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ARTIFICIAL INTELLIGENCE (AI) BASED DIGITAL COMMUNICATION STRATEGY TO IMPROVE STUDENTS' MENTAL HEALTH LITERACY IN STRENGTHENING THE COMPETITIVENESS OF SUPERIOR HUMAN RESOURCES

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Abstract

Research is motivated by the continued need to strengthen students' mental health literacy amidst the increasing use of digital media and *Artificial Intelligence* (AI) as sources of information. This study aims to analyze the level of students' mental health literacy, barriers to accessing information and professional assistance, digital media usage patterns, students' perceptions and experiences in using AI, and formulate AI-based digital communication strategies to improve students' mental health literacy. The study used a qualitative approach involving students as *Focus Group Discussion* (FGD) participants, psychologists, and communication practitioners. Data were collected through FGDs and in-depth interviews, then analyzed through the stages of *data collection, data reduction, data display,* and *conclusion drawing,* and strengthened through source triangulation. The results show that students already have a basic understanding of mental health, but still need to be strengthened in understanding psychological conditions, recognizing the need for professional assistance, selecting credible information sources, and reducing stigma. Digital media is a source of easily accessible information, while AI is seen as having advantages in speed, convenience, flexibility, and interactivity, but still raises concerns about accuracy, credibility, data security, and the limitations of AI. Based on the synthesis of findings, five AI-based digital communication strategies were formulated: personalized mental health communication, multi-platform digital communication, AI-based interactive messaging, educational communication to reduce stigma and increase mental health literacy, and strengthening information credibility. This research confirms that AI has the potential to be a supporting medium for student mental health communication, not a substitute for professional staff.

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1. INTRODUCTION

Mental health issues have become a public health challenge, SKI 2023 data revealed that the 15–24 year old age group had the highest prevalence of depression (2.0%), but was the least likely to seek professional help (10.4%), with the prevalence of mental health problems reaching 2.8%, and even 0.39% of them had thoughts of ending their lives, indicating high levels of mental stress in this age group (Kemenkes BKPK, n.d.). The student and young adult population is among the most vulnerable groups (Ihsanuddin & Kurniawan, 2025). Therefore, mental health disorders in students are a real barrier to

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academic performance and quality of life, making rapid and measurable interventions urgent (Zebua, 2025).

The high prevalence of mental health problems is not matched by adequate service availability and accessibility. Traditional face-to-face psychotherapy services face significant challenges, including a shortage of professionals, long waiting times, and stigma that discourages individuals from seeking help. This service gap is exacerbated by low mental health literacy among college students. Mental health literacy can be defined as the knowledge and beliefs about mental disorders that aid in their recognition, management, and prevention (Handayani et al., 2020). Low literacy makes it difficult for college students to recognize symptoms, understand the importance of treatment, and ultimately delay or avoid seeking professional help. Research shows that most current Smart Health Education mental health interventions predominantly target adolescents and young adults, underscoring the need to improve literacy in this group (Friadi et al., 2025; Mahmudah & Santoso, 2025).

To bridge the gap in access and literacy, Artificial Intelligence (AI)-based digital communication technology has emerged as an innovative and scalable solution. AI has been proven to expand access to mental health services, improve the efficiency of screening and monitoring processes, and provide real-time psychological support through chatbots, NLP, and predictive models (Ni & Jia, 2025). Various studies have shown that AI-based interventions increase user engagement and help reduce access barriers such as stigma and limited professional staff. This reinforces the urgency of utilizing AI in digital communication strategies for mental health education, especially for students who are very close to digital technology (Bao et al., 2024; Harahap et al., 2024; Khairan & Habib, 2025; Zebua et al., 2026).

The development of superior and competitive human resources (HR) is a primary focus of national development. The quality of superior HR is not only measured by cognitive competence, but also by mental and psychological resilience. Students who have good mental health literacy will be able to manage academic pressure, build resilience, and maintain optimal productivity—critical factors for competitiveness. The use of AI in mental health education (referred to as Smart Health Education) is considered a necessity to provide technological solutions for adolescents in their developmental phase (Grace et al., 2020). Improving the quality of psychological education for students through AI communication strategies is not only support, but also a strategic investment in ensuring the mental readiness of prospective superior workers in the era of digital disruption (Hao et al., 2025).

