Current Artificial Intelligence (AI) Practices in Graphic Communications Education

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Abstract
Artificial intelligence (AI) is impacting several industries, including graphic communications (GC). As the field of education begins to navigate how this new technology will affect various disciplines, educators are trying to determine whether to implement AI into the classroom, and if so, in what ways. The graphic communications industry has already begun to integrate AI use into several different print segments, leading GC educators to explore opportunities for expanding the current curriculum to include AI to stay current with industry trends. This mixed-methods study sought to gather input from graphic communications educators at the secondary and post-secondary levels regarding current AI practices. The primary goal of the research was to provide educators with strategies for integrating AI into their classrooms. Results showed that most educators surveyed are using AI for both administrative tasks and teaching activities. Many are using the same or similar AI tools such as ChatGPT, DALL-E, Adobe Firefly, and Copilot. Findings also revealed that there are some educators that remain skeptical of AI and its effectiveness, while others have concerns regarding the ethical implications for its implementation into the classroom. Overall, this study provides GC educators with creative ideas and practical uses for incorporating AI into their classes.

1. Introduction

According to the International Organization for Standardization, artificial intelligence (AI) is "a technical and scientific field devoted to the engineered system that generates outputs such as content, forecasts, recommendations or decisions for a given set of human-defined objectives" [ISO/IEC 22989, 2022]. Apple CEO, Tim Cook, predicted that AI will essentially impact every field and every industry (Painter, 2023). The growing popularity of AI has prompted secondary schools, colleges, and universities to look for ways to begin integrating AI into the classroom and research. As a result, educators across all disciplines are now beginning to explore how to incorporate its use into various curriculums (Bridges and Blue, 2024).

With regards to the field of graphic communications (GC), the April 2024 State of the Industry Report by Printing United Alliance found that 39.7% of print companies are now using AI, which was an increase of 15% from the previous year (Printing United Alliance, 2024). At present, AI has been implemented to some degree in most print production departments including content creation, marketing, sales, cybersecurity, market analytics, operations, hiring, employee training and evaluation, customer service, and risk management (Printing United Alliance, 2024). As industry continues to embrace AI, graphic communications educators have a duty to ensure that students are entering the workforce well-prepared for utilizing this new technology in a variety of print segments. The fundamental research question of this study is to determine how educators are currently using AI in the classroom. This mixed methods study surveyed secondary and post-secondary GC educators on their current and planned teaching practices regarding AI use. The overall

goal of this research is to provide educators with resources and ideas for practical, effective AI implementation into GC courses.

1.1 Overview of AI

This study will identify strategies for implementation of AI in graphic communications education using specific AI applications; therefore, it is important to evaluate what AI is and how it is used. AI tools can be broken down into a variety of categories based on function and type. For this research, only those mentioned in the results of this study will be elaborated on as those are relevant to graphic communications educators. Generative AI and GPT's are similar and oftentimes used interchangeably; however, they are not the same (Oberoi, 2023). According to Oberoi (2023), "Generative AI is a class of machine learning (ML) models that, given a prompt, can generate output such as text, images, code, video, music, etc." (p.1). Machine learning is a subset of AI and learns and improves its performance based on that experience (Bini, 2018). ML uses algorithms to recognize patterns in datasets and when given new data makes predictions without any human intervention (Coursera, 2025). GPT stands for generative pre-trained transformer and is an advanced AI model created by OpenAI (Grammarly, 2025). GPT's are "designed to understand and generate humanlike text" and "uses a transformer architecture to perform tasks like answering questions, summarizing, and translating" (Grammarly, 2025, p. 1). AI applications such as those available in common industry-related Adobe software (Illustrator, Photoshop, etc.) as well as other popular apps such as Midjourney, ChatGPT, Claude, and Grammarly are considered generative AI (Adobe, 2024 and Luken, 2025). Applications such as Canva, Logo Creator, and Code Copilot are classified as GPT's (Dierolf, Nucci, Sevilla, 2024).

