Journal of Information Technology Education: Innovations in Practice

An Official Publication of the Informing Science Institute
InformingScience.org

JITEiip.org

Volume 24, 2025

EMPOWERING FACULTY IN CREATIVE AND CULTURAL DISCIPLINES: AI LITERACY AND IMAGE GENERATOR INTEGRATION IN HIGHER EDUCATION

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ABSTRACT

Aim/Purpose	This study empirically analyzes how a tailored AI literacy initiative can empower higher education faculty in creative and cultural-focused disciplines to adopt AI image generators into their courses. It achieves that by first identifying the foundational components required for developing an AI literacy initiative for integrating AI image generators into creative and cultural courses (RQ1) and then assessing how an AI literacy workshop designed around these components influences faculty's perceived confidence, understanding, and readiness to adopt AI image generators (RQ2).
Background	The proliferation of AI image generators has disrupted the Creative and Cultural Industries (CCI), creating both opportunities and challenges for educators. Faculty face barriers such as limited technical skills, ethical concerns, and a lack of pedagogical strategies. Despite growing interest, few AI literacy initiatives are tailored to the unique needs of creative and culturally-focused faculty. Our study is presented against such a backdrop.
Methodology	A two-phase mixed-methods approach was conducted. Phase One involved focus group interviews (Activity 1) with faculty in CCI-focused disciplines (e.g., arts, design, architecture, marketing, music, fashion, film, IT, and the like) to identify key components for designing an AI literacy initiative. In Phase Two, the designed workshop (Activity 2) was delivered to 51 CCI faculty from a midwestern university. Data was collected through pre- and post-workshop surveys,

Accepting Editor Stamatis Papadakis | Received: August 11, 2025 | Revised: November 10, 2025 | Accepted: November 19, 2025.
Cite as: Basty, R., Kropczynski, J., & Halse. S. (2025). Empowering faculty in creative and cultural disciplines: AI literacy and image generator integration in higher education. *Journal of Information Technology Education: Innovations in Practice, 24,* Article 27. https://doi.org/10.28945/5666

	as well as live polls to assess changes in participants' perception around AI image generators' adoption into their courses.
Contribution	This study offers multiple contributions. The systematic data collection and analysis of participants' data (empirical contribution) through a mixed-methods approach, which combines statistical analysis and human-AI thematic analysis (methodological contribution), informed the design and development of an AI literacy workshop (artifactual contribution) tailored for higher education faculty in CCI disciplines. Additionally, it contributes to the underexplored area of adopting image generators ethically and via pedagogical best practices into creative and cultural education.
Findings	In Activity 1, the key components for designing an AI literacy initiative tailored for CCI faculty include technical skills, ethical awareness, and pedagogical strategies combined with practical applications and continuous AI Literacy support/resources. In Activity 2, faculty showed a positive attitudinal shift. They reported increased confidence, pedagogical and ethical awareness, access to institutional resources, and practical applications post-workshop. They expressed appreciation for image generators as complementary tools and readiness to integrate them into their teaching.
Recommendations for Practitioners	Institutions should support faculty development through accessible AI tools, discipline-based literacy resources, hands-on training, and ongoing learning opportunities tailored to them. Interdisciplinary collaboration and developing ethical guidelines are essential for responsible GenAI adoption.
Recommendations for Researchers	Future research should examine the long-term impacts of AI literacy initiatives on teaching and learning outcomes, exploring other multimodal GenAIs, and include broader stakeholders (e.g., students, administrators, and even technologists).
Impact on Society	Equipping higher education faculty with AI literacy around GenAIs fosters responsible technology adoption and use, enhances teaching practices and learning outcomes, and prepares students to thrive in an AI-driven workforce, where humans and AIs can co-exist, collaborate, and co-create.
Future Research	Future research should include longitudinal studies to assess faculty engagement and student outcomes. Expanding future research across institutions and academic levels (e.g., K-12) will help develop scalable, discipline-specific AI literacy resources, initiatives, and frameworks.
Keywords	AI literacy, generative AI, higher education, faculty professional development, responsible AI, pedagogical innovation, creative and cultural industries

INTRODUCTION

The proliferation of generative artificial intelligence (GenAI) has impacted various areas of our daily life, as well as different societal sectors and industries (Amankwah-Amoah et al., 2024; Ng et al., 2021). For instance, the Creative and Cultural Industries (CCI) have been impacted by AI image generators (e.g., DALL-E, Stable Diffusion, Midjourney, etc.), an instance of GenAIs. These tools have transformed different creative and cultural domains (e.g., arts, design, music, film, fashion, advertising, and information technology), which have propelled the CCI to invest in its employees' training, re-skilling, and upskilling (Amankwah-Amoah et al., 2024). This highlighted the importance of AI literacy for all (Laupichler et al., 2022; Ng et al., 2021) and shifted attention to academia – particularly higher education due to its deeper entanglement with industries and the job market (Bardhan et al.,

2013; Basty et al., 2025) – to prepare the future creative and AI-literate workforce (Zhang et al., 2025).

However, despite the rapid rise of AI image generators in creative and cultural fields, faculty – who are an important group for educating the future workforce (Basty et al., 2025) – remain underprepared and under-researched, which hinders the integration of these technologies in higher education (Basty et al., 2025; Bian et al., 2024). Faculty have shown apprehension due to ethical and pedagogical concerns, lack of AI literacy, and insufficient access to resources (Basty et al., 2025; Dwivedi et al., 2023; Plata et al., 2023). Their perception has often been overlooked (Bian et al., 2024), and their expectations of AI literacy sources tailored for them remain understudied, despite literature discussing the importance of AI literacy, proposing frameworks, and/or naming solutions (Crompton, 2023; Fitzpatrick, 2025; Laupichler et al., 2022; Ng et al., 2021). It is worth noting that not all CCI-focused faculty are AI-savvy. Thus, creating sources that balance the technical, pedagogical, and creative aspects of AI image generators adoption is critical (Basty et al., 2025).

This study addresses the discussed gaps by empirically analyzing the needs of higher education faculty, developing a tailored AI literacy workshop to address them, and assessing its immediate impact on these faculty members. It achieves its aims by answering the following research questions through a two-phased mixed-methods approach:

RQ1: What are the foundational components required when developing an AI literacy initiative promoting the integration of image generators in CCI-based courses?

RQ2: To what extent does an AI literacy workshop, designed around foundational AI literacy components, influence HEI faculty's perceived confidence, understanding, and readiness to integrate AI-based image generators into CCI-based courses?

In the first phase, focus group interviews (Activity 1) were conducted with CCI-focused faculty, sampled from the same pool of faculty as in Basty et al.'s (2025) study, to identify the key components for designing the AI literacy initiative (RQ1). Then, in Phase 2, the designed workshop (Activity 2) was delivered to a group of CCI-focused faculty members from the University of Cincinnati (UC). The choice for UC faculty was given the growing Midwest AI ecosystem in Cincinnati, with the university serving as an academic partner. It contributes directly to the regional AI hub's skills development, innovation, and responsible AI integration (Cincinnati AI Catalyst, n.d.; Shaner, 2024).

BACKGROUND LITERATURE

AI LITERACY IN CREATIVE AND CULTURAL INDUSTRIES

AI literacy is an emerging field in the twenty-first century, facing a limited school of literature on its definition and components (Ng et al., 2021). A systematic review by Zhang et al. (2025) shared some of the definitions and components from current literature. From the ability to understand core concepts and functions of AI with an emphasis on technical knowledge to a holistic approach that combines proficiency dimensions (e.g., knowledge, awareness, skills, competencies, and experience) and subject areas (e.g., models, data, tools, interfaces, and societal impact), the authors mention that AI literacy bears slightly nuanced meanings. Promoting AI literacy that also meets the needs of non-technical users/learners is equally important, an area that Long and Magerko (2020) highlight in their research as being limited.

Nevertheless, AI has become a fundamental 21st-century skill needed for all learners and schooling levels (Zhang et al., 2025), similar to reading, writing, and other foundational skills (Ng et al., 2021). According to Ng et al. (2021), every learner should know and understand the basics and concepts around these tools; be able to use and apply them as part of practical applications in various real-world scenarios; create with them and evaluate creations and outputs; and be able to identify and address ethical issues around these technologies as part of responsible AI uses. In addition, Hashmi and

Bal (2024) highlighted that soft skills, such as critical thinking, creativity, and emotional intelligence, will remain crucial, especially as we transition toward more AI-powered industries.

After all, GenAIs have introduced major disruptions and trends across various domains, sectors, and disciplines, ultimately impacting industries, workplaces, and creative ecosystems (Amankwah-Amoah et al., 2024; Basty et al., 2024). As one of the major profitable industries – contributing billions of dollars to the U.S. economy and providing millions of employment opportunities – the creative and cultural industries (CCI) (e.g., art, design, music, film, fashion, advertising, and information technology) have faced many challenges and changes (Amankwah-Amoah et al., 2024; Hutcheon, 2022). GenAIs are transforming various CCI sectors, introducing both challenges and opportunities, and necessitating proactive human-AI collaboration, which in turn reshapes job roles and promotes the responsible implementation of GenAIs in creative processes (Amankwah-Amoah et al., 2024). Hence, CCI has invested in training, skilling, re-skilling, and upskilling their employees, highlighting the importance of AI literacy (Amankwah-Amoah et al., 2024; Ng et al., 2021).

AI Illiteracy: A Main Barrier to GenAI Adoption for Higher Education Faculty

The growth and adoption of GenAI have greatly impacted higher education (Hashmi & Bal, 2024). From reported academic integrity violations and ethical complications surrounding these tools to increased efficiency and productivity in teaching, learning, and research, the negative and positive disruptions caused by these varied tools (Basty et al., 2025; Dwivedi et al., 2023) are evident. While some higher education institutions (HEIs) have adopted these technologies, others still grapple with their implications, particularly regarding academic dishonesty (Hashmi & Bal, 2024). Song (2024) argued that improving AI literacy among faculty will not only address such concerns in HEIs but also grant equal access to technology. However, faculty – responsible for preparing the future workforce – have shown apprehension, lack of AI literacy, as well as their perception often understudied, hindering GenAI adoption in their classrooms (Basty et al., 2025; Bian et al., 2024; Dwivedi et al., 2023; Plata et al., 2023). Ultimately, literature suggests that AI illiteracy is a critical issue, impacting faculty's technical, pedagogical, and ethical knowledge around GenAIs (Basty et al., 2025; Bian et al., 2024). It ultimately interferes with efforts toward effective and responsible adoption, implementation, and teaching (Basty et al., 2025; Bian et al., 2024).

While some literature discusses the importance of AI literacy, proposes frameworks, or suggests solutions for academic stakeholders, including HEI educators, expectations toward an AI literacy source tailored for faculty remain understudied (Crompton, 2023; Fitzpatrick, 2025; Laupichler et al., 2022; Ng et al., 2021). For instance, the reputable Technological, Pedagogical, and Content Knowledge (TPACK) framework, influential in guiding educators on integrating technology into teaching (Koehler et al., 2017), has noticeable limitations. These limitations revolve around the ethical adoption of AI image generators and integration by modern creative and cultural educators (Graham, 2011). For instance, TPACK emphasizes that ethical implications are context-specific, depending on how technology is applied, rather than being a standalone principle (Koehler et al., 2017). Challenges arising from this structure include ambiguity or overlooked ethical guidelines by educators who may prioritize technical and pedagogical knowledge over ethical considerations, leading to the misuse of technology (Gunder & Ford, 2025). Thus, without an emphasis on ethics, professional development may fail to equip educators and faculty with the necessary skills to navigate ethical issues related to technology use.