Therefore, this researcher aims to formulate an effective AI-based digital communication strategy to improve mental health literacy in order to realize superior human resources, so as to be able to solve problems related to the National Research Master Plan in the focus areas of Health and social humanities which emphasize the development of information technology, public health, and improving the quality of human resources through the use of AI-based digital innovation (Kementerian Riset, P. T., 2017). In addition, this research supports the mandate of the Government's Asta Cita, especially in efforts to strengthen the development of human resources (HR), science, technology, education and health (Direktorat Jenderal Riset dan Pengembangan Kementerian Pendidikan Tinggi Sains dan Teknologi, 2026).

2. RESEARCH METHOD

This study uses a descriptive qualitative approach, which aims to explore in depth the needs, perceptions, and experiences of students related to digital communication and the potential use of Artificial Intelligence (AI) in improving mental health literacy. Data collection was carried out through Focus Group Discussion (FGD) techniques. The main data sources of the study came from FGDs with students (8 people) and in-depth interviews with two expert informants, namely a psychologist (1 person) and a communication practitioner (1 person). Data analysis used the interactive model of Miles and Huberman (in Sugiyono, 2019) which consists of four stages: data collection, data reduction, data display, and conclusion drawing, which was strengthened by a source triangulation process

3. RESULT AND ANALYSIS

Student Mental Health Literacy

The research results indicate that students have initial knowledge and awareness of mental health, but this literacy level is not yet optimal. Students are able to recognize a number of issues related to psychological conditions and mental health, but still have limitations in understanding various

conditions in greater depth, differentiating psychological conditions, understanding professional services, and evaluating the credibility of information obtained from various sources.

The FGD results also revealed a persistent lack of understanding of mental health, including a tendency to associate mental health with mental disorders. Psychologists' perspectives reinforced these findings by emphasizing the importance of a proper understanding of psychological conditions and students' ability to understand the context of mental health information. Meanwhile, communication practitioners emphasized the need for relevant, clear, easy-to-understand, and credible information. Thus, students' literacy needs relate not only to the availability of information but also to the ability to understand, evaluate, and use it appropriately.

Barriers to Access to Information and Professional Assistance

Research findings indicate that students have relatively easy access to mental health information through digital media, but there remains a gap between the availability of information and the decision to seek professional help. Barriers identified include stigma surrounding mental health and psychology, shame and fear of judgment, concerns about confidentiality, a tendency to seek support from friends or family first, and limited knowledge about professional services.

From a student's perspective, close contacts, such as friends and family, tend to be the first source of support because they are perceived as more convenient and accessible. Psychologists identify stigma, fear, shame, concerns about confidentiality, and perceived cost as factors that can hinder access to professional services. Meanwhile, communication practitioners add that the way information is delivered also plays a role. Messages that are too general, too academic, or not engaging enough can result in information being overlooked or discourage students from taking further action.

Digital Media Usage Patterns

The research results show that students have a multi-platform, dynamic, and needs-based digital media usage pattern. They use digital media to seek mental health information, considering the format of the information, ease of access, and platform characteristics. Students don't rely on a single medium but can switch between platforms according to their information needs.

The findings also suggest that mental health information via social media can be beneficial, but can also lead to confusion or overthinking if the information is not sourced clearly. Therefore, the use of various platforms requires careful attention to the quality and credibility of the information sources.

These media usage characteristics demonstrate the need to convey messages in various formats. The same information can be developed into short videos, infographics, articles, or interactive services, depending on the characteristics and functions of each platform. Thus, students' digital media usage patterns form the basis for developing multi-platform mental health communication.

Perceptions and Experiences of Using AI

Student perceptions of the use of AI to obtain mental health information tend to be positive but critical. AI is considered fast, practical, easy to use, efficient, and capable of providing more relevant answers to user questions. Students also believe AI can help broaden their perspectives and initial understanding of mental health.

In addition to speed and convenience, AI is perceived as providing a relatively more private space for students to ask personal questions. The ability to ask follow-up questions makes communication with AI more personal than with one-way communication channels. However, students continue to express concerns about the accuracy of information, the credibility of answers, the potential for dependency, data security, and the limitations of AI in addressing complex mental health issues.

Psychologists' perspectives emphasize that AI can be used as a means of education and initial information, but it should not replace professional assessment and intervention. Based on source triangulation, there is a consensus that AI has potential as a supporting medium for mental health communication, provided there is verification of information, clear boundaries of use, and connection to professional support.

