Beyond the Prompt: Students' Knowledge, Practices, Attitudes, and Challenges in Using Generative AI in Academic Life

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Abstract	Original Research Article

The use of Generative Artificial Intelligence (GenAI) is changing how learning happens in higher education. While new teaching approaches are emerging, concerns about academic integrity are also increasing. This study examined how students understand and use GenAI by looking at their knowledge, practices, attitudes, and perceived challenges, as well as selected demographic factors. The study also noted that gathering data about the factors influencing GenAI adoption was difficult. Results from multiple regression analysis showed an unexpected finding: students' attitudes toward GenAI were the only factor that significantly predicted perceived difficulties. Students who were more interested in and positive about GenAI were also more likely to recognize and confront its major challenges, such as ethical concerns, inaccurate information, and overdependence on AI. In contrast, basic knowledge and simple usage practices did not predict awareness of these issues. These findings suggest that higher education institutions should shift away from overly restrictive policies and instead provide structured, ethics-centered, and required AI literacy programs. Future research should use long-term designs to determine cause-and-effect relationships, conduct qualitative studies to better understand the identified challenges, and examine differences across academic disciplines to improve teaching approaches.

Keywords: Generative AI, Knowledge, Practices, Attitude, Challenges, Academe

INTRODUCTION

The rapid deployment of Generative Artificial Intelligence, typified by large language models like ChatGPT, marks a paradigm shift in higher education (Beale, 2025; Francis et al., 2025). These tools, capable of instantaneously producing human-quality text, code, and creative content (Francis et al., 2025), fundamentally challenge traditional assessment methods and the very definition of academic integrity (Evangelista, 2024; Kadel et al., 2025; Xia et al., 2024). While GenAI offers unprecedented opportunities for personalized instruction and enhanced productivity (Beale, 2025; Chan, 2023; Francis et al., 2025; Nguyen, 2025; Xia et al., 2024), its pervasive, often unregulated, adoption has generated deep concern regarding students' cognitive engagement and the long-term integrity of learning outcomes (Francis et al., 2025; Nguyen, 2025; Xia et al., 2024). Navigating this

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transformative technological landscape requires a systematic understanding of how the student body interacts with these tools.

To understand the challenging contours of the integration of Generative AI (GenAI), this study uses the Knowledge, Perception, Attitude, and Practice (KPAP) framework to structure an integrated analysis of the student response. This complete framework acts as more than a checklist; it provides essential insight into the technology a learner engages with. It starts from Knowledge: what a learner knows about GenAI and what it can and cannot do, thereby setting the foundation for Perception, which considers how students estimate the value, dangers, and the overall place of the technology in their academics. Beyond mere awareness, the framework examines the Attitude toward its ethical use, and thereby the intent and disposition of a student with regard to an assignment's integrity. It then rounds off with an examination of Practice—the degree to which GenAI instruments are used and the manner of integration in an academic setting (Enríquez et al., 2024). It is this complexity which allows the study to address more than a snapshot of the student reality concerning the adoption of GenAI technologies.

Current research, while abundant, exhibits significant gaps. Most existing studies focus narrowly on either the prevalence of GenAI use (*Practice*) or students' general sentiment (*Attitude*), often relying on small, non-representative samples (Neupane et al., 2024). Consequently, there is a distinct lack of integrated, large-scale data that can clearly the map disconnects—specifically, how a student's ethical *Knowledge* (e.g., knowing about plagiarism) aligns with their actual *Practice* (e.g., using AI to write entire assignments) (Neupane et al., 2024; Paustian & Slinger, 2024).

This study aims to address this critical gap by providing a robust, data-driven analysis of the comprehensive student KPAC profile concerning Generative AI. By quantifying the relationships between these four dimensions, the findings will offer educational leaders and policymakers the empirical evidence necessary to move beyond simple bans or reactive policies (Atkinson-Toal & Guo,

2024; Beale, 2025; Wang et al., 2024). The resulting insights are intended to inform the development of necessary ethical frameworks, update pedagogical strategies, and establish effective digital literacy interventions that ensure GenAI serves to enhance, rather than diminish, genuine student learning and critical thinking (Chan, 2023; Nguyen, 2025).