Conversely, the importance of ethical considerations around AIs is mentioned in UNESCO's AI Competency Framework for Teachers (AI CFT) (Miao & Cukurova, 2024). The framework addresses concerns surrounding AIs, including AI image generators as an instance of GenAIs, by promoting a human-centered mindset, highlighting the ethics of AI, and exploring the applications of these tools in pedagogy and professional development (Miao & Cukurova, 2024). However, what

both the UNESCO and TPACK frameworks lack is a lack of discipline-specific depth and insufficient research support, especially in higher education, as well as an overlooking of the nuances and needs of evolving creative and cultural disciplines (Gunder & Ford, 2025; Miao & Cukurova, 2024). Finally, it is worth noting that not all CCI-focused faculty are AI-savvy, which further highlights the importance of holistic AI literacy initiatives, programs, and sources that meet the needs of both technical and non-technical learners in creative and cultural disciplines (Basty et al., 2025; Laupichler et al., 2022), which is amiss.

The Cincinnati AI Hub Focus

The growing AI ecosystem in the Midwest United States, particularly in Cincinnati, Ohio, underscores a strategic context for this study's focus on faculty AI literacy in creative and cultural disciplines. The University of Cincinnati (UC) is situated as the nexus of this burgeoning hub, actively contributing to and benefiting from a collaborative network of AI-focused initiatives (Shaner, 2024). Entities such as CincyAI for Humans (n.d.) (a rapidly growing community hosting monthly meetings at UC's Digital Futures building), Cincy AI Week (n.d.) (the largest dedicated AI conference in the Midwest), and Cincinnati AI Catalyst (n.d.) (an organization committed to advancing inclusive, human-centered, and responsible AI) collectively form a robust infrastructure for AI development and adoption within the region (Cincinnati AI Catalyst, n.d.; Shaner, 2024). These entities foster interdisciplinary collaboration and human-centered innovation, aligning closely with the goals of AI literacy in higher education.

This regional momentum highlights the importance of equipping UC faculty, particularly those in creative and cultural disciplines, with the skills and strategies necessary to integrate GenAI tools, such as AI image generators, into their teaching. By situating the AI literacy initiative workshop within UC, the study responds to institutional needs, while also contributing directly to the regional AI hub's objectives, including workforce development, ethical AI integration, and creative innovation. Furthermore, this targeted investment allows future graduates from UC's creative and cultural programs to be proficient in both traditional and modern creative tools used in the CCI-based workplaces. Overall, this alignment highlights the study's relevance and positions UC faculty as key stakeholders in shaping responsible adoption of AI image generators across creative and cultural education.

METHODOLOGY

To properly address the research questions posed in this study, two sequential activities were conducted as part of an IRB-approved study. Appendix A presents the participant flow diagram, which illustrates the recruitment sample for each activity, the sample size of focus group interviews, workshop attendance, and the responses to pre-workshop and post-workshop surveys, as well as in-workshop poll responses.

Activity 1 involved focus-group interviews among 8 out of 14 volunteered HEI faculty from CCI-based courses to identify major components that an AI literacy initiative should contain to promote the integration of image generators in creative and cultural courses. Research steps for this activity included: (1) recruiting participants; (2) collecting data; (3) analyzing the data; and (4) reporting results. The results obtained from focus group interviews informed the design of the workshop.

Activity 2 involved designing an AI literacy initiative based on identified components and implementing it among 51 out of 66 finalized CCI-based faculty members. As in the works of Moult et al. (2024), Shamsuddin et al. (2021), and Hoang et al. (2025), this designed workshop served a dual role: both as a solution and as a data collection tool. As a workshop solution, it taught faculty about image generators, relevant technical skills, ethical knowledge, and pedagogical strategies for adoption. As a data collection tool, pre-surveys, post-surveys, and live polls were used to collect participants' perceptions and perceived confidence, intention, and preparedness for adopting these tools. Research steps

for this activity included: (1) recruiting participants; (2) designing the workshop; (3) running the workshop; (4) collecting data; (5) analyzing the data; and (6) reporting results.

Activity 1: Initial Focus Group Interview (RQ1)

Stakeholder recruitment

Faculty across various Science, Technology, Engineering, Art, and Mathematics (STEAM) disciplines were recruited, as indicated by an initial survey conducted by Basty et al. (2025), who shared an interest in participating in future studies. In that survey study, a total of 14 participants volunteered to participate in future follow-up research. Thus, emails were sent to the 14 volunteered faculty members, out of which a total of 8 faculty members consented to participate in the follow-up interviews. Muller et al. (1993), the sample size of 8 participants makes it a sufficient sample size for this participatory investigation aimed at "envisioning future solutions" such as a workshop, which is the next task's goal (p. 27). Participants were grouped based on their availability and schedule, resulting in four groups of four, two, one, and one member. Table 1 displays the participants' demographic information.

Table 1. Participants' demographics attending the focus group interview

#	Gender	Age	Teaching years	Highest degree	Discipline
P1	Male	35 - 44 years old	0 - 5 years	Doctoral	Arts&Design
P2	Male	55+ years old	16 - 20 years	Masters	Arts&Design
P3	Male	45 - 54 years old	16 - 20 years	Doctoral	Humanities&SocialScien.
P4	Female	45 - 54 years old	16 - 20 years	Masters	Humanities&SocialScien.
P5	Male	45 - 54 years old	20+ years	Bachelors	Arts&Design
P6	Male	55+ years old	20+ years	Doctoral	Humanities&SocialScien.
P7	Female	55+ years old	20+ years	Masters	IT&IS
P8	Male	25 - 34 years old	6 - 10 years	Doctoral	Business

Data collection

Qualitative data were collected and analyzed. Interviews were conducted via Microsoft Teams in a virtual environment in four sessions from October 2024 to November 2024. Faculty responses were recorded using Microsoft Teams' recording/transcription feature. In a 60-minute session, the faculty were asked some preliminary questions before populating a Mural Board. In the first section of the interview, the preliminary questions listed in Appendix B asked faculty for a brief introduction about themselves, about their academic/research background, and artistic involvement; their familiarity with GenAIs; the benefits and challenges around this technology; as well as their interests/insights on incorporating them into their classrooms, pedagogical best practices, and ethical considerations when adopting them.

In the second section of the interview, they were guided to a Mural Board to input their ideas, insights, and expectations for an AI literacy workshop tailored to their needs. Sharing the link via the Team's chat, participants opened the Mural Board shared with them. Using the colored sticker notes, faculty wrote their responses, insights, and thoughts while communicating with other participants if present. Each colored sticker note was chosen to match the color of the question listed. Given the questions posed, faculty shared their expectations, any hands-on activities required, AI literacy or readiness resources, strategies for optimizing collaborative dialogue, assessment approaches, follow-up plans, and more. A total of four boards were filled out, and then all responses were collected into

a siloed board for ease of analysis. Appendix B also provides the questions listed on the Mural Board. For both questions and participants' responses, refer to Appendix C.

Data analysis

The data collected included qualitative input from participants. A similar approach to that in Basty et al. (2025) was employed, combining human and AI in a thematic analysis. First, the author reviewed the recorded transcripts for accuracy and quality before conducting the analysis. Responses from the Mural Boards were aggregated into one board for ease of access, review, and thematic analysis. Questions thematized using this approach include Questions 3 (hands-on activities or interactive elements to include in the workshop) and 7 (follow-up activities or resources to support ongoing learning and create a community of practice around AI literacy beyond the workshop scope) from the Mural Board.

As in Basty et al. (2025), the human-AI thematic analysis combined traditional thematic analysis, following Thomas and Harden's (2008) guidelines, with Google Gemini 2.5 Flash. One researcher conducted the traditional thematic analysis, while the second researcher analyzed the open-ended responses using Gemini 2.5 Flash with a structured prompt in Appendix D. Both researchers documented their themes in spreadsheets and then compared and contrasted them. To ensure rigor, AI-generated themes were not accepted at face value. Instead, both researchers met to compare their workbooks, revisited and iteratively revisited manual and AI-generated themes, and reviewed them for any overlooked patterns, identifying convergences, refining better names, and making any necessary refinements before finalizing the results. This iterative process enabled triangulation between human interpretation and AI-assisted insights, thereby enhancing the comprehensiveness of the final themes for synthesis.

Faculty members' responses explored the benefits and challenges of AI image generators, which informed the details of major components for designing an AI literacy initiative. Furthermore, the coding categories for the Mural Board responses included technical, ethical, pedagogical, and contextual-based skills, followed by the need for continuous AI literacy support, such as institutional resources (see Figure 4).

Activity 2: Focus-Group Workshop (RQ2)

Stakeholder recruitment

Faculty from the University of Cincinnati were recruited through a targeted communication strategy. A digital flyer was created and disseminated across the institute's network, including both the main campus and regional campuses, via email listings to invite faculty to register for one of the two scheduled workshop sessions. The flyer specifically identified the workshop's relevance to faculty engaged in CCI and provided concrete examples of qualifying disciplines. In addition, it outlined the aim of the workshop (to explore the integration of image generators into educational settings by providing technical skills, pedagogical best practices, and ethical awareness) and thereby broadening appeal to educators interested in this emerging tool.

Interested faculty registered via a Microsoft Form using the link embedded in the flyer. The form included demographic queries, a consent statement to ensure voluntary and informed participation, prior experience with AI image generators, attendance at previous AI literacy workshops, and any preliminary questions intended for the workshop facilitators. To further inform facilitation, participants' perceptions were assessed using a seven-item Likert scale ranging from "strongly disagree" to "strongly agree". Items measured levels of confidence, perceived benefits and ethical concerns, awareness of pedagogical best practices, accessibility of institutional support, barriers to adoption, and perceived relevance of image generators within participants' disciplines (Appendix E).

Due to the high response volume, registration was capped to maintain an appropriate sample size for the focus group, as recommended by Boddy (2016), Hennink and Kaiser (2022), and Rundle et al.

(2019). A total of 66 faculty registered, at which point the form was closed to further applicants. Faculty members were from both UC's main and regional campuses, representing a variety of disciplines, including Arts and Design, Business, Education, Engineering and Computer Science, Healthcare and Medicine (with a focus on Nursing), Humanities and Social Sciences, Information Technology and Information Systems, and Natural Sciences. Ultimately, 51 faculty members attended the workshop, with 23 attending on the first scheduled day and 28 attending on the second day, constituting a representative cross-section of the target stakeholder group. Table 2 summarizes the demographics of the attendees.

Table 2. Participants' demographics attending the workshop

Attribute	Participants Workshop Day 1	Participants Workshop Day 2	Total
N	23	28	51
Age (years)	*n*	*n*	*n*
25 – 34	3	2	5
35 – 44	3	7	10
45 – 54	9	6	15
54+	8	13	21
Gender	*n (%)*	*n (%)*	*n (%)*
Male	11 (47.8)	8 (28.6)	19 (37.3)
Female	11 (47.8)	16 (57.1)	27 (52.9)
Non-binary	0 (0)	2 (7.1)	2 (3.9)
Not replied	1 (4.3)	2 (7.1)	3 (5.9)
Discipline	*n (%)*	*n (%)*	*n (%)*
Arts & Design	6 (26.1)	9 (32.1)	15 (29.4)
Business	1 (4.3)	2 (7.1)	3 (5.9)
Education	0 (0)	4 (14.3)	4 (7.8)
Engineering & Computer Science	2 (8.7)	2 (7.1)	4 (7.8)
Health & Medicine	4 (17.4)	4 (14.3)	8 (15.7)
Humanities & Social Science	4 (17.4)	4 (14.3)	8 (15.7)
IT&IS	4 (17.4)	2 (7.1)	6 (11.8)
Natural Science	2 (8.7)	1 (3.6)	3 (5.9)
GenAI Experience	*n (%)*	*n (%)*	*n (%)*
Yes	8 (34.8)	7 (25)	15 (29.4)
No	15 (65.2)	18 (64.3)	33 (64.7)
N/A	0 (0)	3 (10.7)	3 (5.9)
Past Workshop Attended	*n (%)*	*n (%)*	*n (%)*
Yes	7 (30.4)	14 (50)	21 (41.2)
No	16 (69.6)	14 (50)	30 (58.8)

Workshop design and setting

The workshop was designed for CCI-based HEI faculty (e.g., art, design, advertising, marketing, architecture, publishing, music, fashion, IT, or other creative fields) who were interested in and/or wished to explore how image generators can transform their teaching. The workshop was delivered as an interactive virtual session, held on two separate dates (from June 24th to 25th) via Zoom to maximize faculty participation. Structured around three interconnected pillars found through RQ1

(Figure 7), the workshop aimed to equip faculty with Technical Skills, which covered harnessing image generators for classroom enrichment; Pedagogical Strategies, focusing on best practices for blending technology with creative teaching; and Ethical Considerations, addressing the responsible navigation of AI in education. Some of the details and contents in each pillar were derived from research findings in the work of Basty et al. (2025).

