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Perception of Literacy and the Benefits of Generative Artificial Intelligence in Lectures: A Student's Perspective

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ABSTRAK

Penelitian kualitatif deskriptif ini bertujuan untuk menggambarkan persepsi mahasiswa tentang literasi dan manfaat penggunaan Kecerdasan Buatan Generatif (GenAI) dalam kegiatan akademik. Melalui kuesioner terbuka kepada delapan informan dan model analisis data interaktif, studi ini mengidentifikasi empat tema utama: memahami AI sebagai teknologi cerdas, penggunaan GenAI untuk mendukung pemahaman materi dan penyelesaian tugas, munculnya literasi kritis melalui verifikasi informasi, dan kesadaran akan risiko ketergantungan. Mahasiswa umumnya memandang GenAI secara positif karena efisiensinya dalam berbagai tugas fungsional seperti merangkum ide, mencari ide, dan menerjemahkan teks. Meskipun beberapa mahasiswa mulai menyadari perlunya memvalidasi output AI, temuan ini menegaskan bahwa literasi AI mahasiswa masih didominasi oleh aspek fungsional, sementara dimensi konseptual, kritis, dan reflektif belum berkembang secara optimal. Oleh karena itu, integrasi AI dalam pembelajaran di pendidikan tinggi harus diseimbangkan dengan memperkuat keterampilan evaluasi informasi, keterampilan penyusunan cepat, berpikir kritis, dan menanamkan integritas akademik agar teknologi digunakan secara bertanggung jawab.

Kata kunci: kecerdasan buatan, AI generatif, literasi AI, mahasiswa, pendidikan tinggi, pembelajaran

ABSTRACT

This descriptive qualitative research aims to describe students' perceptions of literacy and the benefits of using Generative Artificial Intelligence (GenAI) in academic activities. Through an open-ended questionnaire to eight informants and an interactive data analysis model, this study identifies four main themes: understanding AI as an intelligent technology, the use of GenAI to support material understanding and task completion, the emergence of critical literacy through information verification, and awareness of the risk of dependency. Students generally perceive GenAI positively because of its efficiency in various functional tasks such as summarizing ideas, finding ideas, and translating texts. Although some students are beginning to realize the need to validate AI outputs, the findings confirm that students' AI literacy is still dominated by functional aspects, while the conceptual, critical, and reflective dimensions have not developed optimally. Therefore, the integration of AI in learning in higher education must be balanced with strengthening information evaluation skills, prompt drafting skills, critical thinking, and instilling academic integrity so that technology is used responsibly.

Keywords: *artificial intelligence, generative AI, AI literacy, students, higher education, learning*

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INTRODUCTION

The advancement of Artificial Intelligence (AI) has brought increasingly real changes in higher education. This transformation has become even more significant with the presence of Generative Artificial Intelligence (GenAI), which is a form of AI technology that is able to generate text, images, code, summaries, questions, and various forms of new content based on user instructions. Applications such as ChatGPT, Gemini, NotebookLM, and various other GenAI platforms are now relatively accessible to students and are used to support various academic activities.

In the college environment, these changes have given rise to new ways for students to access study aids. Students can ask GenAI questions, ask for explanations in simpler language, ask for summaries of reading materials, look for ideas for assignments, improve grammar, translate texts, create practice questions, or compose presentation materials. As a result, GenAI is no longer seen as just a technology used by computer experts but has become an integral part of the student learning environment.

Studies on the use of GenAI in higher education show that this technology is applied for various academic purposes. Through a systematic literature review, Baig and Yadegaridehkordi (2024) show that ChatGPT is used in various higher education contexts, including language learning, communication, writing, translation, personal learning, and collaboration. Bhullar et al. (2024) also indicate that research on ChatGPT in universities develops around the themes of learning, student engagement, learning environment, and academic integrity. Chan and Hu (2023) specifically examined students' perceptions of GenAI and found that students identified various benefits and challenges related to the use of the technology. These findings are crucial because they reveal that students' perceptions are not entirely positive or negative; they acknowledge the benefits of GenAI while still being aware of its limitations.