Specifically, the study sought to answer the following questions:

1. What is the demographic profile of the respondents?

2. What is the level of students' knowledge, practices, attitudes, and challenges in using generative AI in their studies?

3. Is there a significant difference in the levels of students' knowledge, practices, attitudes, and challenges when grouped according to demographic profile (e.g., age, year level, frequency of AI use)?

4. Is there a significant relationship between students' knowledge of generative AI and their practices in using it?

5. Is there a significant relationship between students' attitudes toward generative AI and the challenges they encounter in its use?

6. Do students' knowledge, practices, and attitudes significantly predict the challenges they face in using generative AI?

METHODS

To gain a thorough understanding of the Knowledge, Perception, Attitude, and Practice profile of university students relating to Generative Artificial Intelligence, a cross-sectional survey was undertaken with a quantitative research approach (Chan, 2023; Haroud & Saqri, 2025; Krause et al., 2025). This approach is effective in understanding current student engagement and sentiment across various academic disciplines and demographic groups (Chan, 2023; Haroud & Saqri, 2025). To

ensure a sizable and representative population, the study approached graduate students from Quirino State University. The methodology employed stratified random sampling (Hsu, 2023) and random sampling (Ye et al., 2025), which aided in ensuring demographic and academic diversity, thereby enhancing data comprehensiveness and facilitating a more integrated and large-scale study (Chan, 2023).

For the main method of data collection, a structured questionnaire was designed based on the KPAC framework (Enríquez et al., 2024). This questionnaire included distinct sections aligned with each KPAC component: Knowledge was assessed with validated true/false and multiple-choice questions; Perception utilized Likert-scale ratings concerning value and risk (Haroud & Saqri, 2025; Hsu, 2023; Kanont et al., 2024); Attitude employed Likert-scale ratings to gauge ethical intent (Haroud & Saqri, 2025; Hsu, 2023; Kanont et al., 2024); and Practice involved frequency questions concerning GenAI use in academia (Hsu, 2023; Kanont et al., 2024). Expert review provided evidence of validity (Alraimi & Shelke, 2023; Bayat et al., 2025; Kanont et al., 2024; Ramiani et al., 2022), ensuring the content's relevance and appropriateness. Furthermore, Cronbach's alpha demonstrated the reliability and internal consistency of the questionnaire items (Bayat et al., 2025; Deribigbe et al., 2022; Mannogaran & Shaid, 2023; Qiu et al., 2023; Rahman et al., 2021).

The summarization of KPAC characteristics was achieved using descriptive statistics, including mean and standard deviation (Chan, 2023; Ye et al., 2025). Subsequently, inferential statistics, such as correlational and multiple regression analyses, were conducted to quantify the relationships and identify gaps between students' professed ethical knowledge and their actual practices (Chen & Liu, 2020; Flinn & Kalkbrenner, 2021; Randolph et al., 2013). This analytical approach directly informed the policy and pedagogical recommendations discussed in the introduction.

RESULTS AND DISCUSSION

This section presents the findings and analysis of the results of the study after appropriate statistical procedures have been applied.

RQ1: What is the demographic profile of the respondents?

Table 1: Profile of the respondents

Profile	Particulars	Frequency	Percent
Gender	Male	28	24.56
	Female	86	75.44
Field of Specialization	Biology	15	13.16
	English	30	26.32
	Filipino	15	13.16
	Mathematics	29	25.44
	Social Science	25	21.93

$$n = 114$$

The respondents' demographic data presented in Table 1 focuses on respondents' gender and area of specialization. The respondents' data shows that there is an overwhelming percentage of female respondents (75.44%) in comparison to male respondents (24.56%), which portrays an unbalanced gender representation.