The workshop began with a primer on AI and GenAI in creative and cultural disciplines. The facilitators explained important terminologies, a brief overview of image generators' functionality, and their implications in creative fields (e.g., applications, impacts, challenges, and opportunities). The introduction further delved into the importance of AI literacy for faculty and what the notion comprises based on Ng et al.'s (2021) paper on the components of AI literacy. Faculty were asked through a poll about their participation in improving AI literacy (e.g., their own, students', both), as well as stating the opportunities or challenges they foresaw or were currently experiencing with image generators within their respective discipline.

Next, the facilitators delved into the three main modules: Technical Skills, Ethical Considerations, and Pedagogical Best Practices. In the first module, they introduced AI image-generating tools, provided demonstrations, discussed prompt elements, shared limitations and advantages, and gave faculty a prompt for practice. At the end, faculty were polled on which tools they had used and what benefits those tools offered to both themselves and students. In the second module, facilitators explained the ethical challenges and strategies for navigating image generators. They also shared institutional resources, best practices, and guidelines. At the end, faculty were polled to rate a list of ethical concerns (Academic Integrity, Accountability, Bias, Copyright & IP, Fairness, Privacy, Security, and Transparency) based on their perceived risk severity. In the third module, facilitators discussed pedagogical best practices and strategies (e.g., Action-Based Learning, Experimental Learning, and Active Learning), provided actionable insights, and brainstormed assignments and assessment methods (e.g., summative and formative). At the end, faculty were polled on which pedagogical strategies worked best for them and were invited to share additional strategies.

Lastly, the workshop concluded with a summary of key takeaways, encouraging participants to engage in an AI Literacy action framework – an acronym outlining continuous engagement with AI. Furthermore, additional sources, including institutional websites, approved/licensed tools, policies/guidelines, teaching and learning resources, and academic integrity information, were shared. The workshop provided further resources, such as a comparative table of text, image, video, and music generators; a list of AI-powered tools for various applications, such as diagramming, visual design, and medical imaging; a list of AI content detectors and links to prompt engineering guides from developing companies; and information on AI education initiatives and frameworks for K-12.

Data collection

As mentioned earlier in the "stakeholder recruitment" section, to further inform facilitation, participants' perceptions were assessed in the pre-workshop registration form using a seven-item Likert scale ranging from "strongly disagree" to "strongly agree". Items measured levels of confidence, perceived benefits and ethical concerns, awareness of pedagogical best practices, accessibility of institutional support, barriers to adoption, and perceived relevance of image generators within participants' disciplines.

During the workshop, five interactive polls were conducted to gather real-time insights into participants' immediate needs, perceptions, and disciplinary contexts regarding AI image generation. These polls provided immediate feedback and fostered dynamic engagement. These polls included:

- **Poll 1 – Whose AI Literacy:** Aimed to ascertain primary motivation (personal AI literacy vs. student AI literacy). It was a single-choice question with 34 responses, showing a majority sought both.

- **Poll 2 – Opportunities and Challenges:** Sought qualitative data on perceived opportunities and challenges of integrating AI image generation into teaching. It was an open long-text question with 32 responses, revealing diverse perspectives on benefits and concerns like originality and copyright.
- **Poll 3 – GenAI Tools and Applications:** Gathered information on disciplinary backgrounds, preferred AI tools, and perceived benefits. It included short-answer and multiple-choice questions, with 31 responses highlighting Copilot as the most applicable tool.
- **Poll 4 – AI Ethical Concerns based on Risk:** Addressed ethical implications, asking participants to rank concerns and list others. It included ranking and short-answer questions, with 30 responses, frequently ranking Academic Integrity, Accountability, and Copyright & IP as "Severe risk" or "High risk".
- **Poll 5 – Pedagogy Strategies:** Gauged readiness and preferred approaches for integrating AI into teaching. It included multiple-choice and short-answer questions, with 29 responses, showing a strong preference for "A Combination" of strategies and widespread use of both formative and summative assessments.

Following the conclusion of the workshop, a feedback survey was distributed to all participants to gather their reflections, evaluate the workshop's effectiveness, and identify areas for future development (Appendix F). The survey employed a mixed-methods approach, incorporating open-ended qualitative questions, yes/no questions, and Likert scale questions to capture feedback across various categories, including workshop logistics, impact, confidence in AI use, awareness of opportunities, resources, barriers, and ethical considerations. A total of 24 responses were received for the post-workshop feedback survey.

Data analysis

Quantitative data from pre- and post-workshop survey responses using a five-point Likert scale were analyzed to evaluate the immediate impact on faculty perceptions (see Q11 in Appendix E and Q6 in Appendix F). Data from the Likert scale ranged from "Strongly Disagree" to "Strongly Agree" and were coded numerically from 1 to 5, with reverse-worded questions appropriately reverse-coded. Average scores were calculated for each of the 7 Likert scale items, and pre- and post-workshop means were compared for the seven Likert scale items. Three identical items – Use_Confidence, Integration_Best Practices, and Institutional_Access – were selected from pre- and post-workshop for direct comparison. A Shapiro-Wilk test was conducted (Shapiro & Wilk, 1965), which confirmed normality (Pre: $W = 0.92$, $p = 0.46$; Post: $W = 0.95$, $p = 0.75$), but due to the ordinal nature of Likert data and modest sample size (n = 24), a Wilcoxon Signed-Rank test (Woolson, 2007) was used.

Qualitative data from the workshop polls and open-ended survey responses from the post-workshop form were analyzed thematically using the human-AI thematic analysis approach, as described in Basty et al. (2025), and repeated as in the analysis of Activity 1 data. Questions thematized with GenAI were the free-text poll questions and questions Q1 (Most valuable takeaway from the workshop) and Q3 (Using what was learned in the classroom or research) from the post-workshop feedback form. Responses reflected the faculty's perceived confidence, understanding, and readiness for adopting AI image generators. The thematic coding categories for these responses included opportunities (e.g., conceptualization, productivity, feedback assistant, etc.), benefits (e.g., increased productivity, teaching, creativity, student engagement, and skill development), challenges and limitations (e.g., cognitive, educational, ethical, legal, and job security concerns).

RESULTS

RQ1 (ACTIVITY 1): WHAT ARE THE FOUNDATIONAL COMPONENTS REQUIRED FOR AN AI LITERACY INITIATIVE PROMOTING THE INTEGRATION OF IMAGE GENERATORS IN CCI-BASED COURSES?

GenAI adoption in higher education

Respondents' discussion revealed several barriers and catalysts to GenAI adoption in classrooms (Table 3). The most significant barriers identified were resistance from faculty (e.g., senior members), ethical concerns over misuse and academic integrity, and a lack of standardized guidelines for implementation and citation. Respondents also mentioned a lack of technical skills, the complexities with various GenAI platforms, along with departmental restrictions, insufficient support on curriculum changes, and worries over their roles or skills going obsolete. Conversely, catalysts for GenAI adoption included a re-evaluation of pedagogical approaches (e.g., redesigning assignments and assessment strategies); fostering collaborative and interdisciplinary dynamic among faculty, students, and GenAI tools; and the need for university admins and technical professionals' support. It will ultimately reduce the burden on educators and students, promote Human-Computer Interaction research, and increase access to institutionally licensed AI tools.

Table 3. Barriers and catalysts to adopting AI image generators in classrooms (n = 8 focus group participants)

	Themes	Representative quotes
Bar	Technology acceptance concerns/refusals *(N = 6)*	"Some people, some faculty members do not want any artificial intelligence used in their class." "I personally hate this fear-based, this fear-mongering that happens around AI, and I think it means that a lot of people completely disengage with it as a productive tool at all …"
	Ethical Implication Concerns *(N = 5)*	"… catching our students use it inappropriately, but then also as like a graduate student wanting to use it in interesting and productive ways, but then concerned about the ethics about being caught." "The students need to know how to do it effectively. And they need to know how to do it ethically."
	Faculty Unpreparedness *(N = 5)*	"I don't know how to connect that to the curriculum yet, but I'm very interested." "We're seeing a lot of AI use in our classes and trying to figure out how to adjust things like assignments... to prevent generative AI use in writing assignments."
	Lack of standardization or Leadership engagement *(N = 3)*	"It's very hard to teach some of these things because the syllabus is often restricted by the department …"; "… where there are places that people could be using AI, properly citing it … we don't have kind of set standards across fields and things yet…"
	Heterogeneous GenAI platforms *(N = 2)*	"We're talking about different platforms doing their own thing, building their own models with their own idiosyncrasies." "OpenAI, DALL-E, Canva Pro, Runway, each has kind of pros and cons … it's kind of like the Wild West right now."
	Concerns over talents/skills going obsolete *(N = 1)*	"I've talked to faculty who think that it's an ethical problem because we're always teaching writing. And there's a part of me that … I get that."

	Themes	Representative quotes
Cat	Pedagogical changes/innovations *(N = 8)*	"And students and instructors have to be trained to deliver assignments that prevent this." "So I'm open to like using it more creatively in the classroom. I think it could be a really interesting way to engage students in new ways …"
	Faculty, student, and AI dynamic curiosity *(N = 3)*	"And students and instructors have to be trained to deliver assignments that prevent this … I seem to have a hard time deciding to begin with." "Like [Name], have some concerns about students and how they're leveraging it for assignments, and that's one piece of it ."
	Interdisciplinary collaboration *(N = 2)*	"… perhaps we need an engineering team that is solely focused on AI infrastructure." "… it might be better having an AI engineering team in-house at the university." "If the folks at Canvas are developing something on their own, then perhaps partner with them."
	Increase HCI research *(N = 2)*	"… it might be better having an AI engineering team in-house at the university. That is developing the UI basic infrastructure …" "If the folks at Canvas are developing something on their own, then perhaps partner with them."
	Emphasis on ethical use *(N = 2)*	"I'm very excited because when I first started teaching, professors were very concerned about people using cell phones in class …" "And the students need to know how to do it effectively. And they need to know how to do it ethically."
	Free/accessible tools *(N = 1)*	"I have used ChatGPT and then Copilot, but mostly Copilot I haven't found as helpful, but mostly because it was UC-sponsored."

Based on their personal and classroom experiences, respondents shared the benefits (Figure 1) and challenges (Figure 2) of image generators. These tools were particularly valued for enhancing visual creation and modification, increasing efficacy and productivity, and supporting visual facets in research and development. Examples included utilizing tools (e.g., Adobe Firefly, DALL-E, or Midjourney) to produce early-stage design concepts for client discussions, leveraging Photoshop's AI features for efficient image editing, and applying AI-generated visuals in construction and urban planning contexts.

Conversely, respondents discussed ethical, pedagogical, and socio-cultural concerns. Ethical issues included technical limitations (e.g., insufficient or poor-quality visuals to aid in American Sign Language), misinformation risks (e.g., deepfakes and hallucinations), and environmental concerns due to high resource consumption. Socio-cultural concerns included bias, copyright, and intellectual property issues, as well as uncertainties surrounding the future of the creative industries, the job market, and the value of human creative skills. Pedagogical challenges included the lack of comprehensive research into GenAI's educational applications and concerns over academic integrity, such as anticipated or observed instances of plagiarism. These discussions highlighted anthropocentric considerations, particularly the significance of human emotion and authenticity in creative works, a theme noted as essential for student discourse.