Other research shows that the benefits of GenAI can also be related to learning outcomes, as evidenced by Deng et al. (2024), who found that the use of ChatGPT is associated with improvements in several academic, affective-motivational, and high-level thinking skills. However, this does not mean that the use of GenAI automatically improves the quality of learning, because the impact of technology is strongly influenced by instructional design, the purpose of use, the type of assignment, and how students interact with the technology. Furthermore, recent systematic reviews reinforce the importance of this usage context; for instance, An et al. (2026) found that students utilize GenAI through a

variety of usage patterns, causing the learning outcomes reported in empirical studies to be inconsistent. Consequently, Liu and Zhong (2025) suggest that the successful integration of GenAI into student learning requires careful attention to the pedagogical context and teacher competence, rather than simply providing access to the technology.

In the Indonesian context, the use of GenAI in universities is becoming increasingly significant. Through a study involving 1,117 students in Indonesia, Salloum et al. (2023) proved that the conditions for enabling (*facilitating conditions*) for the use of technology is a crucial factor that affects students' intentions in using ChatGPT, where the intention of use is related to the actual use. Recent qualitative research by Rahiem (2026) provides highly relevant evidence for this study. Involving 131 students from a university in Jakarta, the study identified three main themes regarding the use of GenAI: as academic aid, for academic skill development, and for learning effectiveness. The students primarily use GenAI to quickly obtain information, create summaries, improve their writing, create practice questions, and organize learning activities. At the same time, students expressed concerns about overdependence, decreased critical thinking skills, and academic integrity issues.

AI Literacy as a Crucial Competency

The increased use of GenAI raises fundamental questions about AI literacy. The ability to access and use ChatGPT does not automatically indicate that students have adequate AI literacy. This literacy includes understanding AI, using AI, evaluating AI outputs, and awareness of the ethical implications of its use. Mansoor et al. (2024) describe AI literacy as a competency that includes the dimensions of understanding, using, evaluating, and ethical AI. In their study involving 1,800 students from four countries, it was found that differences in AI literacy levels by country, field of specialization, and level of education were found, which shows that AI literacy is influenced by the educational context and user experience.

In his systematic review, Lintner (2024) indicates that instruments for measuring AI literacy have diverse constructs. This emphasizes that AI literacy is not a single ability, but a multidimensional construct. In addition, Stolpe and Hallström (2024) emphasize that AI education should not focus solely on technical abilities. Students need to understand what AI can and cannot do, as well as how AI should be used in the context of education.

The development of AI literacy in the university environment requires a harmonious synergy between human cognitive capacity and technological excellence. Tzirides et al. (2024) support an approach that combines human and AI capabilities in developing AI literacy in higher education. This perspective is important because the goal of AI literacy is

not to replace human capabilities with technology, but to help humans interact with technology more effectively and critically. Recent research by Susanto (2026) even linked GenAI literacy to mindful learning engagement, academic integrity, and critical thinking. These findings show that GenAI literacy needs to be understood in technical, ethical, and reflective dimensions. Nie et al. (2026) also develop generative AI assessment literacy, which includes the ability to understand criteria, determine the appropriateness of using AI, conduct verification, maintain ethical attribution and academic integrity, and use feedback to improve work. Therefore, the ability to evaluate AI output is a crucial component in academic AI literacy. Strengthening multidimensional AI literacy is essential to produce an academic community that is not only skilled in utilizing technology, but also remains critical, ethical, and responsible.

Benefits and Risks of GenAI

Various literature shows that GenAI offers several benefits for students. Rasul et al. (2023) identified the benefits of ChatGPT in higher education, including learning support, writing assistance, and increased productivity. Mohebi (2024) also proves that ChatGPT can provide various opportunities to support the learning process. Nevertheless, these benefits must be understood side by side with the risks. Through a systematic review, Lo et al. (2024) indicate that ChatGPT may be related to increased engagement (*engagement*) students but can also trigger forms of *disengagement* and academic integrity issues.