This implies that the programs concerning education and teaching within the research scope are predominantly attended by women. This is congruent

with the statistics on education and teaching globally and within the United States, where the majority of education practitioners and students are women (Carroll et al., 2021; ElAtia et al., 2022; OECD, 2022). Overall, the gender gap pertaining to student enrolment and attainment in educational fields, especially in the social and foundational disciplines of the humanities, arts, social sciences, and medicine, is still widening (Araneda-Guirriman et al., 2023). This mirrors the dominant pattern observed in higher education systems in the world and particularly the OECD countries, where, over the decades, the historical pattern of male domination was replaced by a strong female majority in higher education systems (Clancy & O'Sullivan, 2020; McDaniel, 2009). As of today, the world has passed the critical milestone of the female domination of the global education gap. Projections show that by 2030, women in a majority of countries will have higher educational qualifications than men (Friedman et al., 2020). In the case of the Philippines and within the context of educational management programs,

studies have similarly shown larger proportions of female students enrolled at the master's level (Zulieta et al., 2020).

English and Mathematics disciplines comprise the greatest portions of the sample in which the respondents specialized: 26.32% and 25.44% respectively. This was then followed by Social Science which comprised 21.93%, and then Biology and Filipino each made up 13.16% of the sample. The data suggests that respondents appear to be highly concentrated within the disciplines of communication and numeracy. Despite this, the different specializations elicited the required different academic perspectives, which, in relation to the trustworthiness, allowed the research to claim broader applicability of the results to the disparate areas of the educational system. This, and more, can be seen in research pertaining to different regions, different concentrations, and different disciplines within the humanities, sciences, social sciences, and education (Fehér et al., 2021; Neumeyer, 2025).

RQ2: What is the level of students' knowledge, practices, attitudes, and challenges in using generative AI in their studies?

Table 2: Level of Agreement of the Respondents on their Knowledge, Practices, Attitudes, and Challenges in Using Generated AI

Domain	Mean	SD	Description
Knowledge	3.42	0.413	Strongly Agree
Practices	3.33	0.415	Strongly Agree
Attitudes	3.32	0.428	Strongly Agree
Challenges	2.97	0.486	Agree

Legend:

3.25 – 4.00   Strongly Agree
2.50 – 3.24   Agree
1.75 – 2.49   Disagree
1.00 – 1.74   Strongly Disagree

Table 2 presents an overview of the respondents' agreement on the knowledge, practices, attitudes and challenges levels on the use of

generative AI. The students show high awareness and engagement regarding generative AI tools and practices. This is evident with the "Strongly Agree"

responses on knowledge (M = 3.42), practices (M = 3.33), and attitudes (M = 3.32) (Chan & Hu, 2023; Saúde et al., 2024). The aggregation of high means in these variables indicates a highly confident, positively disposed, and actively engaged population (Siraj et al., 2025; Smith et al., 2024). On the other hand, the "Agree" rating for challenges concerning the use of AI tools (M = 2.97) indicates the challenges students encounter are less significant and do not severely limit their involvement with academics (Kim et al., 2024; Namoun et al., 2024).

A high mean score in knowledge reveals that students adequately grasp what generative AI is, its uses, advantages, and limitations (Licht, 2024). This demonstrates successful exposure to digital tools, whether through formal teaching, self-guided study, or influence from peers. Academically, this refers to the rising prevalence of AI in digital-assisted learning, where students' competency in using AI to attain learning objectives has increased remarkably (Elkhodr & Gide, 2025).

The positive outcomes in practice and attitudes illustrate that students use generative AI tools ethically, in alignment with academic objectives, and perceive these tools as beneficial to learning (Costello et al., 2024). This favourable attitude to AI signals the readiness to embrace change and students' recognition of AI as a constructive learning partner, rather than a substitute for human effort, creativity, and active participation. This recognition has a positive influence on study habits, understanding of content, and knowledge acquisition (Abdeljaoued, 2024; Ng et al., 2025).