1.2 State of AI in the Print Industry

For graphic communications educators to develop effective teaching strategies focusing on AI, it is important to first understand how it is impacting the industry that we are preparing students to enter. Since the onset of AI, the print industry has sought out various methods for integrating its use into different segments of the field. Drupa, the largest trade show in the print industry, summarized some specific examples where implementation is already occurring. One area is in automated design for graphics and layout creation as well as standardization of common layout tasks (Drupa, n.d.). This can be accomplished using generative AI tools such as those available in Adobe software. A second use is in variable data printing and large-scale personalization, such as marketing campaigns and personalized products. In addition, print companies are utilizing AI in production workflows including analytics of print jobs and quality control and inspection. With the growth of augmented reality (AR) in the industry, AI is also helping to broaden and strengthen the user experience. Finally, AI has led to more environmentally friendly production through the optimization of print processes which creates less waste (Drupa, n.d.).

Sappi paper stated in a recent article that advantages of AI for the print industry include cutting down on waste, increased production efficiency while reducing downtime, and adding more customization and sales predictions (Sappi, n.d.). The Printing United Alliance and NAPCO Research reported that other AI benefits include robotic AI to aide in moving materials through production, product and

business management automation, enhancing management activities such as customer experience, and support for company-related tasks such as forecasting and screening job applicants (Printing United Alliance & NAPCO Research, 2024). The AI market is predicted to increase from 120 billion in 2022 to 1,500 billion in 2030 (Sappi, n.d.). With the advances of AI in the print industry, educators must now determine how to translate those changes into the classroom through lessons, projects, lectures and other curricular tasks.

1.3 Overview of AI in Education

Currently there is a lack of scholarly research regarding AI use in the field of graphic communications education, and few studies have been conducted providing very specific examples of AI implementation in the classroom. However, several studies have been conducted analyzing its general use in education. Luckin, Holmes, Griffiths, and Forcier (2016) stated, "At the heart of artificial intelligence in education is the scientific goal to make knowledge, which is often left implicit, computationally precise and explicit" (p. 18). The authors propose three areas where AI in education can be applied: personal tutors for learners, collaborative learning, and intelligent virtual reality (Luckin et al, 2016). With regards to personal tutoring, intelligent tutoring systems (ITS) are now being used for students as a substitution for personal one-on-one tutoring where in-person options are not feasible. ITS simulates one-on-one human tutoring and can match the learner's needs by providing personalized activities, feedback, and pedagogical strategies. An example of collaborative learning could include using AI systems to pair students with similar cognitive abilities and interests to complete a specific collaborative task, such as a group project (Luckin et al, 2016). The third area is intelligent virtual reality. According to Luckin et al (2016), "Virtual reality becomes 'intelligent' when it is augmented with artificial intelligence" (p. 29). The authors state that AI virtual reality in education "provides authentic immersive experiences (the subjective impression that one is participating in a realistic experience) that simulate some aspect of the real world to which the user would not otherwise have access (such as dangerous environments or somewhere geographically or historically inaccessible)" (p. 28).

The researchers go on to provide recommendations for developing new skills for educators regarding how to begin implementation of AI into the classroom. These include an understanding of AI systems, what they are and what they can do, so that educators can make intelligent decisions about what to integrate into their curriculum. Also, building teamwork and management skills in preparation to work with AI as a teaching assistant as well as developing research skills to understand the data that AI is providing (Luckin et al, 2016). Finally, Luckin et al (2016) proposed methods for using AI to enhance grading and assessment. For example, AI can allow educators to not only assess whether a student arrived at the correct answer, but also how they arrived at that answer. In addition, learning analytics can be used to make predictions regarding the student, such as learner confidence, motivation, challenges, and successes which can all impact the learning activity itself providing opportunity for revision and intervention (Luckin et al, 2016).

A study by Harry (2023) had similar findings and explored the use of artificial intelligence in personalized learning, intelligent tutoring systems, chatbots, and grading and assessment. Findings included benefits in personal-

ized learning which allowed students to learn at their own pace and learning style, while tutoring systems, chatbots, and grading and assessment all saw improvements in efficiency and consistency with the addition of AI (Harry, 2023). A 2018 study assessed the impact of AI on education and concluded that its use provided many opportunities for open online course development as well as the ability to assess a large quantity of assignments more efficiently (Chassignol, Khoroshavin, Klimova, and Bilyatdinova, 2018). The researchers also found that intelligent tutoring systems could lead to increased productivity for students both inside and outside of the classroom. Personalized learning environments using AI improved both the educational process and aided students with learning difficulties by helping them study more effectively (Chassignol et al., 2018).