AI-Based Digital Communication Strategy Formulation

Based on a synthesis of findings from students, psychologists, and communication practitioners, this study yielded five AI-based digital communication strategies. These five strategies combine student needs, mental health professional considerations, and the characteristics of digital communication.

No.	Strategy	Main Focus
1	AI-based personalized mental health communication	Adapt information to students' needs, questions, context, and level of understanding.
2	Digital multi-platform communication	Delivering information through various platforms and formats according to media and user characteristics.
3	AI-based interactive messaging	Develop two-way communication through more personalized responses, follow-up questions, and explanations.
4	Educational communication to reduce stigma and increase mental health literacy	Providing easy-to-understand information while increasing understanding and reducing stigma.
5	Strengthening the credibility of information	Ensure information is scientifically based, verifiable, transparent about AI limitations, and linked to professional sources.

All five strategies received strong support from all three groups of informants. The personalization and interactivity strategies received strong support because students needed tailored information, and AI was able to provide responses based on user queries. The education, stigma reduction, and credibility-building strategies also received strong support, while the multi-platform strategy received strong support based on students' digital media usage patterns.

Overall, the research findings suggest that AI has the potential to be used as a communication tool for supporting student mental health, particularly in providing initial information that is fast, accessible, personalized, and interactive. However, its use must be placed within a communication framework that prioritizes the credibility of the information and continues to connect students with professional support when needed.

Discussion

Student Mental Health Literacy

Research findings indicate that students have initial knowledge and awareness of mental health, but do not yet have a fully comprehensive understanding. Limitations are seen in their ability to understand psychological conditions more deeply, recognize conditions that require attention, understand help options, and evaluate the information obtained. This condition indicates that mental health literacy is not simply understood as the ability to know mental health terms or information, but also includes the ability to understand, assess, and use information to determine appropriate action.

These findings align with the systematic review by Reis et al. (2022), which showed that mental health literacy programs for college students generally focus on improving their knowledge, understanding, and ability to respond to mental health issues. However, variations in intervention and measurement methods suggest that developing mental health literacy requires a sustained approach. Özparlak et al. (2023) also demonstrated a relationship between mental health literacy and mental well-being and help-seeking behavior in young adults. Therefore, the findings of this study demonstrate that strengthening literacy has broader implications than simply increasing knowledge, as it can serve as a foundation for students to recognize problems and consider appropriate assistance.

These findings also demonstrate that increasing literacy through digital media needs to be implemented more comprehensively. A meta-analysis of digital mental health literacy interventions showed that digital interventions have an impact on improving mental health literacy outcomes (Nazari et al., 2023). However, research on web-based educational interventions indicates that increased knowledge does not always automatically result in changes in stigma or help-seeking intentions. Therefore, mental health communications to college students need to combine education, stigma reduction, information about support, and the ability to evaluate information, not simply increasing mental health content.

Barriers to Access to Information and Professional Assistance

Research has found a gap between the ease of accessing information and students' readiness to seek professional help. Although mental health information is relatively easy to find through digital

media, students still face challenges such as shame, stigma, concerns about others' judgment, secrecy, and a tendency to resolve problems independently or through support from loved ones.

These findings align with the systematic review by Lui et al. (2024), which identified self-reliance, stigma, low mental health literacy, and limited knowledge about symptoms and services as important barriers to college students' help-seeking. Conversely, mental health literacy and social support can be facilitating factors for help-seeking. These findings suggest that the availability of services is not enough to generate service utilization. College students need to know when help is needed, where to get it, and have the confidence and readiness to access it.

In the context of communication, this situation suggests that information about professional services needs to be part of mental health communication, not just additional information. Information about who to contact, consultation procedures, when to seek help, and guarantees of confidentiality should be conveyed simply and without fear. Thus, digital communication can serve as a bridge between mental health awareness and the decision to seek professional help.

Digital Media Usage Patterns

The digital media usage patterns of students in this study demonstrated multi-platform, dynamic, and needs-based characteristics. Students did not use a single medium for all information needs, but rather chose platforms based on the type of information and their current needs. This situation suggests that mental health communication is ineffective if it relies solely on a single platform or message format.