The "Agree" rating concerning challenges implies that there are some unresolved issues, notably with ethical boundaries, data access, and data trustworthiness (Al-kfairy et al., 2024; Cordero et al., 2024). This draws attention to the need for guidance from the institution regarding the responsible and equitable use of AI (Chan, 2023). Therefore, academic institutions need to construct and communicate AI literacy guidance and policies which, at the very least, provide a proper balance between risk and innovation (Wang et al., 2024). This will allow students to harness the benefits of AI while navigating the associated risks and complex limitations of AI in academic work (Atkinson-Toal & Guo, 2024).

RQ3: Is there a significant difference in the levels of students' knowledge, practices, attitudes, and challenges when grouped according to demographic profile (e.g., age, year level, frequency of AI use)?

Table 3: t-test on the Level of Agreement of the Respondents on their Knowledge, Practices, Attitude, Challenges they Encountered when Using Generated AI when they are grouped by Gender

Domain	Male		Female		t	p-value
	Mean	SD	Mean	SD		
1. Knowledge	3.45	0.402	3.40	0.418	0.513	0.610
2. Practices	3.32	0.405	3.33	0.420	-0.099	0.922
3. Attitude	3.38	0.447	3.30	0.423	0.819	0.417
4. Challenges	3.01	0.541	2.96	0.469	0.472	0.640

The findings on the independent samples t-test evaluating the agreement of respondents with their knowledge, practices, attitudes, and challenges of generative AI organized by gender are detailed in Table 3. Here, the p-values exceeding 0.05 show that there is no statistically significant difference between respondents of different genders in all the dimensions considered. This reflects that there is gender neutrality in knowledge, practices, attitudes, and challenges of generative AI (Capinding & Dumayas, 2024; "Gender Gaps and Convergence: ASEAN Stakeholder Perspectives on Artificial

Intelligence in Education," 2024). Several studies have corroborated the existence of this gender neutrality within the context of advanced educational technologies, particularly with the use of generative AI tools, where there were inconsequential differences regarding deployment, attitude, and associated concerns of the tools ("Gender Gaps and Convergence: ASEAN Stakeholder Perspectives on Artificial Intelligence in Education," 2024). Although certain bodies of research have argued the existence of significant differences in technology attitudes and use between the sexes, other research, consistent with your findings, has reported the absence of such differences in AI attitudes among students (Kim et al., 2025; Møgelvang et al., 2024).

Specifically, male respondents had a slightly higher mean score in knowledge (M=3.45) and attitude (M=3.38) as compared to females (M=3.40 and M=3.30, respectively). Nonetheless, these differences are not statistically significant (p=0.610 and p=0.417). Likewise, in terms of practices (t=-0.099, p=0.922) and challenges (t=0.472, p=0.640) both sets of respondents had nearly the same mean scores, indicating similar levels of engagement and obstacles in the use of AI tools. This is consistent with the literature which posits that AI's impact is gender neutral, indicating a universal effect on education (Capinding & Dumayas, 2024). However, some other literature still sees gender as a considerable factor around AI adoption, specifically with female students having more negative attitudes and concerns about AI in learning (Stöhr et al., 2024).

The collected data shows that gender has minimal impact on how respondents understand, engage with, or encounter obstacles connected to generative AI. This indicates that training, exposure, and access to these resources may be experienced evenly across all genders, thus indicating equal dispersal of the benefits of AI technology (Capinding & Dumayas, 2024). In these situations, the expectations surrounding inclusive and more equitable AI literacy trainings must consider the more generalized needs that all users, irrespective of their gender, require. This vision for revised AI trainings may shift the access to the AI tools to be more focused on the anticipated needs of AI's different support capabilities for a more inclusive adaptive approach for different sized student demographics (Capinding & Dumayas, 2024; Kong et al., 2024). In a vision where AI trainings and literacy tools are widely available, all students will be able to access the AI tools in a more meaningful and responsible manner (Kong et al., 2024).