Holmes and Tuomi (2022) identified various student-centered AI for education applications. These included the aforementioned intelligent tutoring systems, which the authors identified as the most commonly used AI in education application; AI-assisted apps, such as those used to translate languages; AI-assisted simulations such as, virtual and augmented reality; and AI for learners with disabilities, both to support learners and for diagnostic purposes. The authors also mentioned automatic essay writing, used for composing essays and detecting plagiarized writing; chatbots, used for a variety of student-oriented tasks ranging from calendar reminders to teaching assistants for courses; and automatic formative assessments, such as those used for writing assessments i.e. Grammarly. They also discussed learning network orchestrators, such as Open Tutor, which allows for connections between students and one-on-one tutors; dialogue-based tutoring systems which simulates a traditional one-on-one tutoring session by allowing the student to ask questions to a human tutor with responses delivered via typed message or spoken message; and exploratory learning environments, which allows for students to develop and create their own learning environment. Finally, the authors noted AI-assisted lifelong learning assistants, which can provide a variety of support and service to students, although this area has not yet been thoroughly researched (Holmes and Tuomi, 2022).

The researchers also identified some teacher centered AI applications. The first were plagiarism detection applications such as, Turnitin and Grammarly. These services have been available for quite some time now and allow educators to easily and quickly screen writing for originality. Other AI applications for educators include smart curation of learning materials, which refers to apps that allow users to screen information provided on the internet for quality and relevancy; classroom monitoring such as applications for video monitoring and headsets; and automatic summative assessment which are commonly used for written assessments as well as in math and computer science areas where automatic grading can more easily be implemented. Additional applications were AI teaching and assessment assistants, such as applications that will record previously written phrases or scripts that can be reused saving time and creating consistency in grading. Another example is classroom orchestration which can provide teacher assistance in managing classroom activities (Holmes and Tuomi, 2022).

1.4 AI Teaching Strategies from Other Disciplines

To incorporate teaching strategies for graphic communications, it is important to explore

current strategies in comparable disciplines. The first similar area is business. A recent survey among 95 college of business faculty at an R1 university found that 21% of faculty use AI to assist in the creation of lecture content, 22% use AI for in-class demonstrations on concepts, 18% to create quizzes and exams, 26% use AI for assignment creation, 11% for grading support, and 2% identified other ways for implementing AI in the classroom. The survey also reported that 30% of business faculty are requiring or encouraging students to use AI tools for class work, 29% permit use but do not necessarily encourage it, 18% discourage AI use for class work, and 23% of faculty did not respond (The Future is Now Faculty Panel, 2024).

Some specific examples of classroom activities found in business communication include role-playing with chatbots, collaborative projects with AI, simulations in communication, and interactive presentations with assessments (Riapina, 2023). A business analytics course used AI for personalized feedback, to supplement video lectures, and in lab sessions (Koo, 2024). Marketing courses are utilizing AI experiential learning activities such as machine learning and predictive analytics (Allil, 2024). Some other areas are packaging design courses where generative AI is being incorporated for package prototypes as well as teaching students AI-based recycling systems for waste reduction (Ismail, 2025). Graphic and visual design courses are integrating AI for the automation of the design process in addition to the customization of teaching materials and study plans based on the individual student (Gallardo, Stefanía, León, Jaime, Arias, Isabel, Jimenez, and Luis, 2023). These strategies, along with those presented in this research, will help educators begin to establish updated curriculum revisions and classroom activities that are in line with changing landscape of AI and the impact it is having on education across all fields.

