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Digital Literacy Among Communication Studies Students in Denpasar in the Age of Deepfakes

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ABSTRACT
The rapid advancement of digital technology and artificial intelligence has reshaped the landscape of mass communication, transforming audiences from passive recipients into active content producers. This shift has heightened both the opportunities and the risks associated with digital media use, particularly with the emergence of deepfake technology—AI-generated audio or video designed to mimic real individuals. Deepfakes have introduced new challenges related to misinformation, reputational harm, privacy violations, and declining public trust. In this context, digital literacy becomes essential, especially for Communication Science students who occupy a strategic position as both active media users and future information gatekeepers. This study investigates the digital literacy of Communication Science students in Denpasar in responding to deepfake phenomena. Using a descriptive qualitative method, data were collected through observations, semi-structured interviews, and documentation to explore students' skills, critical understanding, ethical awareness, and participation in digital environments. The findings reveal that students possess strong digital literacy in terms of technical ability, critical evaluation of information, and ethical considerations when engaging with digital content. However, their involvement in digital literacy advocacy remains limited, indicating the need for more structured educational initiatives. Overall, the study highlights the importance of integrating deepfake awareness and ethical digital literacy into communication education to strengthen students' resilience against AI-driven media manipulation and to promote a more responsible and informed digital society.

Keywords: Digital Literacy; Deepfake; Communication Science Students; Media Ethics; Critical Understanding; Artificial Intelligence; Digital Manipulation; Misinformation; Social Media; Digital Participation.

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INTRODUCTION
The landscape of mass communication has evolved in tandem with the rapid advancement of communication technologies. Mass communication has undergone profound transformation as information and communication technologies continue to develop in the digital era (Hasan et al., 2023). The shift from conventional media to digital platforms has reshaped how individuals access, process, and disseminate information. Whereas audiences in the past functioned merely as passive receivers, today anyone can act as both a producer and distributor of messages through various digital platforms (Purwati & Widaningsih, 2025). This transformation is marked by the increasing use of the internet, the rise of artificial intelligence (AI), and the proliferation of social media, all of which facilitate the rapid and massive production and distribution of content.

Data from the Ministry of Communication and Informatics and the Indonesian Internet Service Providers Association indicate that there were 196.7 million internet users in Indonesia in 2020, a number projected to increase to 278.7 million by 2023 before decreasing to 221.5 million in 2024 (Israniа et al., 2025). These figures illustrate that digital spaces have become an integral part of Indonesian society, particularly among university students one of the most active groups engaging with digital media.

Figure 1 Data on Internet Users in Indonesia in 2025

Pengguna Internet di Indonesia

TAHUN	PENGGUNA INTERNET
2020	196.710.000
2021	210.000.000
2022	215.630.000
2023	278.696.200
2024	221.560.000

Sumber: Asosiasi Penyelenggara Internet Indonesia dan Kemenkominfo

This significant shift has not only introduced greater convenience but has also generated new challenges within the mass communication ecosystem. Digital media is now saturated with content that spreads rapidly, evokes emotional responses, and in many cases carries manipulative elements (Desiana, 2025). One of the most alarming forms of digital manipulation is deepfake technology AI-generated audio or video that convincingly mimics real individuals (Fitri & Hidayah, 2025). While deepfakes can be used creatively for entertainment, their presence in public communication raises concerns regarding disinformation, reputational harm, and declining trust in media. As the boundary between authentic and fabricated content becomes increasingly blurred, individuals' ability to critically evaluate the credibility of information becomes crucial. This is where the urgency of digital literacy becomes evident, especially for Communication Science students who study media academically and have the potential to become future information gatekeepers.

According to reports from the Deputy Minister of Communication and Digital Affairs, deepfake cases in Indonesia have surged by 550% since 2019, with 90% of these cases associated with harmful purposes such as disinformation, non-consensual pornography, and political manipulation (Hutasoit, 2025). This trend suggests that society's digital literacy particularly among young people and students has yet to keep pace with the rapid development of digital technologies. Such conditions signal a critical warning for educational institutions to prioritize comprehensive and ethical digital literacy education. Strengthening digital literacy is essential not only to equip students in Denpasar with the ability to utilize technology responsibly but also to position them as key actors in preventing the misuse of deepfake technology while fostering a smarter, more critical, and more responsible digital ecosystem.