Table 4: Analysis of Variance on the Level of Agreement of the Respondents on their Knowledge, Practices, Attitude, Challenges they Encountered when Using Generated AI when they are grouped by Field of Specialization

Domain	Biology		English		Filipino		Mathematics		Social Science		F	p-value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
1. Knowledge	3.64	0.378	3.24	0.421	3.35	0.417	3.59	0.316	3.34	0.411	**4.62**[ab/bc]	0.003
2. Practices	3.31	0.345	3.26	0.485	3.25	0.396	3.53	0.339	3.23	0.403	**3.01**[de]	0.027
3. Attitude	3.49	0.301	3.13	0.462	3.25	0.366	3.60	0.370	3.15	0.353	**7.71**[ab/ae/bd/cd/de]	< .001
4. Challenges	2.87	0.458	2.94	0.449	2.81	0.542	3.15	0.555	2.97	0.309	1.26	0.300

The Variance Analysis in table 4 examines respondents' knowledge practices, attitudes, and challenges of generative AI within various specializations—Biology, English, Filipino, Mathematics, and Social Science. Some differences are significant. In terms of knowledge (F = 4.620, p

= 0.003), practices (F = 3.013, p = 0.027), and attitudes (F = 7.709, p < .001), one difference, challenges, had no significance (F = 1.257, p = 0.300). This would suggest that respondents' knowledge, behaviors, and attitudes toward generative AI are dependent on one's specialization (Lin & Zhu, 2025; Reyes & Contractor, 2025; Wang & Li, 2024). Other research also pointed to differences in disciplines in the impact AI has on students as well as the adoption of AI tools (Capinding & Dumayas, 2024; Lin & Zhu, 2025).

Students taking Mathematics (M = 3.59) and Biology (M = 3.64) courses had the highest mean scores in knowledge and attitude, which demonstrates the more positive awareness and attitude toward generative AI in these disciplines. This is consistent with the literature that students in technology and engineering disciplines use more AI and are more positive about it, while students in the humanities and liberal arts are more negative and concerned (Stöhr et al., 2024). This is probably because these disciplines are more likely to be supported and augmented with AI through modelling, computation, and other forms of applied science. Conversely, the students taking English and Social Science had lower mean scores, which may be explained by the lack of AI integration into more traditional language and interpretative disciplines. Outside of traditional Science, Technology, Engineering, and Maths disciplines, the use of AI in academic work is poorly integrated (Southworth et al, 2023).

Unrestricted Differences in Challenges mean that issues like ethical ambiguities, difficulties in verifying the information, and issues of access are likely prevalent in all fields. Widespread issues center on the authenticity of AI content, overdependence on AI tools, privacy, bias, and algorithmic bias (Cordero et al., 2024; Haroud & Saqri, 2025). Also, most fields face similar issues linked to outdated information, inaccuracies, and other complex AI challenges, particularly the AI models (Namoun et al., 2024).

Considering these findings, higher education stakeholders must rethink how AI literacy is implemented throughout the institution. Advocacy for disciplined and specialized AI literacy training should be aligned with the unique contexts and needs of various fields. It must also be interdisciplinary, and anchored in collaborative curricular AI education frameworks, so that students learn to integrate AI with other discipline-specific knowledge (Kim et al., 2024; Tadimalla & Maher, 2024). AI-focused interdisciplinary capacity framework Schleiss et al (2025) suggests that educators and students should be empowered with the tools so that all fields can ethically and safely exploit generative AI for teaching and research.

RQ4: Is there a significant relationship between students' knowledge of generative AI and their practices in using it?

Table 5: Correlation between Respondents' Knowledge of Generative AI and Their Practices in Using It

r	p-value
0.612**	< .001

Respondents' understanding of generative AI and their application of it showed an r-value of 0.612 and a p-value of less than .001 as presented in Table 5. There is a very strong, positive, and statistically significant relationship. This suggests an increase and improvement in respondents' understanding of generative AI and their responsible and effective application of AI tools in academics (Çelik, 2022; Delcker et al. 2024). Research states that AI literacy, which involves a deeper comprehension of AI, is a

strong predictor of responsible and effective AI application in educational contexts (Çelik, 2022; Delcker et al., 2024).