2. Methods

This mixed methods study used a survey comprised of closed and open-ended questions. According to Creswell (2012) survey research is often used in education to identify trends, gather individual opinions on specific topics, as well as beliefs and attitudes. The characteristics of survey research include gaining a sampling from a defined population. In the case of this study, graphic communications educators in secondary and post-secondary education served as the participants. Other characteristics include collecting the data through a questionnaire or interview, creating the data collection instrument, and obtaining an acceptable response rate (Creswell, 2012). Since this study sought input from a large number of national and international participants, it was determined a web-based survey would be the most appropriate instrument. Questions were designed based on a review of literature along with the primary goal of this study, which was to provide educators with resources and ideas for practical, effective teaching strategies for AI implementation into a GC curriculum. Surveys were created and administered utilizing the online survey tool, Qualtrics. Qualtrics is the recommended survey platform identified by the researcher's post-secondary institution. Qualtrics is frequently used in education because of its ability to create advanced surveys, manage data collection, and produce detailed reports (Qualtrics, 2025). Some advantages of Qualtrics include the generation of a wide range of question types, including Likert scales, and the ability to integrate surveys into learning management systems, such as Canvas and Blackboard (Qualtrics, 2025).

2.1 Procedures

Survey invitations were sent by the researcher via the social media application, LinkedIn. The researcher created a post summarizing the study and the potential benefits to participants. This method produced approximately nine participants. Additional requests for participation were emailed by the researcher to known educator contacts in the graphic communications field. These requests yielded approximately eight additional participants. Finally, the researcher requested an announcement about the study be added to the monthly memo for the Graphic Communications Education Association, an international graphic communications organization comprised of educators of varying levels. In total, 39 participants completed the survey, an acceptable number for this type of research. The survey was comprised of 11 questions, four closed-ended and seveb open-ended. The researcher obtained Institutional Review Board approval prior to beginning the study and participants received an informed consent before completing the survey.

3. Results

Data analysis for the closed-ended quantitative questions was completed using Microsoft Excel. Coding of the qualitative data was completed using Microsoft Copilot to analyze themes and determine trends in the data. Question one asked participants if they currently use artificial intelligence (AI) in their classrooms for learning activities such as, lectures and demonstrations. 71% of participants stated that they were using AI in the classroom while 29% stated no. Results are shown in Figure 1.

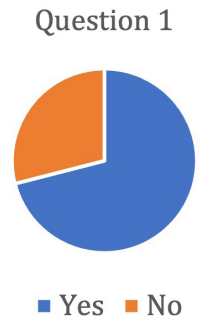

Figure 1 Percentage of Educators Using AI

Question two asked participants if they are currently using AI for administrative tasks such as, grading and assignment creation. 58% stated yes while 42% stated no. Figure 2 shows the results.

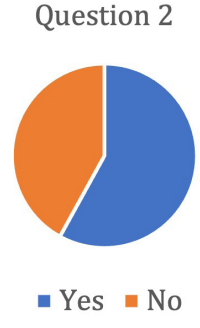

Figure 2 Percentage of Educators Using AI for Administrative Tasks

Question three asked participants how long they had been using AI in the classroom. A range was given for this question: less than one year, one to two years, more than two years, and an option for "I do not use AI." This question was included because the researcher wanted participants to continue in the survey even if they do not use AI in order to gather perceptions about their hesitation and/or reasons for not implementing AI use. 33% chose less than one year, 46% chose one to two years, 13% se-

lected more than two years, and 8% stated they do not use AI. Results are shown in Figure 3.

Figure 3 Length of Time Educators have been Using AI

Question four requested participants to choose all that apply regarding what areas of graphic communications they believe AI has valuable use. Options to select included: content creation, marketing, sales, cyber security, market analytics, operations, hiring, employee training, customer service, risk management, other, and none. The highest-ranking category at 83% was content creation followed by marketing at 58%. Sales and cyber security were among the lowest ranking categories selected by 25% and 29% of participants. Market analytics, employee training, and customer service all were selected by 54% of participants. 38% chose operations and 17% selected risk management and other. Finally, 13% chose none. For those that selected other, additional categories included research and brainstorming, while two participants stated ideation. Results are shown in Figure 4.