In another study, through *a systematic mapping review*, Yusuf et al. (2024) also found that GenAI's research in education includes two main groups of issues: pedagogical opportunities and productivity on the one hand, and ethical and integrity risks on the other. Thus, research questions should not just ask whether students use AI. No less important is to understand how students understand AI, why they use it, the benefits they feel, how they evaluate AI output, and their views on the risks of using it.

Research Objectives

This study aims to describe students' perceptions of literacy and the benefits of using AI in lecture activities. In particular, this study seeks to answer the following questions:

1. How do students understand GenAI?
2. What are the benefits of GenAI that students feel in lecture activities?
3. How do students evaluate the information or outputs provided by GenAI?
4. How do students view the risk of dependency and the responsible use of GenAI?

METHOD

Research Design

This study uses a descriptive qualitative approach (Sandelowski, 2000) because it aims to understand students' perceptions based on their experiences and views expressed through open answers. The data analysis in this study follows the Miles, Huberman, and Saldaña (2014) model, which consists of three main activities: *data condensation*, *data display*, and *conclusion drawing/verification*. In this study, the analysis process was carried out interactively through data reading, code, code grouping, category formation, theme identification, and re-verification of themes based on evidence in the data.

The study involved eight students who were given the codes I1 to I8. The use of codes was carried out to maintain the confidentiality of the informant's identity. Of the eight informants, seven were women and one was male. The age of the informants ranged from 19–24 years old. Four informants were third-year students and the other four were fourth-year students who were registered in the first semester of 2026-2027.

Table 1. Informant Demography

Informant Code	Gender	Age	Study Programs	Year of Study
I1	Women	20	English Language Education	4
I2	Women	20	Religious Education	3
I3	Women	24	English Language Education	4
I4	Male	20	English Language Education	3
I5	Women	22	Economic Education	4
I6	Women	19	English Language Education	3
I7	Women	23	English Language Education	4
I8	Women	24	English Language Education	3

Data Collection

Data was obtained through questionnaires that contained open-ended questions. These questions are about students' understanding of GenAI, the benefits of GenAI, the reasons for using GenAI, the applications of GenAI used, the form of use in learning, and students' views on the limitations and risks of GenAI. Because the data came from a written questionnaire, the term used in this study was the informant's written answer or a written data citation, not an interview transcript.

Data Analysis

The analysis is carried out in several stages. In the first stage, all the answers are read to understand the overall context. In the second stage, the units of meaning are coded. The codes that have similar meanings are then grouped into categories. Next, the categories are compared between informants to find repeating patterns. In the final stage, the patterns are developed into themes and re-verified using informant citations.

The analysis yielded 24 initial codes, including: GenAI as an intelligent technology, GenAI as an imitation of human capabilities, GenAI as a learning tool, quick access to information, ease of learning, understanding difficult material, simple explanations, task support, answer search, article search, summary, ideas/outlines, presentation, language correction, translation, practice questions, efficiency, ease of access, information verification, invalid information, prompt use, dependence, reduced independent thinking, and wise use of GenAI. The code was then consolidated into four themes.

RESULTS AND DISCUSSIONS

Results

In the process of analyzing the informant's answer data on the questionnaire, four main themes were found in the student's perspective regarding literacy and the benefits of using GenAI in learning. The four themes show the development of students' understanding from just using GenAI to the ability to evaluate and control its use.

The questions asked to the students use the term "generative artificial intelligence" when referring to the type of AI technology being studied. However, when answering the questions, the students repeatedly and continuously use the term "artificial intelligence" or "AI" to refer to the term "generative artificial intelligence" or "GenAI" used in this study. It shows that the students blur the definition concepts of AI and GenAI. Because of this, they mostly used the term "AI" in their answers.

Table 2. Informant Answer Theme

Theme	Description	Informant Evidence
1	GenAI as an intelligent technology and learning tool	I1–I8
2	Benefits of GenAI for understanding material and completing tasks	I1–I8
3	Critical literacy through information verification and prompts	I2, I3, I5, I6
4	Awareness of dependency and responsible use	I2, I5, I6

Theme 1: GenAI is Understood as an Intelligent Technology and Learning Tool

The first theme shows that students have different understandings in defining GenAI. Some provide conceptual definitions, while others explain GenAI based on its practical functions.