Research findings indicate that mental health messages can be developed in various formats, such as short videos to attract attention, infographics to simplify information, articles to provide more complete explanations, and interactive services to meet individual needs (Dondé et al., 2025). Thus, a multi-platform strategy is not simply about increasing communication channels, but rather organizing the function of each platform based on user characteristics and the type of message being conveyed.

However, widespread digital access also presents challenges in the form of information credibility. Mental health information obtained from social media can be helpful for students, but it also has the potential to cause confusion or overthinking when the source of the information is unclear (Nayla, 2024). Therefore, increasing digital access needs to go hand in hand with improving information literacy skills and strengthening the credibility of sources.

Perceptions and Experiences of Using AI

Students demonstrated positive but critical acceptance of AI. AI was perceived as accessible, fast, flexible, and capable of providing more tailored responses to user questions. These characteristics make AI a potential first point of contact for students seeking information about mental health or not yet ready to communicate directly with a professional.

These findings align with research on automated conversational agents, which demonstrates the potential of conversational agents as a digital approach to supporting youth mental health, particularly due to their accessibility and interactive characteristics (Götzl et al., 2022). However, evidence regarding their effectiveness and applicability is still evolving, so their use needs to consider user characteristics and the context of use. Students continue to consider information accuracy, data security, source credibility, and the AI's ability to understand complex issues. These findings align with studies on conversational AI, which show that privacy, security, and trust are important constructs in the acceptance of conversational technology. Therefore, AI in mental health communication is more appropriately positioned as a medium to support information and initial communication, while assessment and treatment still require professional expertise.

AI-Based Digital Communication Strategy

First, AI-based communication personalization is necessary because students' mental health information needs are individualized. AI allows information to be tailored to the user's questions, context, language, and needs (Harland et al., 2025). Research findings indicate that students perceive AI's advantage in its ability to provide responses based on the questions asked, so communication is no longer entirely general and one-way.

Second, multi-platform digital communication is necessary because students' media usage patterns are diverse. Each platform can have different functions, so communication strategies need to adapt message formats to the characteristics of the media (Harland et al., 2025). This strategy allows mental health information to reach students through multiple touchpoints without altering the scientific substance of the message.

Third, AI-based interactive messaging is relevant because students need not only information but also the opportunity to ask questions and obtain further explanations. AI enables more responsive, dialogic communication. However, this interactivity must be accompanied by clear boundaries of use so that the AI does not appear to be a psychologist, provide a definitive diagnosis, or replace professional assessment (Clark, 2025).

Fourth, educational communication to reduce stigma and improve mental health literacy is needed because findings indicate that students still have conceptual gaps and stigma barriers. Educational strategies are not enough to simply explain the definition of mental health, but also need to help students understand psychological conditions, understand support options, and view seeking help as a normal action. Previous research findings also indicate that increasing knowledge through digital interventions has not always been followed by changes in stigma and help-seeking, so educational aspects need to be combined with stigma reduction and service information (Wahyuni & Triyanto, 2026).

Fifth, strengthening the credibility of information is the foundation of the entire strategy. The ease and ability of AI to generate rapid responses does not automatically guarantee the accuracy of the information. Therefore, AI-based mental health communication needs to be supported by expert validation, scientific and official sources, transparency regarding AI's limitations, privacy protection, and referral mechanisms to professionals (Sitanggang et al., 2025).

Thus, the primary contribution of this study lies in the integration of five communication strategies that link students' mental health literacy needs with the characteristics of digital communication and the capabilities of AI. AI is not positioned as a replacement for psychologists, but rather as an instrument to expand access, provide more personalized and interactive information, and direct students to credible sources of information and support. This position aligns with triangulation results, which indicate that students, psychologists, and communication practitioners all support the use of AI while maintaining the role of professional resources.

4. CONCLUSION

Students' mental health literacy has essentially been established at a basic level, but still requires strengthening, particularly in understanding information more deeply, recognizing conditions that require professional assistance, selecting appropriate information sources, and reducing stigma around mental health issues. In the process of obtaining information, students utilize various digital platforms, including AI, because they offer fast, practical, flexible, and interactive access. AI-based digital communication strategies to support improving students' mental health literacy include AI-based personalized mental health communication, multi-platform digital communication, AI-based interactive messaging, educational communication to reduce stigma and increase mental health literacy, and strengthening the credibility of information. These five strategies complement each other by positioning students as primary users, AI as a supporting medium, various digital platforms as communication channels, and professionals as referrals for needs requiring further treatment

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