Question five asked participants to identify which GC courses they are using AI in. Responses included the following specific courses: Commercial Printing, World of Color (specifically color psychology), Packaging Design, Color Management, Digital Media Composition, Senior Undergraduate Capstone, Introduction to Brand Communication, Brand Agency Practicum, Graphic Media Composition, Research Methods,

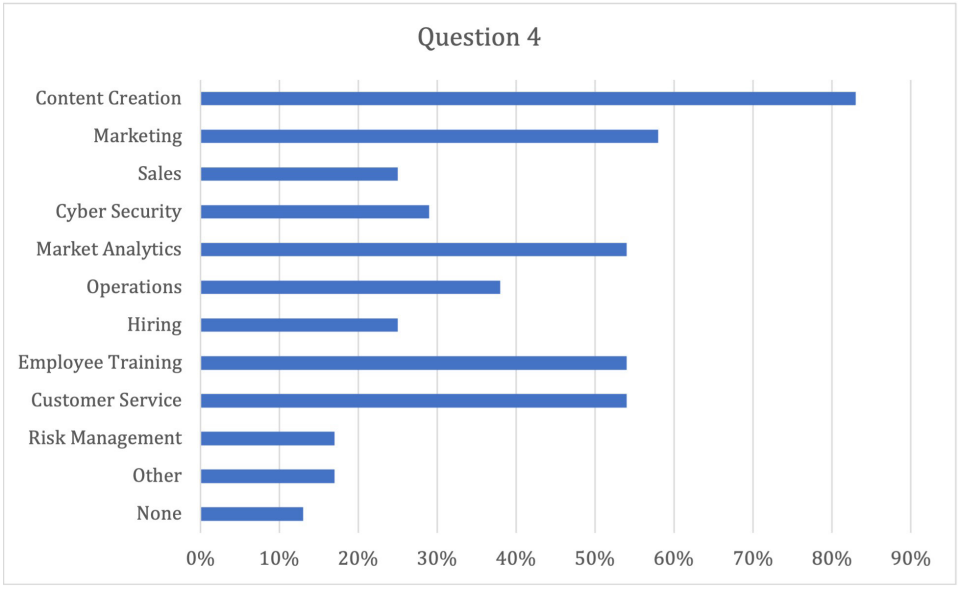

Figure 4 Segments of Print Industry where Educators Believe AI has Valuable Use

Graphic Communications II, Estimating, Data Management, Information Architecture, Applications of Digital Graphics, Photography and Video, Brand Design, Creative Direction, Web Design, and Digital Marketing. It should be noted that two participants mentioned AI use in Senior Capstone courses and Brand Agency Practicum. Some participants elaborated on how they were using AI in their specific course. One participant stated they use AI in lectures and another stated, "I use AI passively in several courses. Mainly to generate procedures from transcripts or analyze learning objectives or outcomes based on instruction sets." Another participant mentioned that they use AI in all courses for outlining lecture content and creating rubrics. Finally, one participant stated, "We are using AI for students to upload their personal images and pull from those to create vector artwork to print on the Nano press."

Question six asked participants what types of learning activities and administrative activities they use AI in, and to select all that apply from a list of options. Small-scale Assignments and Content Creation were the highest-ranking categories at 48% followed by Class Demonstrations at 43%. Lectures were selected by 39% of participants and 26% selected Major Projects and Evaluation/Grading. 17% chose Email Correspondence while Group Activities was the lowest ranking activity at 9%. Participants also had the option to list Other activities; however, none were listed. Figure 5 shows the results.