I1 provides a relatively conceptual definition:

"AI is a technology that allows machines or computers to mimic human thinking, learning, and problem-solving." (I1)

The definition shows that I1 understands AI as a technology that seeks to mimic human cognitive abilities.

A broader understanding is seen in I8:

"AI is a computer technology that mimics human cognitive abilities such as learning, understanding, reasoning, problem-solving, and decision-making." (I8)

I8 also understands the characteristics of GenAI:

"Generative AI can generate text, images, code, summaries, practice questions, and new content based on instructions." (I8)

Instead, I3 gives a very brief definition:

"AI is artificial intelligence." (I3)

I6 emphasizes more functional characteristics:

"AI is a fast and efficient intelligent tool." (I6)

These differences show that AI understanding among informants has different levels of depth. I1 and I8 show conceptual understanding, while I3 and I6 emphasize more on AI identity or function.

Theme 2: GenAI Provides Academic Benefits in Understanding Material and Completing Assignments

The second theme was the most dominant theme in the data. All informants identified various benefits of AI in academic activities.

I4 explains:

"I often use AI for simple answers, assignments, and reinterpreting class material in simpler language." (I4)

This statement shows that AI functions as a tool for re-explanation. Students not only ask for answers, but ask AI to re-explain the material in simpler language.

I7 states:

"AI helps me understand difficult material, look for ideas, summarize, and improve tasks." (I7)

I6 provides examples of more complex uses:

"I use it to summarize long lecturer material, give assignment ideas, and create practice questions to assess my understanding." (I6)

Meanwhile, I8 describes the various uses of AI:

"I use AI to understand difficult material, find task ideas, summarize, translate, correct English grammar, prepare presentations, and get additional examples or explanations." (I8)

The data shows that AI is used at several stages of the learning process: understanding, searching, processing, generating, and evaluating material.

I2 also shows the use of several applications:

"I use ChatGPT for obscure things, NotebookLM for presentations and editing PPT slides, and Gemini for questions, lesson resources, and answers." (I2)

This statement shows that students do not use one application for all needs. They begin to distinguish the functions of applications based on academic needs.

I1 emphasizes the ease of obtaining information:

"AI is very helpful because information can be obtained just by asking the AI." (I1)

Theme 3: The Emergence of Critical Literacy through Information Verification and the Use of Prompts

The third theme gives an important dimension to the findings because it shows that students do not always receive AI output directly.

I2 states:

"The AI's answer may not be valid and needs to be checked." (I2)

The statement shows the awareness that AI can generate invalid information.

I2 also states:

"AI is very helpful, the answer is straightforward, there are many sources, it is easy to use, but those sources should be checked." (I2)

The statement shows that the ease of AI does not eliminate the need for source evaluation.

I3 gives a more concrete example:

"I need to check the link/article because some links are inactive or irrelevant." (I3)

Thus, I3 demonstrates the ability to evaluate the accessibility and relevance of AI-provided resources.

I3 also states:

"It requires specific words/prompts." (I3)

This awareness shows that students understand the importance of providing the right

instructions to AI.

I5 provides a more reflective perspective:

"AI should not be the only source of learning; use it while still learning and understanding." (I5)

The statement shows that AI is starting to be positioned as part of the learning process, not a substitute for the learning process.

Theme 4: Awareness of Dependency and the Importance of Responsible Use of GenAI

The fourth theme shows awareness of the risks of using AI.

I5 states:

"There are concerns about reliance on AI and a decrease in independent thinking." (I5)

The statement directly links the use of AI to the possibility of dependency and reduced ability to think independently.

I6 also emphasizes:

"AI must be used wisely." (I6)

I2, while not directly talking about dependency, shows awareness of AI's limitations by stating that AI answers and sources should be examined.