The widespread use of digital technologies also brings heightened risks related to security, trust, and content authenticity, including those linked to deepfakes. For instance, data from the National Commission on Violence Against Women (Komnas Perempuan) show significant increases in public and state-level violence against women, with digital sexual violence rising by 35%. A portion of these cases involved manipulated images or voices produced using AI (Haefani & Mulyanti, 2025). These findings underscore that deepfake technology is not merely a technological challenge but a social issue that threatens individual trust, privacy, and dignity. Consequently, digital literacy becomes an urgent necessity, enabling society—especially younger generations—to recognize, reject, and counteract digital manipulation that may violate ethical and human rights standards.

The motivations behind digital media use extend beyond the search for information; individuals increasingly seek entertainment, social interaction, and self-expression. With easy access through mobile devices, anyone can create, edit, and share content within seconds. This dynamic environment alters communication patterns, often prioritizing speed over accuracy and emotional appeal over factual clarity. Communication Science students occupy a unique position within this landscape: they are active consumers of digital content and future media producers who will shape public information. Therefore, their level of digital literacy—which encompasses critical thinking, media ethics, and technical skills—is a key factor in maintaining the integrity of communication in an increasingly complex digital environment.

Existing research highlights the importance of digital literacy among university students. National studies conducted by the Ministry of Communication and Informatics in collaboration with universities reveal that Indonesian students' digital literacy levels remain moderate, particularly in areas such as digital security and information verification (Falembanica, 2025). Other studies demonstrate a correlation between digital literacy and individuals' ability to detect deepfake content; students with higher literacy tend to be more critical of manipulative content, while those with lower levels are more easily deceived by convincing fabricated videos (Nika Balun et al., 2025).

However, despite these findings, several research gaps remain. First, much of the existing research on digital literacy in Indonesia remains general and does not examine deepfake phenomena in depth, especially among Communication Science students who directly engage with media studies. Second, current studies often emphasize technical aspects of digital literacy, such as app usage and cybersecurity, but do not comprehensively measure critical, ethical, and cognitive dimensions related to AI-driven manipulation. Third, research focusing on specific local contexts—such as Denpasar—is still limited, even though regional differences in media culture and information consumption likely influence digital literacy. Students in Denpasar, for example, live within a unique sociocultural context shaped by Balinese communication traditions, which may affect how they engage with digital information.

Given these conditions, the study titled **"Digital Literacy of Communication Science Students in Denpasar City in the Deepfake Era"** becomes essential. This research aims to explore the extent to which students can identify and respond to AI-based digital manipulation and how their level of digital literacy contributes to strengthening information resilience within academic and social environments. Beyond its theoretical contribution to the study of digital literacy and mass communication, this research is expected to provide practical recommendations for universities and local policymakers in designing media education strategies that address contemporary digital challenges—particularly the growing prevalence of deepfakes that increasingly blur the line between reality and fabrication.

METHOD

This study employs a descriptive qualitative method to explore how Communication Science students in Denpasar develop and apply digital literacy in responding to deepfake phenomena in the digital era. Using a qualitative approach—where the researcher acts as the key instrument, data are collected through triangulation, and analysis is conducted inductively—the research seeks to understand students' perceptions, experiences, and critical abilities in identifying and interpreting AI-manipulated content. Data were gathered through non-participatory observation, semi-structured interviews with students, academic advisors, and digital communication practitioners, as well as documentation of written materials, images, videos, and relevant digital content. These techniques allowed the researcher to capture students' real-life interactions with digital media, including their awareness of deepfake risks, strategies for verifying information, and ethical considerations in online behavior. Informants were selected using purposive sampling to ensure that participants possessed relevant knowledge and engagement with the research focus. Overall, this methodological design provides a contextual and holistic understanding of digital literacy among Communication Science students as they navigate the challenges of AI-driven manipulation in contemporary media environments.

