokhkisen District, Southeast Aceh Regency*, Scientific Journal on Informatics, Education and Management. Volume 3 No 2, Publisher STMIK Indonesia Banda Aceh accessed at <https://garuda.kemdikbud.go.id/author/view/2448034>
- Nursafiah, Rika Aswarita, Muhammad Yassir, Rima Melati (2020). *The Effect of the PBL (Problem Based Learning) Learning Model on Students' Science Process Skills on Environmental Pollution Material for Class X of Sma Negeri 1 Kutacane*. Indonesian Language and Literature Education Journal, Volume 5, No. 1. Publisher: Faculty of Teacher Training and Education, University of North Sumatra, Accessed <https://jurnal.uisu.ac.id/index.php/Bahastra/article/view/5584>
- O'Reilly, M., Dogra, N., Whiteman, N., Hughes, J., Eruyar, S., & Reilly, P. (2018). Is social media bad for mental health and wellbeing? Exploring the perspectives of adolescents. *Clinical Child Psychology and Psychiatry*, 23(4), 601–613. <https://doi.org/10.1177/1359104518775154>
- Purboningsih, E. R., Massar, K., Hinduan, Z. R., Agustiani, H., Ruitier, R. A. C., & Verduyn, P. (2023). Perception and use of social media by Indonesian adolescents and parents: A qualitative study. *Frontiers in Psychology*, 13, Article 985112. <https://doi.org/10.3389/fpsyg.2022.985112>
- Saputra, N. M. A., Muslihati, Ramli, M., Sobri, A. Y., Madihie, A., & Fitriyah, F. K. (2024). Digital literacy as an indicator of adolescent mental health and implementation for the role of school counselor: A systematic literature review. *South Eastern European Journal of Public Health*, 221–234. <https://doi.org/10.70135/seejph.vi.841>
- Zani, B. N., Mohd Said, F., Nambiar, N., & Sholihat, S. (2024). The relationship between social media dependency, mental health, and academic performance among adolescents in Indonesia. *International Journal of Biotechnology and Biomedicine (IJBB)*, 1(2), 24–32. <https://doi.org/10.31674/ijbb.2024.v01i02.003>