Discussions

The findings in the first theme show that the students have different understandings when asked to define GenAI. These findings are in line with Mansoor et al. (2024), who place AI literacy as a skill that includes the understanding, use, evaluation, and ethics of AI. Thus, students' ability to conceptually explain AI is an important part of literacy, but not the only indicator. The need to go beyond these technical capabilities underlies the importance of the direction of AI education in universities. Stolpe and Hallström (2024) also emphasized that AI education needs to help students understand AI technology, not just operate it. In line with this, Tzirides et al. (2024) added that AI literacy in higher education should develop a productive relationship between human capabilities and technology. This series of findings and theoretical perspectives confirms that students in general already have functional awareness of AI, but the depth of their conceptual understanding still varies.

In the second theme, the findings show that the benefits of GenAI felt by students can be grouped into two types. The first is cognitive benefits, which are helping to understand difficult concepts, obtain explanations, make summaries, develop ideas, and produce exercises. The second is instrumental benefits, namely accelerating information search, making work easier,

and increasing efficiency.

The use of GenAI by students in this study reinforces the findings of various previous studies on the role of AI as a means of academic support. In particular, these findings are in line with Chan and Hu (2023), who show that students see GenAI as having a number of benefits for the learning process but are also aware of the challenges. Similarly, Rasul et al. (2023) also identified the benefits of ChatGPT in supporting learning and academic productivity.

In more detail, Baig and Yadegaridehkordi (2024) show that the use of ChatGPT includes writing, translation, personal learning, and communication. This is in line with the findings of Mohebi (2024) who found that ChatGPT can be used as a source of learning support. Very relevant and strong literature support comes from Rahiem (2026) in the Indonesian context. Students in the study used GenAI for information search, summarizing, improving the structure and grammar of writing, practicing questions, and organizing learning, where the pattern is very similar to the data in this study.

In line with this, Ravšelj et al. (2025) in a global study of 23,218 college students from 109 countries also showed that brainstorming, summarizing, and searching articles were prominent activities in the use of ChatGPT by students. Thus, the overall synthesis of this literature confirms that students view AI primarily as an academic tool. However, it should be emphasized that this study measures student perception, not objective learning outcomes. Therefore, the findings cannot be interpreted as evidence that AI definitively improves academic achievement. These findings only suggest that students perceive AI as a tool that aids the academic process.

For the third theme, the findings are very much in line with the concept of AI literacy developed in various literatures. In particular, Mansoor et al. (2024) place AI evaluation capabilities as one of the main dimensions of AI literacy. In line with this, Lintner (2024) emphasized that AI literacy measurement includes various aspects of competence that go beyond mere technical skills. Furthermore, Nie et al. (2026) specifically include verification/evidence checking and assessment of the suitability of AI use into the construct of generative AI assessment literacy. Based on this theoretical framework, the behavior of informants I2 and I3 can be understood as an early indication of the emergence of evaluative abilities for AI. In addition to the evaluative dimension, Susanto (2026) also emphasized the importance of the reflective dimension in GenAI literacy, where students are not only required to know how to use AI, but must also be able to criticize outputs, consider their impacts, and determine the appropriate use of AI.

Based on these dynamics, these findings indicate that students' critical literacy has begun to grow, even though the development has not been evenly distributed. This can be seen from the fact that only some informants explicitly mention source verification, information validity, or the importance of prompt formulation. Therefore, these critical and reflective literacy skills still need to be developed systematically and structured through the learning process in higher education.

The findings in the fourth theme show that student awareness of the various risks of using GenAI, such as potential dependency and threats to academic integrity, is strongly reflected in various scientific literature. In particular, the findings are very close to the results of the study by Rahiem (2026), who found that Indonesian students see GenAI as a tool that increases efficiency and accessibility, but at the same time are concerned about overdependence, decreased critical thinking, and academic integrity. In line with these findings, Lo et al. (2024) show that the influence of ChatGPT on student engagement is not always positive. In addition to increasing engagement in some contexts, AI can also encourage forms of disengagement when students rely too much on technology. Furthermore, Yusuf et al. (2024) and Bhullar et al. (2024) emphasized that the benefits of GenAI in education always appear side by side with ethical issues and academic integrity as one of the most crucial issues in higher education. Thus, various scientific studies confirm that over-reliance on AI has the potential to lower the quality of students' cognitive engagement.