Respondents provided a range of suggestions for pedagogical solutions and best practices for integrating image generators. They were thematized into ethical, pedagogical, and socio-cultural-behavioral changes (Figure 3). Ethical recommendations included developing usage policies that outline expectations, addressing ethical concerns in class discussions, assignments, and projects, and promoting the citation of AI-generated content to support accountability and uphold academic integrity. Peda-

gogical changes involved hands-on experiences (e.g., creating simple AI models or collaborative assignments that require student reflection or group projects to support peer learning), blended assessment approaches (e.g., combining traditional exams with revised rubrics that help assess students' GenAI use and disclosure), and enhanced student-faculty communication. Socio-cultural and behavioral changes emphasized the importance of staying current with emerging tools, encouraging human-AI co-creation, and discussing the broader socio-cultural implications of these technologies to prepare students for an AI-driven workforce. Finally, respondents highlighted the importance of using image generators as tools to complement human efforts, not to replace our creativity and skills.

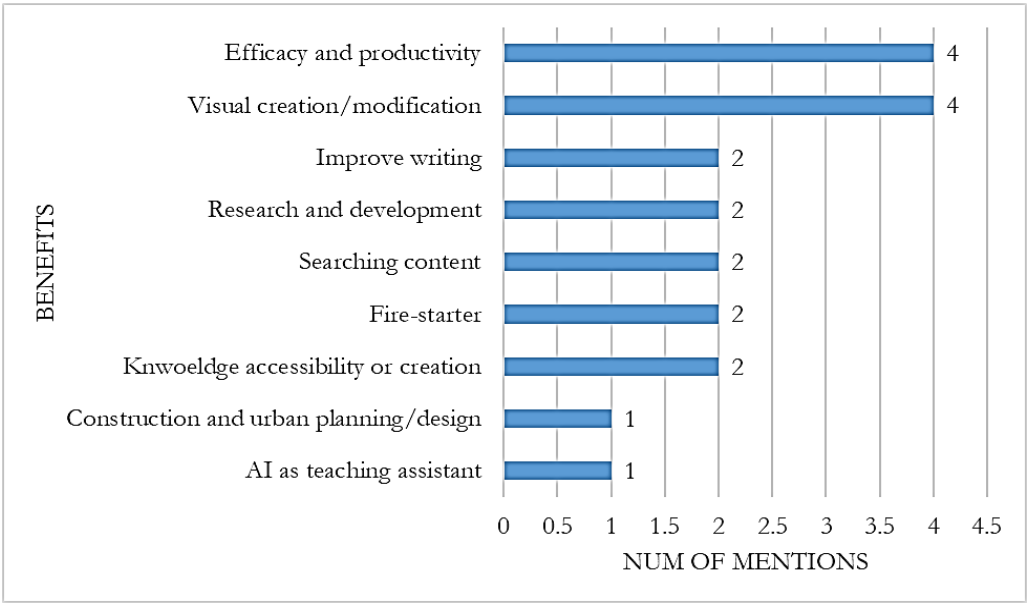

Figure 1. Benefits of integrating AI image generators into CCI-based courses (n = 8 focus group participants)

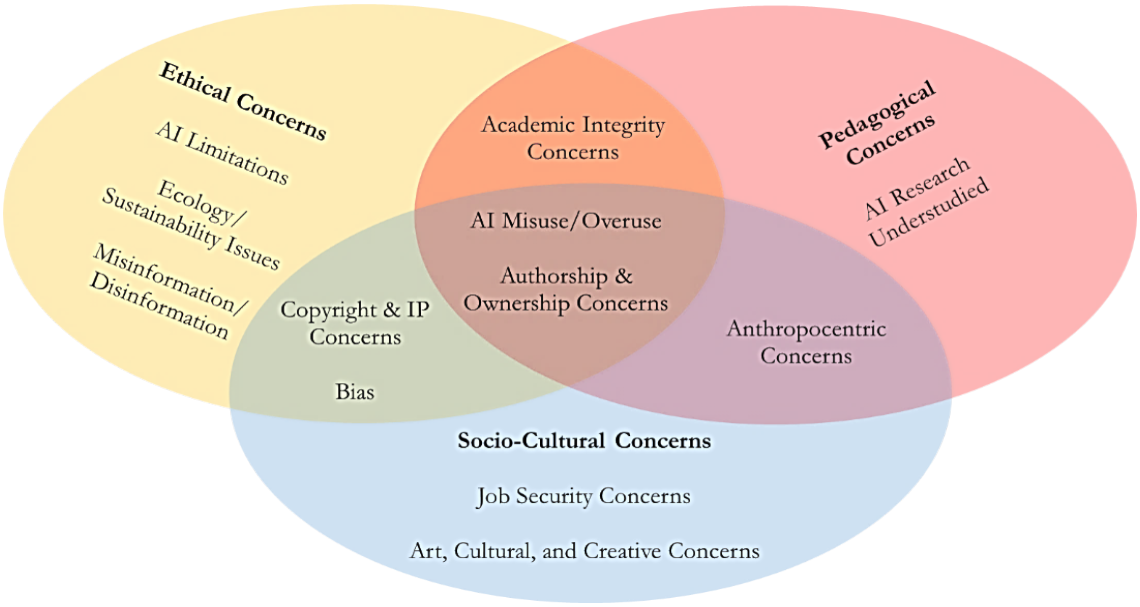

Figure 2. Challenges in integrating AI image generators into CCI-based courses (n = 8 focus group participants)

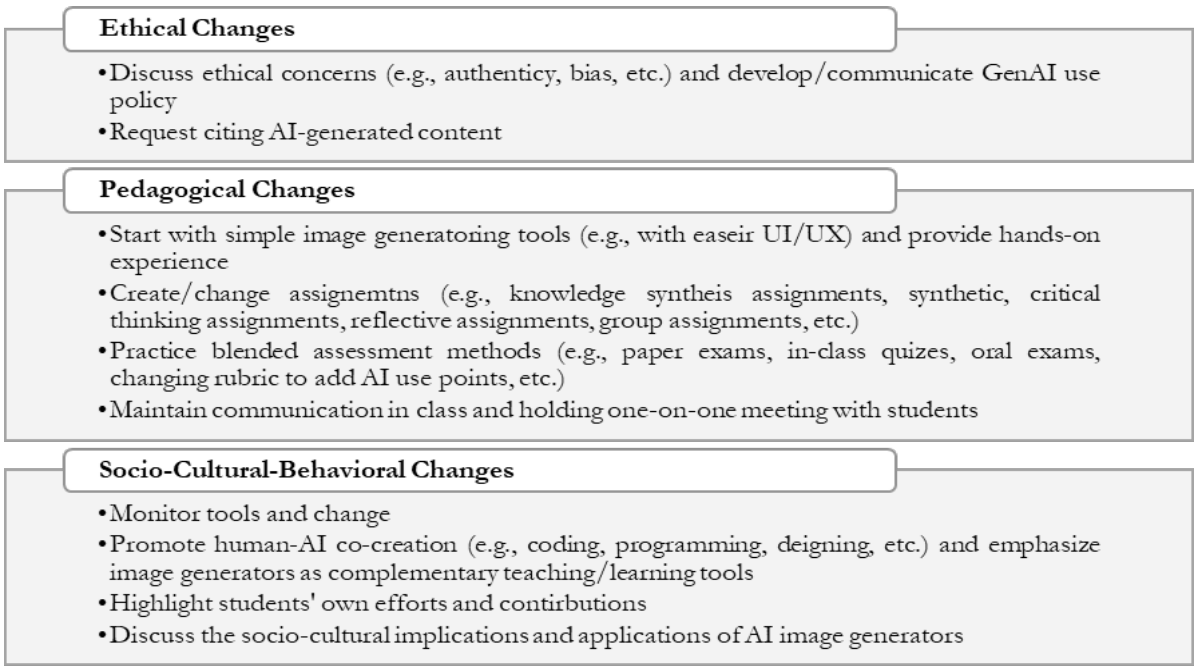

Figure 3. Suggested strategies and best practices for integrating AI image generators into CCI-based courses (n = 8 focus group participants)

AI literacy initiative structure

Based on insights from the Mural Board (Appendix C), participants in an AI literacy workshop expect to acquire technical proficiencies (Technical Skills), familiarity with AI platforms (AI Applications), be able to identify and address ethical issues (AI ethics), and pedagogical best practices and strategies, which indicates technical, ethical, course-based and practical, and pedagogical topics (AI in Pedagogy) for the workshop (Figure 4).

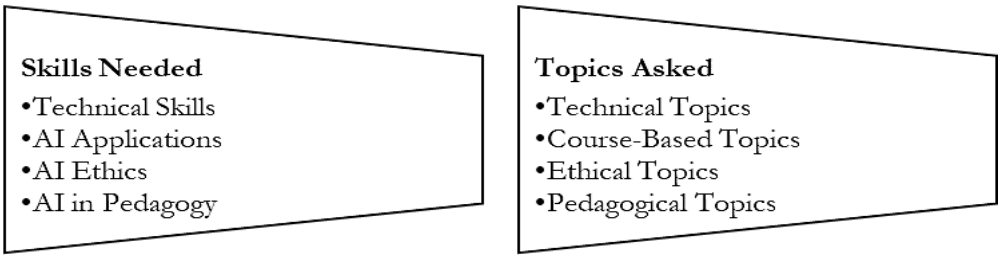

Figure 4. Faculty expectations for AI literacy workshop content (n = 8 focus group participants)

Based on the Mural Board (Appendix C), respondents shared a multifaceted approach to training faculty on image generators via a workshop. They suggested hands-on experience with various tools and a comprehensive curriculum encompassing technical modules on AI functionality and prompt engineering, as well as demonstrations of both academic and commercial AI platforms. Additionally, exercises were included in applying GenAI, including image generators, to real-world course applications and use cases. Emphasis was placed on addressing ethical concerns surrounding these tools, including discussions of their limitations, academic integrity, and copyright. For effective learning, respondents suggested pre-workshop assignments, cross-disciplinary collaboration, direct practice with AI tools, and a curated repository of shareable resources (e.g., articles, videos, templates, policy documents, licensed software, code or prompt libraries, etc.). The effectiveness of the workshop can be

measured through short-term and long-term evaluation methods (e.g., surveys, follow-up meetings) to track the integration of GenAI into teaching practices. Finally, key design principles mentioned for an AI literacy workshop included a hands-on element on AI platforms, dedicated time without interruptions, simplifying exercises by offloading complex and technical tasks to facilitators, and securing funds to encourage participation.

RQ 2 (Activity 2): To What Extent Does an AI Literacy Workshop, Designed Around Foundational AI Literacy Components, Influence HEI Faculty's Perceived Confidence, Understanding, and Readiness to Integrate AI-Based Image Generators into CCI-Based Courses?

Pre-workshop perceptions

In the pre-workshop registration survey form, 70.6% (n = 36) of the respondents replied that they don't use any image generators. The other 29.4% (n = 15) had some or full familiarity with tools, including but not limited to Copilot, DALL-E, Midjourney, Adobe products, Stable Diffusion, and ChatGPT.

According to the Likert scale, 74.5% (n = 38) of respondents agreed that AI image generators provided benefits and opportunities for both students and faculty, while 21.6% (n = 11) expressed neutrality, and 3.9% (n = 2) disagreed with this notion. In addition, 66.6% (n = 34) of respondents felt that image generators are important to them and their discipline, both now and in the future, whereas 29.4% (n = 15) stated they felt neutral, and 4% (n = 2) disagreed.

Furthermore, 70.6% (n = 36) of respondents agreed that AI image generators raise ethical concerns still needing to be addressed in education, whereas 19.6% (n = 10) stated they were neutral, and 9.8% (n = 5) disagreed. In terms of insufficient AI literacy sources, programs, and initiatives being the main barriers to faculty adoption and use of image generators, 37.2% (n = 19) of respondents agreed, 43.1% (n = 22) felt neutral, and 19.6% (n = 10) disagreed.