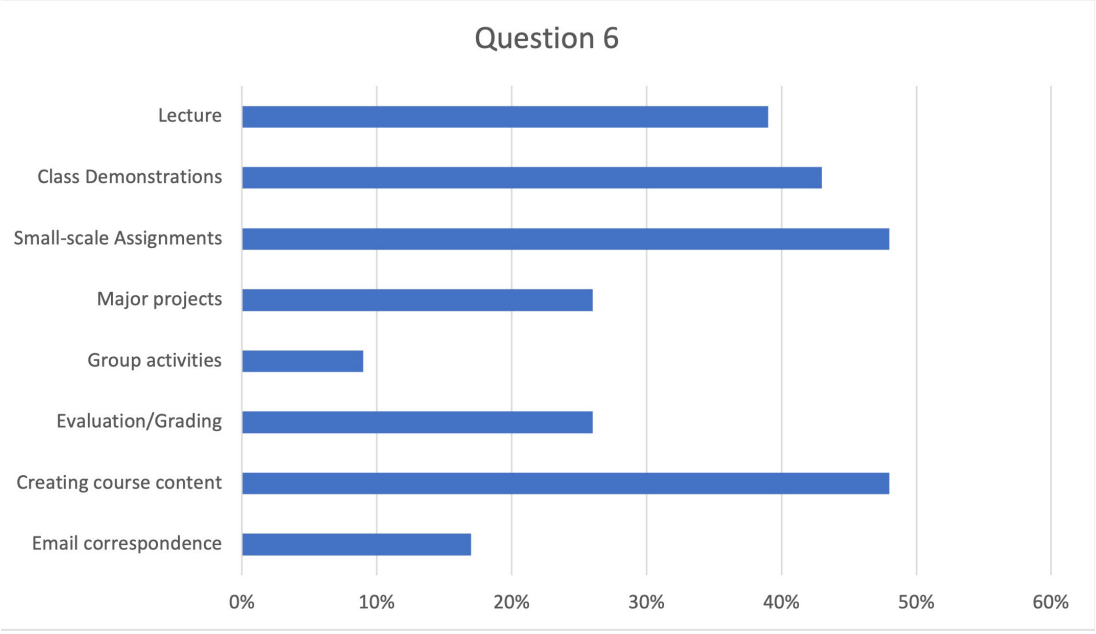

Figure 5 Types of Activities Educators are Using AI

Question seven asked participants to describe in detail the learning activity or administrative task and/or how they use AI in their classrooms. Each participant response is listed in Table 1. The researcher determined that in order to achieve the primary goal of this study, it is important to share each participant's comments in an effort to provide educators with specific ideas for the implementation of AI in their course curriculums. Responses were paraphrased using Microsoft Copilot. Full responses are located in Appendix A. Some interesting themes that emerged from this open-ended question included support for assessment such as, the creation of rubrics, grading, providing feedback, and assistance with participation and attendance. Educators appear to be implementing AI into every day teaching tasks, mostly in the form of scaffolding rather than final outputs. One common trend that emerged from this question was the use of AI for ideation for creative works, specifically storyboarding, concept creation, and creative briefs. Other participants mentioned teaching prompt writing for AI as well as using built-in AI features such as camera autofocus and auto correct. Educators also responded that they are currently working with more advanced AI capabilities. For example, building virtual teaching assistants indicating a shift toward asynchronous support for students. Finally, some participants stated they are using applied AI specifically Python web scraping, troubleshooting code, and AI heatmapping for UX research.

Table 1 Question Seven Participant Responses

Students use Photoshop's Generative Fill to build montage layers based on their input.
I help students unlearn myths, especially about color psychology, by having them challenge AI with research-backed facts.
AI helps me write emails, make custom worksheets, and generate rubrics or feedback.
Students design alternate visuals using Illustrator.
AI is part of the design workflow.
I use AI to develop new test topics.
Students use AI for branding concepts and video pitches.
I'm testing AI for tracking attendance and participation.
AI helps outline lectures, create rubrics, and screen writing. I'm building a virtual teaching assistant.
I use AI to write rubrics and revise curriculum using Bloom's verbs.
AI helps update assignments and summarize student work.
I use AI to brainstorm client solutions and draft emails.
I show how AI art prompts lead to similar results and discuss ownership. I also highlight AI's flaws in writing and math.
I upload slides to get suggestions, quiz questions, and assignment ideas.
Students use AI to query Python for web scraping.
We troubleshoot code using AI.
We'll use AI heatmapping for UX research soon.
I rely on AI daily for teaching and learning.
AI helped simplify assignment instructions.
Students use AI features in cameras and editing tools, discussed in lectures.

Question eight asked participants to describe the primary goals or learning outcomes related to AI use in the classroom. As with questions seven, all responses are shown in Table 2 due to their significance in achieving the overall goal of the research and were paraphrased using Microsoft Copilot. Full responses are in Appendix B. Trends emerging from this question were benefits for the instructor namely more efficient grading and faster content creation. Goals related to pedagogy included teaching prompt writing and query management, building critical thinking skills with exercises and assignments that demonstrate the limitations and deficiencies of AI, and encouraging ethics and awareness of AI use specifically as it relates to AI-generated designs. Creative exploration was also mentioned as it relates to a starting tool for ideation such as packaging concepts and prototyping. Educators also stated that they were using AI for industry readiness especially when preparing students for AI-driven workflows in design, branding, and packaging. One final theme that emerged in question eight was related to ethical use of AI and encouraging students to use it as a tool rather than an author. Educators also emphasized the concerns about cheating and students using AI to complete assignments.