Especially in the context of higher education in Indonesia, this integrity issue is reflected specifically in the realm of certain fields of study. Harahap et al. (2026) show the importance of AI literacy and ethical awareness in maintaining the learning integrity of Economics Education students. These findings are very relevant to this study because one of the informants came from the field of Economics Education and was explicitly aware of the risk of dependence. In line with that, Putri and Suryati (2026) also showed the importance of understanding the use of ChatGPT in the context of academic integrity in EFL students. Thus, the responsible use of AI requires technical skills as well as ethical awareness. Therefore, the cultivation of academic ethics and the formation of critical thinking habits must be the main foundation so that the use of AI technology does not erode the depth of the student learning process.

GenAI as an Aid, Not a Substitute for Thinking Processes

A comprehensive comparison of the four research themes reveals a hierarchical and continuous conceptual pattern reconstruction. If the four themes are compared, a conceptual pattern is quite clear. At first, students understand GenAI as an intelligent technology and a

tool. Next, they use GenAI to support various academic needs. Over time, some students begin to evaluate the output of GenAI and realize that the information provided is not always valid. In the next stage, some students realize that overuse can erode the ability to think independently. Thus, the position of GenAI in student perception can be formulated in a structured manner as: Understanding GenAI → Use of GenAI → Evaluation of GenAI → Responsible Use of GenAI.

Operationally, the conceptual pattern can be described as a gradual process. In the first stage, students need to understand what GenAI is and what the technology can do. In the second stage, students apply this understanding by using GenAI for specific academic purposes. In the third stage, students actualize critical literacy by evaluating GenAI information and output. In the fourth stage, students maintain ethical responsibility for their academic decisions and products. This gradual pattern emphatically shows that GenAI literacy is not just a technical skill. In line with these findings, various AI literacy literature also places understanding, use, evaluation, and ethics as interrelated multidimensional components (Mansoor et al., 2024; Lintner, 2024; Stolpe & Hallström, 2024). Therefore, this conceptual framework emphasizes that the development of GenAI literacy in higher education must include strengthening technical capacity as well as forming students' critical and ethical reasoning.

Comparison of Findings with Previous Research

The findings of this study show some important similarities with previous studies. These are shown in the following table.

Table 3. Comparison of Research Findings

Findings of this study	**Supporting research**	**Similarities**
AI as an academic tool	Rahiem (2026); Chan & Hu (2023)	AI is used to help with academic activities
Search for information and summaries	Rahiem (2026); Ravšelj dkk. (2025)	Quick information and summarizing are the main uses
Help with assignments and writing	Rasul dkk. (2023); Baig & Yadegaridehkordi (2024)	AI supports academic productivity
Understanding difficult material	Mohebi (2024); Deng et al. (2024)	AI is used as a learning aid
Verify output	Lintner (2024); Not dkk. (2026)	Evaluation is a component

Findings of this study	Supporting research	Similarities
		of AI literacy
Risk of dependency	Rahiem (2026); Lo dkk. (2024)	Excessive reliance is a concern
Academic integrity	Yusuf et al. (2024); Harahap et al. (2026); Putri & Suryati (2026)	The use of AI in relation to ethical questions
Multidimensional AI Literacy	Mansoor dkk. (2024); Tzirides dkk. (2024)	Literacy goes beyond technical skills

Overall, the study reinforces patterns that have been seen in the literature, but contributes to the level of student experience. The students' answers show how concepts such as AI literacy, verification, academic aid, and responsible use of AI emerge in everyday practice.