In-workshop engagement and immediate feedback

The in-workshop polls captured real-time perceptions, concerns, and interests during the workshop. They provided qualitative data that elaborated on the nature of barriers and opportunities identified, offering immediate insights into participants' engagement and understanding.

Poll 1, "Whose AI Literacy?", asked participants if they were primarily attending to enhance their own AI literacy, identify strategies to enhance their student learning outcomes, or both. Results showed the majority (32 out of 34 respondents) chose "Both".

Poll 2, "Opportunities and Challenges," provided open-ended responses on perceived opportunities and challenges around image generator integration into CCI-based courses (Table 4). In terms of opportunities, image generators excel at brainstorming and conceptualization, enabling students and faculty to make quick visual aids for brand ideation, boost productivity and creativity by making "tedious tasks easier," and accelerate concept development. These tools also serve as feedback assistants/creative partners, improve prototyping, and help enrich coursework and teaching. Finally, they streamline information flow and improve research outcomes by enabling semantic search across vast sources and visualizing various types of information, including both fake and evidence-based, for better decision-making.

As for challenges, respondents consistently mentioned that defaulting to image generators can become a "crutch," leading to over-reliance that would erode problem-solving, critical thinking, and creative skills. Concerns about academic integrity violations emerged, given concerns over students facilitating "plagiarism" by posing AI-generated content as their own work. "Well-established and fair evaluation criteria" to measure AI vs. students' content remain elusive. Institutional policies restrict

access to only a few licensed AI platforms, which creates inequities in tool availability and learning experience. Additional issues included ethical concerns (e.g., anthropocentric challenges, inaccuracy, bias, and other ethical dilemmas), legal and ownership challenges (e.g., IP uncertainties, balancing copyright law with innovation, and the authenticity of students' works), and worries over jobs, roles, and/or skills going obsolete or degraded.

Table 4. Opportunities and challenges of integrating AI Image Generators into teaching (n = 32 workshop poll responses)

	Themes	Representative Quotes
Opp	Brainstorming/Conceptualization/Visual Aid *(N = 10)*	"Opportunity: creating visual aids for teaching;" "AI image gen allows my students to quickly visualize brand concepts, add ideas, and personas, etc., which enhances creativity and practical thinking."
	Increasing Productivity & Creativity *(N = 8)*	"Helping with creating concepts and making tedious tasks easier;" "obtain knowledge and skills that make it easier to do creative and intellectual work."
	Feedback Assistant & Creative Agent *(N = 3)*	"I use AI to help students gain feedback on Resume/Cover Letter templates, so it's been helpful to give student examples;" "serve as a creative partner to more advanced practitioners."
	Prototyping *(N = 2)*	"Could aid in instrument panel prototype generation to evaluate ergonomics;" "teach students to use to ideate and prototype."
	Enhancing Coursework & Teaching *(N = 3)*	"In Psychology, Pro: Opportunity to offer more engaging coursework." "able to create images that are tailored to topics of my courses easily for student."
	Streamlining Information & Improving Outcomes *(N = 8)*	"Obtain knowledge and skills that make it easier to do creative and intellectual work;" "Semantic search and return from large and varied sources of information for research purposes."
Cha	Cognitive Concerns *(N = 16)*	"Challenge: over-reliance on AI leading to critical thinking erosion over time." "Easy to say that students use AI as a crutch and encourage students to use less critical thinking skills."
	Educational Concerns *(N = 4)*	"It's really hard to develop well-established and fair evaluation criteria;" "Plagiarism challenge;" "current [institutional] policy limits authorized platforms to just a couple, which are not particularly useful..."
	Ethical Concerns *(N = 16)*	"Bias in image generation;" "The lack of accuracy when trying to generate a specific AI-generated image that attempts to show a specific feeling or emotion in the image."
	Legal & Ownership Challenges *(N = 11)*	"Using AI to create a product and misrepresenting it as their own;" "The copyright implications of generating new images;" "… The AI was trained on the IP of working artists without their consent."
	Workforce & Skill Displacement *(N = 5)*	"AI can easily replace entry-level teachers;" "Skills we teach will be replaced by bots (animation for instance);" "Artistic degradation."

Poll 3, "GenAI Tools and Applications", gathered information on primary disciplines, most applied tools, other tools used, and perceived benefits. Out of commonly used image generating tools (Copilot, Adobe Firefly, DALL-E, Midjourney, and Stable Diffusion), "Copilot" was ranked to be most (25 out of 31) used whereas amidst "Other" tools named, "ChatGPT" was the most mentioned tool (9 out of 31), then Adobe Products (5 out of 31), and then Gemini (3 out of 31). Additional identified tools included Claude, Perplexity, Procreate, BearcatGPT, Twine, Flux, Charm IQ, Figma, Canva Pro, Copy.ai, Runway, Magnific, and Magic School. Table 5 lists the benefits respondents identified for both them and for students when utilizing and/or implementing image generators.

Table 5. Reported benefits of AI image generators for faculty and students (n = 31 workshop poll responses)

Themes	Representative quotes
Productivity & Efficiency *(N = 10)*	"Time savings of creating or editing images;" "saves time and generates ideas."
Teaching & Learning Enhancement *(N = 15)*	"Creating images easily and quickly for teaching;" "I have mainly used it to create grading rubrics, and that has been extremely helpful!"
Conceptualization & Creative Ideation *(N = 13)*	"Me: generate images that I can use to convey a complex issue, either flow charts or graphic images;" "Flowcharts, general design tasks."
Student Engagement & Assessment *(N = 6)*	"Students: they are often hesitant to let me know what they don't really understand … use AI to create an image that … illustrates how an inhaled microbe gets into the brain;" "Giving students a chance to put themselves in their educational path."
Skills Development & Prompt Engineering *(N = 5)*	"Perplexity and copilot have been helpful with prompt engineering for students to learn how to critically think prompts for getting good results;" "Familiarizing students with these tools is vital for career success."

Poll 4, "AI Ethical Concerns based on Risk", asked participants to rate ethical concerns, as shown in Figure 5, by risk severity, and naming other unmentioned risks. "Academic Integrity," "Accountability," and "Copyright & IP" were the top three consistently ranked with higher risk severity by multiple participants. Additional concerns mentioned included concerns over accuracy, environmental impacts, mental and cultural disconnection, over-reliance, skill-degradation, and reputational depletion.

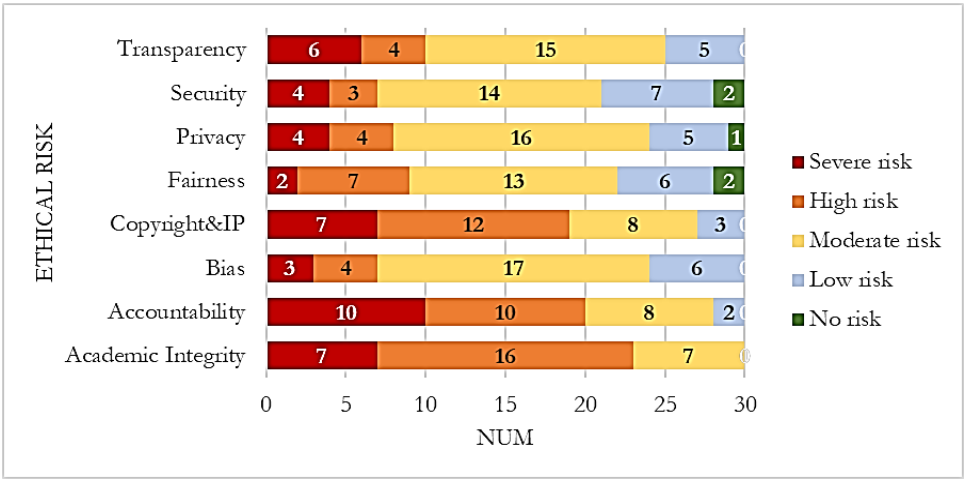

Figure 5. Ethical concerns around AI image generators ranked by severity (n = 30 workshop poll responses)

Poll 5, "Pedagogy Strategies," explored preferred pedagogical strategies discussed during the workshop. The data suggested that many faculty opted to combine the pedagogical strategies (Action-Based Learning, Active Learning, and Experimental Learning) (21 out of 29). Additional strategies mentioned included case studies, community learning, problem-based learning, simulation, peer-learning, game-based learning, and reflective/intuitive exploration. Furthermore, some faculty members mentioned combining AI and non-AI assignments to enhance students' foundational skills (e.g., critical thinking, creative thinking, communication skills, etc.) while learning to work with these tools and critiquing AI-generated content. As for assessment type (formative, summative, or both), most respondents (22 out of 29) voted for a combination of formative and summative assessment methods.

Post-workshop impact and future needs

The post-workshop feedback survey captured the faculty's intention for future actions rather than the long-term impacts of the workshop on teaching practices. However, the survey questions, such as the Likert scale, assessed the immediate impact of the workshop on faculty's confidence, knowledge, and perceived ability to integrate AI image generators into their work and pedagogy.

When asked about the most valuable takeaway and intended application, Q1 (Most valuable takeaway from the workshop) and Q3 (Using what was learned in the classroom or research), respondents offered a range of answers. From Table 6, the most valuable takeaways from the workshop included the value of hands-on experimentation and learning the basics; being aware of tools and resources, both institutional and external; pedagogical applications and increasing student engagement; collaboration and creative possibilities with image generators; ethical awareness and promoting critical thinking and frameworks; and implementing strategic AI literacy frameworks.

Table 6. Faculty-reported most valuable takeaway from the AI literacy workshop (n = 24 post-workshop survey responses)

Themes	Representative quotes
Hands-On Experimentation and Basic Skills *(N = 4)*	"Trial and error is key …" "experimenting with the basics" "Learning the basics."
Awareness of Tools and Resources *(N = 6)*	"Learning about various image-creating options." "Links to various tools and websites." "Access to UC tools and resources."
Pedagogical Applications and Student Engagement *(N = 3)*	"Understanding how I might use AI to generate images in my classes." "The potential of AI to increase student engagement."
Collaboration and Creative Possibilities *(N = 5)*	"I liked the idea of C3 … collaborate, co-exist, and co-create with AI." "You can create and recreate so many visuals both real and fake." "Opened doors for generating rapid concept arts, prototyping textures, characters, and environments."
Ethical Awareness and Critical Frameworks *(N = 4)*	"I appreciate your openness, when there is so much negative talk around use of AI in media generation." "The ethical issues around these tools and AI art."
Strategic Frameworks for AI Literacy *(N = 2)*	"The AI literacy action framework." "It was useful to see these tools can be implemented thoughtfully and not just as novelties."

From Table 7, respondents mentioned that they will be using what they learned from the workshop to enhance their teaching by creating examples, visual aids, and additional images to help in their teaching; develop assignments and assessment based on provided examples in the workshop; creating student-centered creative projects that would allow leveraging or evaluating AI image generators and their outputs by students; the importance of ethics, policies, and critical reflection (e.g., good vs. bad uses of AI and their impacts); tool familiarization and skill building for both students and faculty; expanding image generators' usage to research as in creating simulations; and for creative ideation and

rapid prototyping. Furthermore, 83.3% of respondents (n = 20 out of 24) also reported that examples and demos shown were relevant to their discipline.