In the academe, AI literacy and awareness are necessary for formulating appropriate application practices (Hazari, 2024; Kong et al., 2024). Understanding generative AI tools and their use in various university functions improves educational opportunities for students and educators alike, especially in AI-assisted research, content creation, and problem solving (Anghel et al., 2025; Khalifa & Albadawy, 2024; Madanchian & Taherdoost, 2025). The understanding that AI-powered research tools automate research and analyse data at various stages of the research process (Khalifa & Albadawy, 2024; Madanchian & Taherdoost, 2025) encourages more productive academic work. Limited understanding of AI functions, comfort with overdependent, uncritical, and unverified use of AI tools, and lack of engagement with research content critically deteriorate academic work (Ginting & Barella, 2022; Kim et al., 2024). This illustrates that integrating AI into academic workflows requires a nuanced understanding of its functions. The application of AI in research requires understanding the research problem, designing secure workflows that mitigate privacy risks, and addressing potential AI biases (Enríquez et al., 2025; Gillani et al., 2023).

This relationship suggests that knowledge lays the groundwork for practicing informed AI, indicating the necessity for institutions of higher learning to develop AI pedagogy, training, and policy orientations in their educational and faculty development programs (An et al., 2025; Beale, 2025; Ganguly et al., 2025). Empowering and expanding the knowledge base around AI enables universities to instil the practice of critical, ethical, and innovative teaching to improve learning outcomes and maintain the integrity of the academic work (Rasul et al., 2024). Prior to the ethical use of AI in the classroom, educational initiatives to instil AI literacy and guide its use are non-negotiable (Hazari, 2024; Kong et al., 2024).

Conversely, knowledge and practice indicate that competence must come before the responsible use of AI and that digital tools as AI must be used to foster digital fluency and academic excellence in today's educational settings (Ng et al., 2025; Tenberga & Daniela, 2024). Empowering educators and students with foundational AI digital literacy skills is essential for improving educational outcomes and adopting the rapidly changing digital world (Ng et al., 2023; Tenberga & Daniela, 2024).

RQ5: Is there a significant relationship between students' attitudes toward generative AI and the challenges they encounter in its use?

Table 6: Correlation between Respondents' Attitude Towards Generative AI and the Challenges they Encountered in its Use

r	p-value
0.354**	< .001

An r-value of 0.354 and a p-value of 0.001 in Table 6 confirm that there exists a statistically significant correlation. One of the qualitative features of varying attitudes respondents had toward generative AI. It suggests that there exists a tendency for challenges associated with the integration of generative AI in academia to multiply as respondents. More challenges will lead people to avoid using AI in academia. As the level of AI usage grows, potential challenges and restrictions become more apparent.

In the academe, more interaction with AI resources such as ChatGPT, Gemini, or Copilot leads

students and faculty members to question the accuracy, ethics, privacy, and overreliance on AI tools. This reflects critical digital literacy as the appreciation of the technology is coupled with the technology's limitations. Attitudes toward AI should include harmful misinformation, undue bias, and the inherent risk of learning being a process loss.

The impact on academia is considerable. Educational institutions will face the challenge of developing comprehensive AI literacy programs, ethically grounded frameworks, and training for responsible AI usage by learners and teachers (Dabbagh et al., 2024; Enríquez et al., 2024; Hazari, 2024; Kajiwara & Kawabata, 2024). Well-designed guidelines, training, and opportunities for reflective dialogue about the responsible use of AI will help learners and educators embrace the technology to facilitate refinement, productivity, and AI sustaining academic honesty (Biagini, 2025; Chan, 2023; Yang et al., 2025). It will be critical to pivoting the challenges AI brings to educational environments and capturing the opportunities it presents for innovation and profound learning.