Table 2 Question Eight Participant Responses

AI can assist in assessing variables in the printing process.
AI is used for Generative Fill in image compositing.
Students should not use AI to complete homework.
AI should not be fully trusted.
AI will be used to support creative exploration.
Students use AI to brainstorm packaging designs and generate visuals.
Students should understand legal implications of AI-generated designs.
Students need to learn proper and ethical AI use.
AI improves lab outcomes.
AI helps with routine admin tasks.
AI supports concept development.
Teach students to use AI correctly and add human input.
AI speeds up content creation and grading.
AI can help explain course content in new ways.
Students must see AI as a tool, not a creator.
Students should learn to use AI comfortably and effectively.
The goal is to prepare students for AI use in their careers.
AI helps kickstart creative thinking in branding.
Show AI's flaws to discourage over-reliance and cheating.

Question nine asked participants to identify what AI applications they are using and for what purpose. Most stated the application, but only approximately half stated the learning activity or administrative task that the app was used for. The most used application was ChatGPT at 54% followed by DALL-E at 22%. Copilot and Adobe Firefly were identified by 18% of participants. 13% stated they used Adobe Photoshop and Gemini while 9% identified Adobe Illustrator and Midjourney. 4% of participants stated they use iStock, Luna, Sonar, Claude, Grok, DeepSeek, Adobe Lightroom, Premier, and Luma Dream machine. One participant stated that students are free to choose the AI application they wish to use. Many of the activities mentioned were similar and included using ChatGPT and Copilot for creative exploration and administrative efficiency, Adobe Illustrator Taskbar to create additional versions of a subject image, DALL-E and Adobe Firefly for graphic generation, as well as ChatGPT, DALL-E, and Luma Dream machine for image generation and creative brief assistance. Figure 6 shows a graphic representation of the results.

Question ten asked participants "If you are not currently using AI in the classroom, please describe why and how you could be encouraged to begin using it. If you are using AI, please describe the advantages of its use." Table 3 shows the nine participant responses to this question. Responses were again paraphrased using Microsoft Copilot and full responses can be found in Appendix C. Overall educators that are currently using AI felt that ideation is a beneficial starting point for AI integration, specifically brainstorming and inspiration. Other beneficial