Table 7. Intended applications of workshop learnings in teaching and research (n = 24 post-workshop survey responses)

Themes	Representative quotes
Teaching Enhancement *(N = 8)*	"Will include in my lecture presentations …;" "I will create visual aids for teaching and images I can use to distinguish my courses via Canvas."
Assignment & Assessment Development *(N = 7)*	"Using the example assignments [in the workshop], see what I can use or set as my base to revise or develop new assignments."
Student-Centered Creative Projects *(N = 5)*	"I am interested to test how well they [students] would work in visual storytelling and performance art … ask them each class what they learned and critically evaluate the works;" "In terms of image creation, I might give students team assignments to come up with cover arts for music tracks …"
Ethical, Policy & Critical Reflection *(N = 9)*	"Design some assignments to have students critique AI images and their own art and reflect on their creative journey, about authorship, copyright, and co-creation;" "Show my students examples of good and bad uses then give them example tasks or case studies to help them identify ethical issues ..."
Tool Familiarization & Skill Building *(N = 7)*	"I will start learning one tool, probably Copilot, first before implementing in class;" "As a creative catalyst and digital media tool to help my students ideate, prototype, and create preliminary drafts for experimentation."
Research & Simulation Integration *(N = 3)*	"Expand and integrate AI simulation guided skills;" "I'll use Copilot, DALL-E, or Gemini with my students to recreate fragmented artifacts and visualize hypothetical restorations in real time."
Creative Ideation & Prototyping *(N = 7)*	"Help with sketches and concepts;" "As a creative catalyst and digital media tool to help my students ideate, prototype, and create preliminary drafts for experimentation."

For Q7, respondents suggested a range of resources for adopting AI image generators into teaching. These included varied case studies (e.g., general, discipline-based, legal, and ethical) compiled in a live repository, along with quick-start guides, demos, and hands-on activities that are discipline-based and enriched by experimental learning and ethical adoption guides. They emphasized tailoring resources to both technical and non-technical faculty across CCI-related disciplines. Several respondents also requested more prompt engineering guides, such as libraries of effective prompts for reference. Finally, most requested expanded access to tools, both institutionally licensed and external, as well as greater interoperability with other technologies (e.g., pro-accounts, sandbox environments, GPU credits, preconfigured pipelines, and simulations).

For Q8, institutional barriers that challenged faculty in adopting image generators into their department included limited access to tools, as well as resources and budget constraints. Respondents called for more institutionally licensed tools and platforms, the challenge of accessing or introducing external resources, and the struggle around affordance (financially, cognitively, and time-wise) to learn and integrate external image generators. Some also pointed to cultural and policy resistance, citing a lack of communication from institutional leadership and generational gaps among faculty. Finally, respondents expressed interest in more workshops, webinars, and seminars on AI literacy to support their ability to learn, use, and apply image generators.

Based on the analysis of the five-point pre-workshop and post-workshop Likert scale (Q6), the Shapiro-Wilk test indicated that the data were not significantly different from a normal distribution – Pre ($W = 0.92$, $p = 0.46$) and Post ($W = 0.95$, $p = 0.75$) – meeting the assumption of normality. Results from the Wilcoxon Signed-Rank test indicated a statistically significant difference between the pre- and post-surveys ($V = 0$, $p = 0.016$). This suggested significant changes in ratings from pre-workshop to post-workshop. While all the data trends showed a positive upward shift, the three questions tested from the pre-workshop and post-workshop surveys were Use_Confidence, Integration_Best Practice, and Institutional_Access, given the identity in both the pre-workshop and post-workshop surveys. They demonstrated a clear and substantial upward trend and suggested a meaningful impact from the workshop. These changes are illustrated in Figure 6.

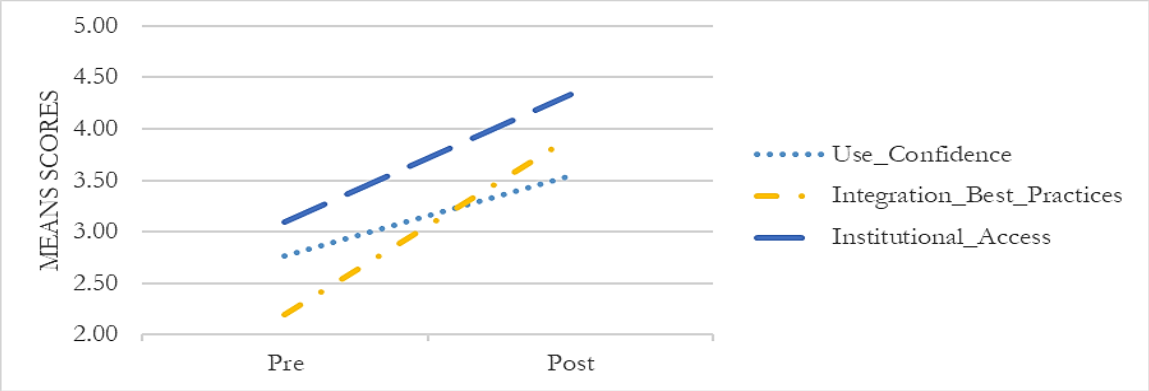

Figure 6. Wilcoxon Signed-Rank test results from pre- and post-workshop surveys (n = 24 paired responses)

Additional reports from the post-workshop survey indicated that most respondents (n = 23 out of 24) agreed that they were aware of ethical concerns surrounding AI image generators and how to address them. More respondents (n = 20 out of 24) agreed that they grew aware of more opportunities for utilizing these tools in classrooms, research, and work. Respondents (n = 18 out of 24) agreed that they also developed an appreciation for image generators as complementary tools in the teaching and learning process. Post-workshop, respondents (n = 17 out of 24) agreed that they felt more confident in their AI literacy, specifically in knowing and understanding, using and applying, evaluating and creating, as well as identifying and addressing ethical issues.

Based on Figure 6 and the corresponding data, it was evident that the most significant changes observed were in participants' perceptions regarding the integration of best practices, access to institutional support, and confidence in using GenAI in their classrooms. This data, coupled with qualitative analysis, indicated that the workshop effectively outlined the best practices for incorporating GenAI into teaching and informed participants about available resources provided by the university. Additionally, by offering information and demonstrating the use of GenAI during the workshop, participants' confidence in utilizing these technologies was notably enhanced.

DISCUSSION

This study incorporated focus group methods (interviews and a workshop) to devise an AI literacy initiative tailored for CCI-focused faculty in higher education on adopting image generators. First, it analyzed faculty perceptions on the foundational components needed for an AI literacy initiative (RQ1). Then, an AI literacy workshop was informed, developed, and assessed to understand the impacts on faculty's perceived confidence, understanding, and readiness to integrate AI image generators. A mixed-methods approach was employed, initially with eight qualitative respondents (Activity

1) and subsequently with 51 qualitative and quantitative respondents (Activity 2), utilizing a combination of statistical analysis and human-AI thematic analysis (Basty et al., 2025). Findings indicated a breadth of insights in response to the research questions proposed in this study.

Foundational Components Required for AI Literacy Initiative (RQ1)

Faculty members highlighted that an AI literacy initiative should primarily focus on technical skills, ethical awareness, and pedagogical strategies around image generators and their adoption. They shared their various expectations, such as exposure to various image generators and understand their functionalities; learn how to apply them (practical applications) in their creative and cultural courses and teaching practices; address the ethical implications around these tools (e.g., academic integrity, bias, copyright and IP, accountability, etc.); and innovative teaching practices (e.g., blend image generators into traditional teaching methods, providing hands-on activities that promote collaborative learning techniques, and designing assignments and assessments around student-AI works). Overall, an AI literacy initiative, such as a workshop, must equip faculty with technical skills, ethical considerations, pedagogical strategies, practical applications, and continuous AI literacy support resources (Figure 7). It will provide a comprehensive AI literacy that will empower faculty through the right skills to effectively and responsibly adopt image generators into their creative and cultural teaching practices, courses, and disciplines.

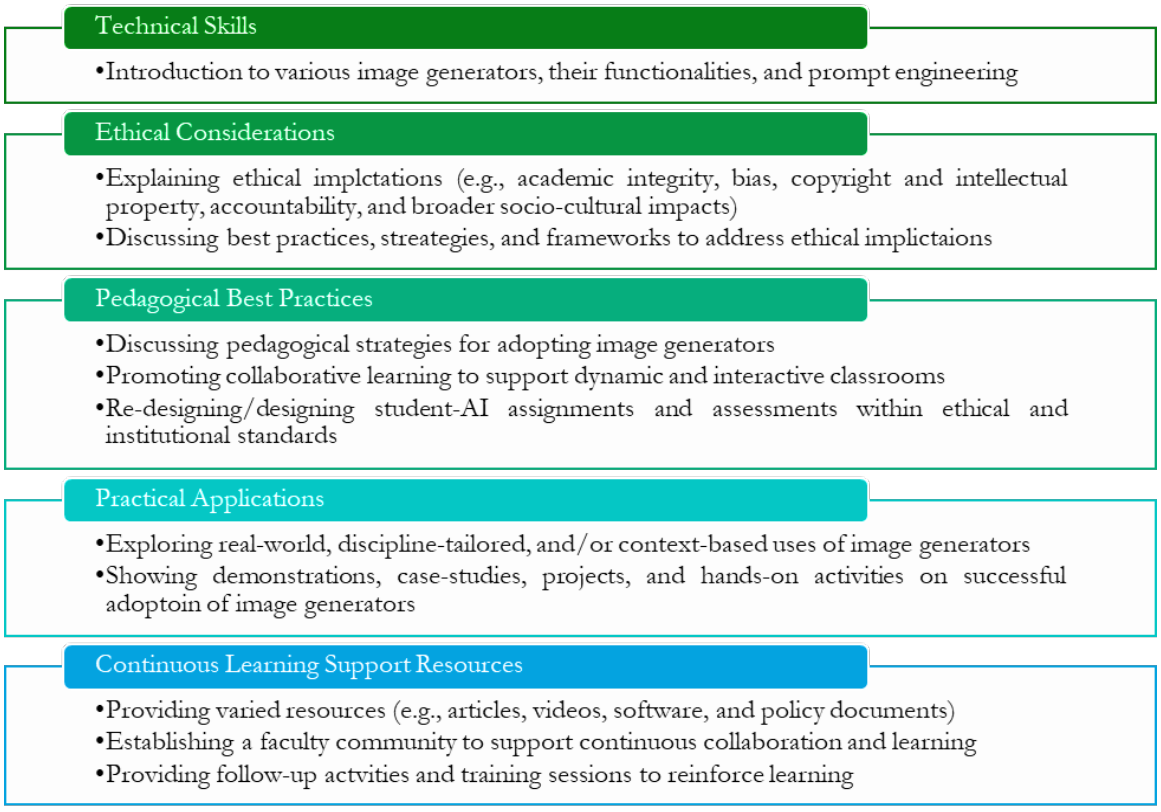

Figure 7. Foundational components for AI literacy workshop design (n = 8 focus group participants)

AI Literacy Workshop's Influence on HEI Faculty's Perceived Confidence, Understanding, and Readiness to Integrate Image Generators (RQ2)

Post-workshop feedback indicated that the designed workshop positively impacted faculty's perceived confidence, understanding, and readiness to integrate image generators into their creative and cultural courses. The workshop structure, developed around the findings of RQ1 (Figure 7), focused on technical skills, ethical considerations, and pedagogical best practices. These were aimed at addressing key barriers identified in prior research (Basty et al., 2025) and through the focus group findings in Activity 1. Overall, the workshop appeared to foster a sense of preparedness among faculty regarding the integration of image generators. This readiness was further supported by qualitative responses (Table 7), in which faculty articulated their intentions and potential applications within their courses. While these responses reflect immediate intentions rather than actual long-term implementation, they indicate the workshop's potential in reducing psychological and knowledge-based barriers to GenAI adoption.

Post-workshop feedback survey responses, particularly those utilizing a Likert scale (Figure 6), indicated a notable increase in faculty confidence in using image generators. This suggests that the workshop's technical and practical components may have helped demystify technical aspects of AI image generators, potentially reducing a barrier to adoption. Additionally, faculty reported feeling more equipped with strategies and best practices for adopting image generators into their pedagogy, followed by further access to institutional resources for reference. This suggests that the pedagogical strategies presented were perceived as actionable and relevant. From the post-workshop survey, faculty also reported an enhanced understanding of ethical implications around image generators and how to address them, indicating that the workshop provided a framework for responsible integration. Lastly, but not least, faculty reported increased awareness of opportunities for utilizing image generators, as well as an expanded perception of the potential benefits of these tools. Thus, the workshop fostered a sense of deeper appreciation for image generators as complementary tools for teaching. This attitudinal shift is important for moving beyond a perception of GenAIs as a threat or a mere novelty towards a potentially valuable pedagogical aid.