From Functional AI Literacy to Critical AI Literacy

One of the important contributions of this research is the finding that students' AI literacy can be understood in two layers. The first layer is functional AI literacy. This aspect can be seen when students know how to use AI to: find information, get answers, summarize material, create ideas, make presentations, improve grammar, translate text, and make practice questions. Almost all informants have demonstrated skills in this layer. Meanwhile, the second layer is critical and reflective AI literacy. This aspect is seen when students: realize that AI can provide invalid information; check sources; check links and articles; understand the importance of prompts; realize the risk of dependency; maintain independent thinking; and use AI wisely. Different from the functional layer, this critical aspect is seen to be limited, especially in informants I2, I3, I5, and I6. The existence of this level separation is very important to be aware of. Students can have high technical ability to use AI, but at the same time have lower evaluative skills. Therefore, higher education is not enough to only teach how to use AI, but also to teach how to evaluate AI and how to use AI responsibly. This view is in line with the thinking of Mansoor et al. (2024), Lintner (2024), Tzirides et al. (2024), Susanto (2026), and Nie et al. (2026). Thus, the reorientation of learning in higher education is very urgent so that the development of AI literacy does not stop at mastering tools, but focuses on the formation of critical, evaluative, and ethical reasoning.

CONCLUSION

This study aims to describe students' perceptions of literacy and the benefits of using GenAI in lectures. Based on a qualitative analysis of eight students' answers, four main themes were found. First, students understand GenAI as an intelligent technology that can mimic or support human cognitive abilities as well as a learning tool. However, the level of depth of students' conceptual understanding varies. Some informants are able to explain GenAI based on their cognitive abilities, while others understand GenAI primarily based on its practical functions. Second, students perceive GenAI as a tool that provides various academic benefits. GenAI is used to understand difficult material, find information, complete assignments, summarize material, search for ideas, make presentations, improve language, translate texts, and create exercises. The most consistent benefits are ease, speed, and efficiency. Third, some students have demonstrated critical AI literacy elements. They realize that the information generated by GenAI is not always valid and needs to be verified. They are also aware of the importance of checking sources, checking the relevance of articles, and using the right *prompts*. Fourth, college students are aware of the risks of overusing GenAI. The most obvious risks are dependence on GenAI and the possibility of less independent thinking. Therefore, some informants emphasized that GenAI should be used wisely and not be the only source of learning.

Overall, the research shows that students have a positive perception of GenAI in lectures, but this perception is not without criticism. Students see GenAI primarily as a learning tool, not a substitute for the thought process. The research findings also show that students' functional AI literacy appears to be perceivingly more than the critical, ethical, and reflective aspects of AI literacy. Therefore, the integration of GenAI in higher education needs to be directed from just the ability to use technology to the ability to understand, evaluate, and use GenAI responsibly.

RECOMMENDATIONS

Based on the findings of the research, several recommendations can be given. First, universities need to incorporate AI Literacy into learning in a systematic manner. The material not only needs to explain how to use GenAI applications, but also the basic concepts of GenAI, its capabilities and limitations, output evaluation, ethics, and academic integrity.

Second, students need to be trained not to automatically accept GenAI output. They need to learn to check sources, compare GenAI information with scientific sources, check the existence of articles, and evaluate the relevance of sources. Third, students need to have *prompt literacy*

or be taught how to structure instructions that are clear, specific, and in accordance with learning objectives. *Prompt literacy* can help students use GenAI more effectively while understanding the relationship between GenAI inputs and outputs. Fourth, lecturers can maintain students' independent thinking activities.

Lecturers can design assignments that require students to criticize GenAI answers, compare GenAI answers to scientific articles, explain the reasons for accepting or rejecting GenAI answers, and make evidence-based revisions. Fifth, universities need to have clear policies regarding the use of AI. Policies should not only be prohibition-oriented, but provide guidelines regarding the permissible use of GenAI, obligation to declare the use of GenAI, source verification, and students' responsibilities for their academic work. Sixth, further research can involve more students from various study programs and universities. Triangulation can be done by combining questionnaires, interviews, observations, and analysis of student assignments. Subsequent research can also develop instruments to measure the relationship between functional AI literacy, critical AI literacy, AI dependence, and academic integrity.

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