FINDING AND DISCUSSION

The interview findings indicate that students of Communication Studies in Denpasar generally possess a strong level of digital literacy, particularly in their daily use of digital technologies and social media. Most participants expressed confidence in navigating various digital platforms for information-seeking, communication, learning, and work-related activities. This competence reflects the **skills pillar** of digital literacy, showing that students are not only familiar with digital tools but also capable of adapting to emerging technologies, including artificial intelligence–based systems such as deepfake. Although none of them have directly used deepfake tools, they demonstrated a

sufficient conceptual understanding of how the technology works and recognized both its beneficial and harmful potentials.

In terms of **critical understanding**, the participants reported using multiple verification strategies to distinguish authentic from manipulated digital content. These strategies include checking the credibility of sources, comparing information across reputable media outlets, and utilizing tools such as reverse image search. Their responses highlight a strong awareness of the growing prevalence of misleading or fabricated content in the digital environment, as well as an understanding of the need for careful evaluation before sharing information. This suggests that students already apply a cautious and analytical approach when encountering suspicious digital materials, including potential cases of deepfake manipulation.

Regarding the **ethics pillar**, the interviewees emphasized the importance of responsible behavior when disseminating content on social media. They highlighted several ethical considerations, such as respecting privacy, ensuring factual accuracy, avoiding harmful or provocative content, and being mindful of the consequences of sharing unverified information. Participants also expressed concern about the misuse of deepfake technology for harmful purposes, acknowledging risks such as reputation damage, misinformation, and the erosion of public trust. Their perspectives indicate that ethical awareness is an essential component of digital literacy, especially as deepfake technology becomes increasingly sophisticated and accessible.

Finally, within the **participation pillar**, the participants reported limited direct involvement in digital literacy or public education initiatives. However, they expressed interest in contributing to such efforts in the future. They also recognized the potential role of Communication Studies students in fostering a safer and more responsible digital environment. This includes promoting digital literacy among peers and the broader community, producing ethical and fact-based digital content, and encouraging critical awareness about media manipulation. Their responses suggest an understanding that students are not only consumers of digital media but also potential agents of positive change in addressing the challenges posed by deepfake technology.

Overall, the results demonstrate that students possess a solid foundation of digital literacy across the four key pillars: skills, critical understanding, ethics, and participation. However, there remains a need to strengthen practical engagement and involvement in digital literacy initiatives. These findings underline the importance of integrating deepfake awareness and ethical media literacy into communication education, ensuring that students are equipped to navigate and respond to increasingly complex digital communication landscapes.

CONCLUSIONS

The findings of this study indicate that Communication Studies students in Denpasar possess a strong foundational level of digital literacy, particularly in their ability to use digital tools and navigate social media platforms in daily life. They demonstrate confidence and adaptability in engaging with digital technologies, including an understanding of emerging AI-based systems such as deepfake. Although their experience with deepfake technology remains conceptual rather than practical, their awareness of its functions, benefits, and potential risks shows that they are capable of recognizing the broader implications of technological advancement in the digital communication landscape.

In addition to these technical skills, the students exhibit a high degree of critical awareness when evaluating online content. They rely on verification strategies—such as checking sources, comparing information across media, and using tools like reverse image search—to determine the authenticity of digital materials. Their ability to identify signs of manipulation and their cautious approach toward suspicious content reflect a mature understanding of the challenges posed by misinformation, including deepfake-generated media. Furthermore, their emphasis on ethical considerations highlights an awareness that responsible communication practices are essential to maintaining trust and safety in digital environments.

However, despite their strong skills and awareness, the students' participation in digital literacy initiatives remains limited. While they express willingness to contribute, they have not yet

translated this intention into active involvement. This gap suggests that although students recognize their responsibilities as future communication professionals, they require more structured opportunities and encouragement to engage in digital literacy advocacy. Overall, the study concludes that while their digital literacy across the four pillars—skills, critical understanding, ethics, and participation—is well developed, further efforts are needed to strengthen practical engagement and prepare students to navigate and address the growing challenges posed by deepfake technology.

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