Overall, the increase in self-reported AI literacy and quantitative findings across various dimensions (knowing, understanding, applying, evaluating, creating, and addressing ethical issues) underscored the workshop's comprehensive nature and influence. By addressing these multifaceted aspects around image generators in CCI-based disciplines in higher education, the workshop served as a solution to reducing perceived barriers to the adoption of these technologies in higher education. However, there is a need for ongoing institutional support, as faculty's qualitative reports also highlighted prevailing institutional barriers. These included limited access to licensed tools and resources, budget constraints on affording external platforms, a lack of consistent communication from departments, and even generational gaps among faculty to implement changes.

Connecting to Existing Frameworks

Study findings not only align with existing frameworks, such as TPACK and UNESCO's AI Competency Framework for Teachers, but also address limitations identified in prior literature discussed in the Background Literature section. As discussed earlier, TPACK treated ethical considerations as context-dependent rather than as standalone principles (Gunder & Ford, 2025). Faculty in this study emphasized the need for and importance of explicitly focusing on ethical awareness, guidance, and strategies when adopting image generators. It underscored ethical literacy as a core component of any AI literacy initiative and calls for ethically grounded revisions of TPACK, especially for creative and cultural disciplines.

Similarly, while UNESCO's AI Competency Framework promotes the use of human-centered and ethical AI, it lacks discipline-specific depth and practical implementation strategies for higher education faculty, especially in the evolving creative and cultural disciplines (Gunder & Ford, 2025; Miao & Cukurova, 2024). The faculty-defined components in this study – Technical Skills, Ethical Awareness, and Pedagogical Strategies as core modules along with practical applications and continuous support – offer a more granular and actionable structure for AI literacy initiatives. These components respond directly to the gaps in UNESCO's framework by emphasizing hands-on engagement, interdisciplinary collaboration, and tailored resources for non-technical educators.

Moreover, the study contributes to technology adoption theories, such as Davis' Technology Acceptance Model (TAM), introduced to understand and predict the adoption of new technologies (Davis, 1987; Gupta et al., 2024). Faculty responses revealed that access to tools, ethical clarity, and pedagogical relevance are critical for adoption – echoing key tenets of the Technology Acceptance Model (TAM), which highlight relevance, usability, and trust as essential for successful adoption. By empirically identifying and validating key components through a mixed-methods approach, the study provides grounds for a refined model for AI literacy that builds on existing frameworks while addressing their limitations in creative and cultural education.

Study Contributions

This study has multiple contributions. The first is empirical. Wobbrock (2012) explains that empirical contributions in Human-Computer Interaction (HCI) encompass new findings discovered through systematic data gathering and analysis (e.g., field studies, interviews, focus groups, surveys, usability tests, case studies, diary studies, ethnography, etc.) from various scientific studies and kinds. We systematically collected data through focus group methods (interviews and surveys) from HEI faculty in CCI disciplines. The second is methodological, for this study incorporated a human-AI thematic analysis approach, leveraging GenAI while combining with traditional thematic analysis methods to analyze the data. The third contribution is artifactual. According to Wobbrock (2012), artifact contributions in HCI describe inventions, which include new systems (e.g., architectures, tools, and toolkits), techniques (e.g., new ways of inputting information or controlling systems), or designs (e.g., prototypes, sketches, mockups, demos, or other envisionments whose purpose is to convey or motivate new possible futures) that reveal new opportunities, enable new outcomes, facilitate new insights or explorations, or impel stakeholders to consider new possible futures. Study results supported and informed the design and development of a workshop tailored to increase AI literacy around the adoption of image generators for CCI faculty.

In addition to its HCI contributions, the study provided pedagogical contributions. Insights collected from faculty provided valuable insights around barriers and catalysts for adopting image generators in academic settings, particularly in CCI-based disciplines. Furthermore, the focus group workshop, along with its interrelated pre- and post-workshop surveys and live polls, surfaced pedagogical best practices and strategies, as well as other related dimensions, including technical skills, practical applications, and ethical awareness. These findings contribute to the currently limited body of research aimed at increasing AI literacy among HEI faculty, as discussed earlier in the paper. By identifying faculty needs and expectations, the study proposed a practical solution and framework to promote the effective and responsible adoption of GenAIs in higher education by faculty. Lastly, the findings contribute to the ongoing discourse on responsible AI use in education, providing a foundation for the ethical adoption of such tools that also align with pedagogical best practices and the needs of both faculty and students.

Practical Implications

The development of AI literacy is growing in paramount importance due to the increasing adoption of AI and GenAI in academia, industries, and everyday processes (Fitzpatrick, 2025; Legatt, 2025; Patria, 2025). Furthermore, all academic levels are expected to develop and implement AI literacy initiatives for key stakeholders (Fitzpatrick, 2025; Legatt, 2025; Patria, 2025). Hence, this study and its

findings, despite focusing on one higher education institution and an instance of GenAI (image generators), offer valuable practical implications for higher education stakeholders.

Institutions can leverage the study's findings and insights to support curriculum innovation that aligns with emerging technologies while preserving academic integrity and creative rigor. They should prioritize frameworks that address academic integrity, copyright, bias, and accountability, ensuring that faculty are equipped to guide students in the responsible use of AI. Furthermore, they should invest in infrastructure, policy development, and resource repositories that facilitate the equitable and sustainable adoption of AI across departments. Last but not least, they should invest in empowering their faculty through tailored AI literacy programs and providing incentives to support and encourage learning and training.

Overall, this research highlights the importance of understanding and addressing faculty needs within a specific context to connect the right solutions and needs with the right people, information, and technology of the time (Basty et al., 2023; Said et al., 2021). It provided a replicable framework for advancing AI literacy in higher education, as well as a roadmap for fostering responsible GenAI adoption, enhancing teaching practices by empowering faculty, and helping prepare students for an AI-augmented creative workforce.

Limitations & Future Work

While the study demonstrated positive shifts in faculty perceptions following the AI literacy workshop, several limitations must be acknowledged. First, the sample was collected through purposive sampling, which can be prone to self-selection bias. Participating faculty may have already held favorable attitudes toward image generators, which could potentially inflate post-workshop confidence and readiness scores. Additionally, the focus group sample in Activity 1 was small (n = 8), which may limit the generalizability of findings. Although the sample sizes for each activity aligned with qualitative research norms for exploratory studies, future work should include larger and more varied participant pools across institutions and disciplines to broaden insights, results, and representativeness.

Participant attrition between pre- and post-workshop surveys further constrained the quantitative analysis, with only 24 paired responses available, which limited the generalizability of findings. Despite efforts to align survey items, subtle differences in phrasing or interpretation between pre- and post-workshop instruments may have introduced variability in responses. To remedy this, only the identical items (Use_Confidence, Integration_Best Practice, and Institutional_Access) were integrated into the Wilcoxon Signed-Rank test to ensure comparability. The virtual nature of data collection and the time constraints of live focus groups and workshops may also have restricted the depth of participant engagement. These conditions could have led to incomplete or underdeveloped responses, limiting the richness of the qualitative data. To remedy this, employing broader recruitment strategies and retention mechanisms will reduce self-selection bias and participant attrition. Additionally, refining survey instruments will ensure consistent interpretation across time points and strengthen data reliability. Incorporating in-person or hybrid data collection methods could enhance participant interaction and provide richer insights.

Another limitation lies with the scope of the study. While the study focused on faculty's immediate shifts in intention and attitude toward AI image generator adoption, it did not delve into the long-term impact of the workshop on teaching and student learning outcomes. To remedy this, future research should incorporate longitudinal studies to assess whether the workshop's immediate effects translate into sustained changes in course design, teaching practices, and student learning outcomes.

Additionally, while the integration of qualitative and quantitative data provided a nuanced understanding of faculty experiences, some divergence was observed between the data types. Quantitative results indicated statistically significant increases in confidence, awareness of best practices, and access to institutional resources, which were also reflected in the qualitative responses. However, qualitative data also revealed lingering concerns about access to tools, institutional support, and ethical

ambiguities. This convergence and divergence underscore the value of a mixed-methods approach, which allowed the study to capture both measurable shifts and the contextual complexities behind them.

To further enhance the workshop's design, relevance, and effectiveness, collaborative efforts with other stakeholders, including students, administrators, and AI and IT experts, should be prioritized. Iterative feedback and refinement of the workshop will ensure that its content remains current with the evolving GenAI changes and relevant to institutional needs, while promoting responsible and effective use of GenAI tools. Such efforts will improve participants' AI literacy through updated technical skills, ethical awareness, and pedagogical strategies.

CONCLUSION

In conclusion, the study was conducted in response to the growing discourse on AI literacy in higher education, as well as the gaps within the literature, particularly the understudied perception of CCI-focused faculty. It first provided an empirical contribution by systematically analyzing faculty responses to identify key components (RQ1) for an AI literacy initiative, which consisted of three essential modules: technical skills, ethical awareness, and pedagogical best practices and strategies. These modules were followed by the need for practical applications and continuous learning support resources. Second, the study introduced a methodological contribution using a human-AI thematic analysis approach, combining traditional methods with GenAI-assisted coding that enhanced analytical depth, efficiency, and rigor. Third, this work presented an artifactual contribution in the form of a replicable workshop tailored for creative and cultural disciplines, which can be adapted across similar institutions.

While the workshop yielded promising results by positively impacting faculty members' attitudes toward image generators, the findings are based on short-term, self-reported perceptions. Future research should explore long-term impacts on teaching practices and student learning outcomes, conduct further research across disciplines and institutions, and include broader stakeholder perspectives. Such efforts will help refine AI literacy initiatives and ensure their relevance and sustainability in the evolving educational context, while empowering its stakeholders.

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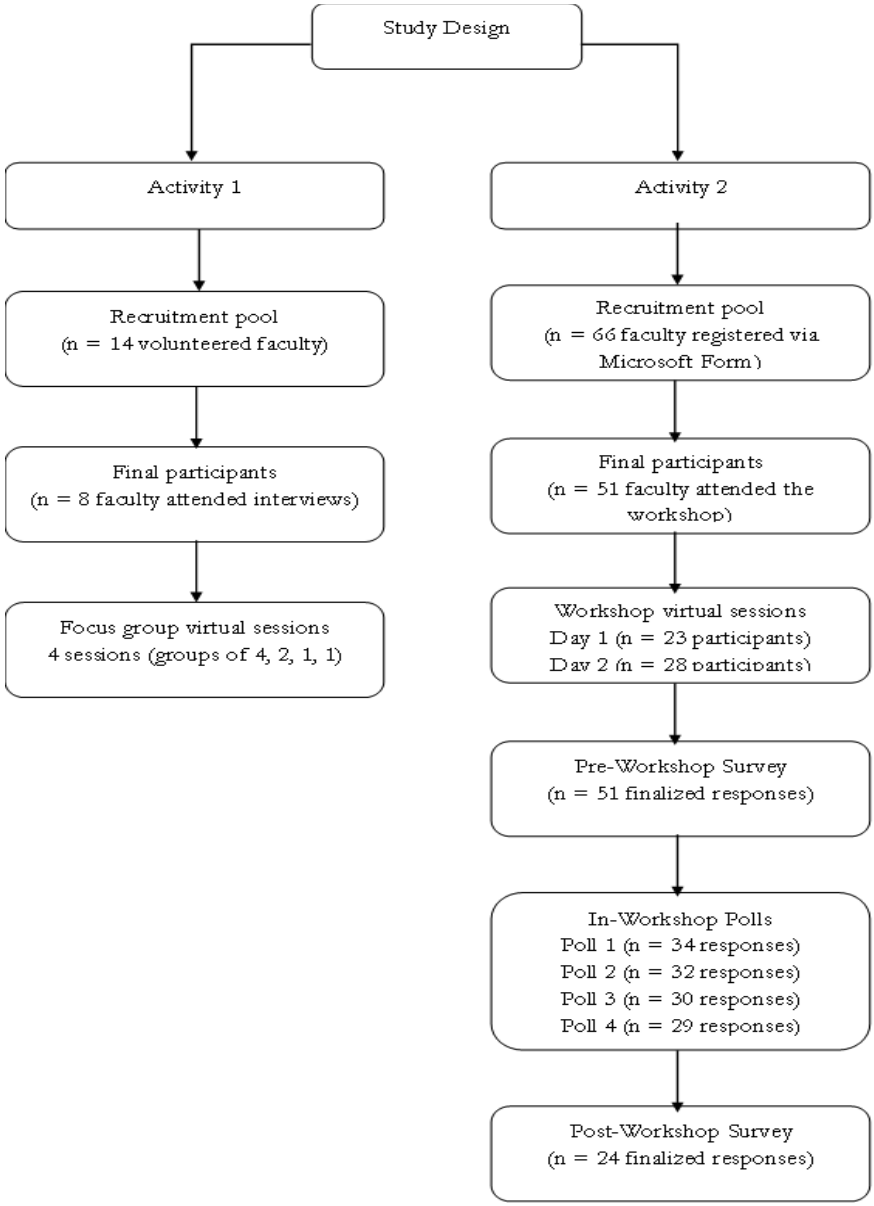
APPENDICES