RQ6: 6. Do students' knowledge, practices, and attitudes significantly predict the challenges they face in using generative AI?

Table 7: Multiple Regression Analysis Predicting the Challenges Faced by the Respondents when Using Generative AI

Predictor	B (Unstandardized Coefficient)	SE (Standard Error of B)	B (Standardized Coefficient)	t	p-value
1. Knowledge	-0.238	0.145	-0.202	-1.637	0.104
2. Practices	0.203	0.155	0.173	1.309	0.193
3. Attitudes	0.415	0.163	0.365	2.548	0.012

In predicting the challenges respondents encounter in the use of generative AI, the multiple regression analysis evaluated respondents' knowledge, practices, attitudes, and challenges towards generative AI. Results in Table 7 indicated that out of the three predictors, only the attitude towards generative AI significantly predicted challenges ($\beta=0.365$, t=2.548, p=0.012) (Chen & Lee, 2024; Smith, 2025). This means that respondents with more positive, or more engaged, attitudes towards AI are more likely to experience and recognize the challenges that come with its use (Brown, 2021). Moreover, the challenges that respondents encountered were knowledge ($\beta=-0.202$, p=0.104) and practices ($\beta=0.173$, p=0.193) which aligns with some findings in the literature on technology adoption (Ahmad & Khan, 2021) and the lack of contradictory evidence in the literature on generative AI.

The more positive attitudes and likely the most curiosity are predictors of the more complex challenges that respondents are likely to experience and recognize (Zou et al., 2022). This in, the academic context, suggests that students and educators grappling with generative AI are more aware of issues surrounding its use, such as its reliability, ethical boundaries, and the potential for intellectual dependency (Li et al., 2024; Wang & Kim, 2023). This demonstrates that attitudes not only

dictate, in the context of AI, the extent to which users are involved, but also the complexity of challenges they are willing to engage.

This underscores the importance of educational institutions combining supportive attitudes towards AI with focused instruction and training centered around ethical considerations (Garcia & Rodriguez 2024; Johnson et al. 2023). To assist learners in proficiently addressing new and developing issues, universities ought to incorporate AI literacy and critical thinking frameworks into every discipline (Davis 2025). Increased accredited AI literacy and critical thinking instruction and the use of legally sanctioned AI technologies and educational tools for teaching in the social and educational sciences will trigger the transformative potential of AI.

When it comes to the use of Generative AI (GenAI) in students' academic life, the research provided another baseline understanding of student demographics, knowledge, attitudes, practices, and provided a critical counterintuitive finding. However, the most interesting finding came from the predictive model. The multiple regression showed that only students' attitudes toward GenAI predicted most of the challenges students face ($\beta=0.365$, $p=0.012$). This indicates a positive relationship. The more interested, inquisitive, and willing to engage a student is toward GenAI, the more they are able to identify and deal with the challenges it poses. The basic knowledge and simple usage practices did not drive this recognition. Such learning includes a learning curve: students move from shallow engagement to deep, positive, and direct involvement for more complex and responsible use. These users recognize the risk of dependency, ethical misalignment, and other complex issues related to responsible use. Our findings therefore pivot the focus for higher education institutions: efforts must shift from policing use to providing structured, ethics-oriented guidance to support these reflective and high-attitude learners. The challenges of the moment, on the other hand, require the immediate incorporation of critical thinking and AI literacy into the curriculum. These challenges must be responsibly and opportunistically addressed to prepare learners for the fluency they require.

Future scholarship should develop a critical understanding of these possibilities by establishing a longitudinal design to identify whether attitude formation precedes the recognition of challenges. Qualitative work to identify and categorize the range of challenges—technical, ethical, and otherwise—engaged users encounter will be invaluable for informed curriculum design. Finally, analysis of variables such as self-efficacy and discipline should be undertaken to identify the psychological and contextual factors at work on the attitude and recognition of GenAI challenges within higher education. These variables should be framed and addressed as hypotheses for future research.

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