APPENDIX A: PARTICIPANT FLOW DIAGRAM



APPENDIX B: SEMI-STRUCTURED INTERVIEW QUESTIONS

1. **Orientation to group and features (≈ 10-20 mins)**
   a. _To get to know you, can you talk about your academic background and discipline? How long have you been teaching, researching, and/or creating art?
   b. _How familiar are you with Generative AIs? In specific, how much are you familiar with art-based Gen-AIs, their applications?
   c. _Are you interested in using these technologies in your classrooms? Why or why not?
2. **Generative AIs in Classrooms (≈ 10-20 mins)**
   a. _What are the benefits and challenges you see of integrating Gen-AIs into your courses or curriculum? How do you or would you address these challenges?

b. _What are the pedagogical strategies and ethical considerations that you employ or could incorporate when using Gen-AIs in your classroom?
c. _How do you or would you assess the learning outcomes and the quality of the generated artworks?

3. AI Literacy Workshop Co-Ideating Activity (≈ 30-45 min)

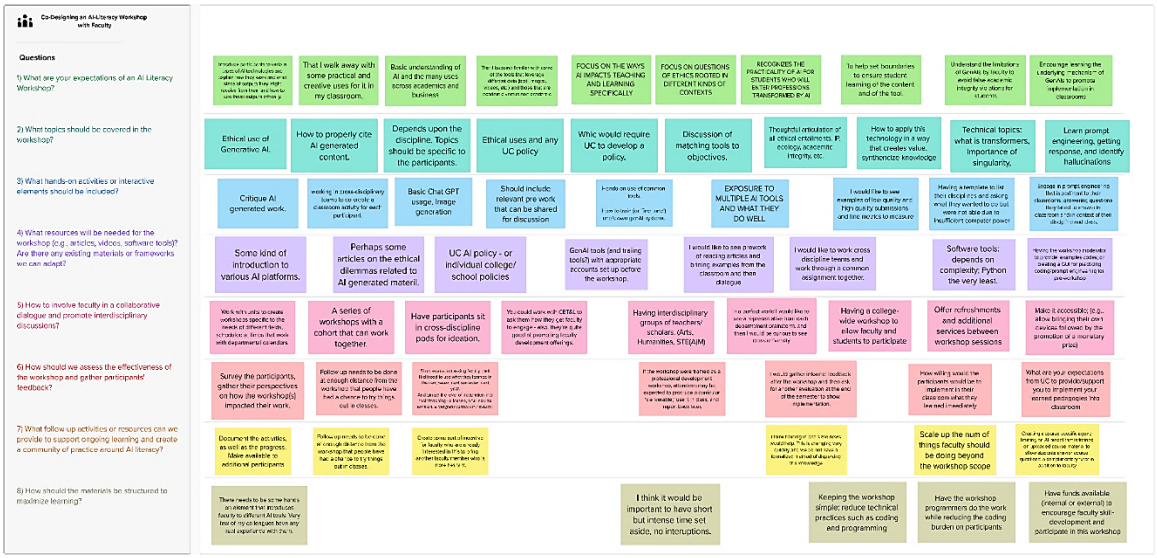
Now we will move onto a brainstorming activity using Mural board. We will share the link with you and go over each question about the AI Literacy workshop. Please feel free to communicate, chat, and ask questions as you include your ideas and thoughts on the sticky notes.

1) What are your expectations of an AI Literacy Workshop?
2) What topics should be covered in the workshop?
3) What hands-on activities or interactive elements should be included?
4) What resources will be needed for the workshop (e.g., articles, videos, software tools)? Are there any existing materials or frameworks we can adapt?
5) How to involve faculty in a collaborative dialogue and promote interdisciplinary discussions?
6) How should we assess the effectiveness of the workshop and gather participants' feedback?
7) What follow-up activities or resources can we provide to support ongoing learning and create a community of practice around AI literacy?
8) How should the materials be structured to maximize learning?

4. Closing questions (as time allows)

a. _Is there anything else that you would like to share about your experiences or perspectives on using Gen-AIs in higher education settings?
b. _Is there anything else you'd like to share?

Appendix C: Mural Board and Faculty's Inputs on AI Literacy Workshop



Appendix D: Generative AI Prompt for Gemini

Conduct a thematic analysis of the following survey data, which consists of open-ended responses to the question: [INSERT SURVEY QUESTION]

Goal: The primary goal of this analysis is to understand [INSERT RELATED RESEARCH QUESTION].

Analysis Process:

1. Familiarization: Begin by carefully reading through all [NUM] responses to gain a comprehensive understanding of the data.
2. Inductive Coding:

   a. Identify initial codes that capture recurring ideas, concepts, and patterns related to ethical concerns and proposed solutions.
   b. Focus on capturing both semantic meaning (what is said) and latent meaning (what is implied).
   c. Do not limit yourself to the research question provided; allow for unexpected themes to emerge from the data.
3. Theme Development:
   a. Organize the initial codes into potential themes and sub-themes.
   b. Ensure themes are relevant to the research question but also allow for themes that highlight unexpected impacts of GenAI on teaching.
   c. Consider the relationships between themes, identifying overarching themes and their related sub-themes.
4. Theme Definition and Refinement:
   a. Develop clear and concise definitions for each theme and sub-theme.
   b. Review the themes against the data to ensure they accurately capture the nuances and complexities of the responses.
   c. Refine themes as needed to improve clarity and accuracy.
5. Exemplification:
   a. For each theme and sub-theme, select a few representative quotes that illustrate its essence.
   b. Choose quotes that are diverse and capture the range of perspectives within the theme.
6. Quantification:
   a. Analyze the frequency of each theme and sub-theme across the [NUM] responses.
   b. Calculate the percentage of responses that each theme represents.
7. Presentation: Present the thematic analysis in a clear and organized manner, using a table or other visual aid to summarize:
   a. Theme/sub-theme names and definitions
   b. Representative quotes
   c. Quality Assurance:

- Thoroughness: Ensure all [NUM] responses are analyzed in detail.
- Nuance: Capture the subtleties, contradictions, and complexities within the data.
- Objectivity: Maintain an objective and unbiased approach throughout the analysis.
- Clarity: Present the findings in a clear, concise, and easily understandable manner.
- Contextualization: Connect the identified themes to the broader context of GenAI's impact on higher education.

Data:

[INSERT RESPONSE DATA]

APPENDIX E: WORKSHOP REGISTRATION FORM QUERIES

1. This workshop is part of an IRB-approved study. Your participation is voluntary, and any information you provide will remain anonymous. By proceeding, you acknowledge your consent to participate in this study. [Options: Yes / No]
2. Which date do you prefer to attend the workshop? (June 24th from 10 AM to 11:30 AM EST or June 25th from 2 PM to 3:30 PM EST) Please input date (M/d/yyyy).
3. Please provide an email where you'd like to receive workshop details. You may use a non-university email if preferred.
4. Please select your gender. [Response options: Woman / Man / Non-binary / Prefer not to say]
5. What is your age? [Response options: 18–24 / 25–34 / 35–44 / 45–54 / 54+]
6. Which college are you affiliated with?
   a. College of Arts & Sciences
   b. Lindner College of Business
   c. College-Conservatory of Music
   d. College of Design, Architecture, Art, and Planning
   e. College of Education, Criminal Justice, Human Services & School of IT
   f. Engineering & Applied Science

   g. Other [Long Text]
7. Please select your school or department. [Open-ended text entry]
8. What is your primary teaching discipline or research area? [Open-ended text entry]
9. Do you use any image generators in your classroom or work? If yes, please name them (e.g., DALL-E, Copilot, Midjourney, Stable Diffusion, others). [Open-ended text entry]
10. Have you participated in any AI literacy webinars, seminars, or workshops before? [Options: Yes / No]
11. Please rate the following statements on a five-point Likert scale (-2 = Strongly Disagree to 2 = Strongly Agree):
    a. I feel confident in my ability to use image generators in my work, classrooms, and research.
    b. The use of AI image generators in education raises ethical concerns that still need to be addressed.
    c. The use of AI image generators provides benefits and opportunities for both students and faculty.
    d. I know the best practices for integrating image generators into my pedagogy.
    e. I have access to institutional policies, guidelines, and sources around responsible AI use.
    f. Insufficient AI literacy sources, programs, and initiatives are the main barriers for me to adopt and use image generators.
    g. I feel that AI image generators are important to me and for my discipline both now and in the future.
12. Please include any questions you may have for the workshop facilitator. [Open-ended text entry]

Appendix F: Post-Workshop Feedback Form Survey

1. What was your most valuable takeaway from the workshop? [Open-ended response]
2. Were the examples and demos relevant to your discipline? [Options: Yes / No / Maybe]
3. How might you use what you learned today in your classroom or research? [Open-ended response]
4. Would you be interested in collaborating with other faculty on AI integration projects? [Options: Yes / No]
5. How engaging was the format (e.g., slides, Q&A, polls, etc.)? [Options: Not engaging / Somewhat engaging / Neutral / Engaging / Very engaging]
6. Please rate the following statements on a five-point Likert scale (-2 = Strongly Disagree to 2 = Strongly Agree):
    a. I feel confident in my ability to use image generators in my work, classrooms, and research.
    b. I know of ethical concerns around AI image generators and how to address them.
    c. I am aware of more opportunities for utilizing AI image generators in my classrooms, research, and works.
    d. I feel equipped with best practices for integrating image generators into my pedagogy.
    e. I have access to institutional resources and guidelines to integrate, use, and promote responsible AI use.
    f. I feel more confident in my AI literacy for knowing and understanding, using and applying, evaluating and creating, and identifying and addressing ethical issues around image generators and their outputs.
    g. I have developed appreciation for these technologies as complementary tools needed for teaching and learning.
7. Name the kind of resource (e.g., quick-start guides, case studies, access to tools) that would help you integrate AI image generators more confidently into your teaching. [Open-ended response]
8. Are there any institutional barriers that make AI adoption difficult in your department? If yes, please name them. [Open-ended response]
9. What questions, concerns, or other topics would you like future workshops to address? [Open-ended response]
10. Would you recommend this workshop to other faculty? [Options: Yes / No / Maybe]
11. Overall, how would you rate this workshop's value to your academic practice? [Five start rating scale]
12. Given the short duration of the workshop, are there any other insights or feedback you would like to share with us? [Open-ended response]

AUTHORS

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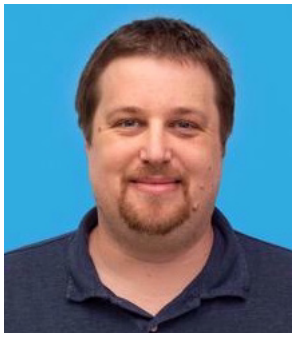

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