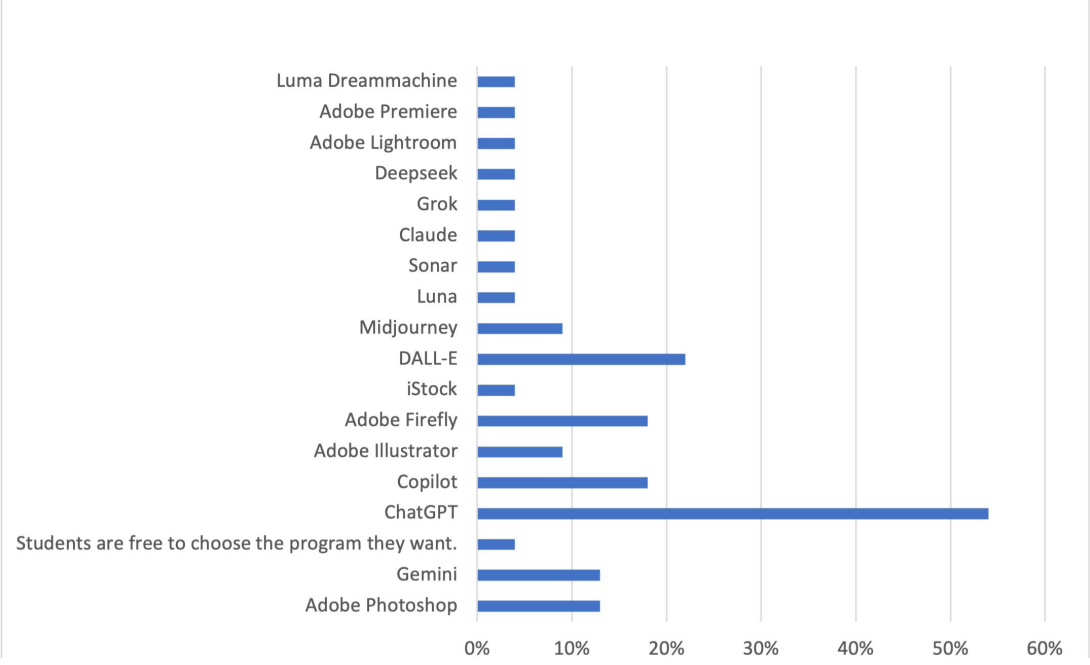

Figure 6 AI Applications Most Used by Educators

uses mentioned were for grading and content reviews with students. Those hesitant to use it stated that available AI training is inadequate, while some mentioned its fast-pace, lack of field-specific AI tools, and not knowing where to begin as factors contributing to its lack of implementation.

Table 3 Question Ten Participant Responses

AI makes tasks easier.
AI isn't reliable yet due to poor-quality training data.
AI helps students quickly generate design ideas and variations.
AI is useful for repeating explanations for students who need review.
Every graphic communications student should learn to use AI.
AI speeds up content creation and grading.
I want to use AI more with students but don't know where to start.
AI evolves too fast to create long-lasting assignments.
I'm hesitant to use commercial AI tools due to lack of field-specific understanding.

Question eleven asked participants if they believe AI enhances students learning, and if so, please elaborate on how. Four participants stated that it does not, five stated that they were not sure or it had potential, and the remaining participants stated that it does enhance student learning. All but two elaborated on their responses. Table 4 shows participant responses paraphrased in Microsoft Copilot. Full responses are in Appendix D. Responses to this question were mixed with some viewing AI as innovative while others had more neutral or negative opinions. Those expressing positive views of AI identified creative exploration, problem solving, independent learning, industry relevance, and summarization of content, among others, as effective ways to enhance learning. Educators who felt AI does not enhance student learning stated misuse, such as cheating, as well as the use of AI to bypass thinking were all concerning factors.

Table 4 Question Eleven Participant Responses

Not currently—AI only raises awareness.
No, it doesn't help.
Students often misuse AI by copying responses into homework, missing the point of learning.
Yes, AI supports learning through personalized help, creative exploration, and instant feedback.
AI helps students quickly explore design ideas and visual choices.
Students can use AI as a study aid outside class to reinforce learning.
Too early to tell, but it shows promise for design ideation.
Yes, it helps students explore many options quickly.
AI improves lab performance.
AI supports concept development and presentation prep.
AI enhances learning, especially when used to summarize or explain slide content.
AI is just another tool—like the internet or Grammarly—that adds convenience.
AI supports discovery, problem-solving, and workflow.
Yes, it helps.
Yes, students need to be comfortable using it in future work.
AI helps if students use it thoughtfully, not as a shortcut.
AI is useful when applied appropriately, especially in industry-relevant tasks.
It's a helpful tool, but there's a fine line between use and misuse.
Yes, it exposes students to current industry trends.
No, it doesn't help.
Not sure—it's important for students to know AI is used in the field, but it may not teach traditional methods.
AI can support learning, but students often use it to avoid thinking.

The final question requested participants provide any other additional comments related to AI use in the classroom. Five left responses to this question, which are shown in Table 5. Responses were paraphrased using Microsoft Copilot and full responses can be found in Appedix E. This question also had mixed responses with some educators reemphasizing how they are using AI and another identifying areas where future growth will occur. Two responses emphasized unfiltered data and the lack of original thinking as areas of concern related to AI.

Table 5 Question Twelve Participant Responses

My classes focus on deep conceptual understanding, not design or skill-building.
AI was added to Adobe tools in October 2023; its impact on creative authenticity is worth watching.
AI is a valuable educational tool beyond image generation—it can help present knowledge in new formats.
AI has potential, but its reliance on unfiltered internet data is concerning.
Students may rely on AI for ideas instead of developing original thinking.

Many educators participating in this research reported utilizing AI in their classrooms for assignments, projects, and other related activities. Small-scale assignments were the top-ranking AI use among those surveyed. Some specific use cases include Adobe Photoshop generative fill for image composites, Adobe Illustrator to create alternative designs, and AI as a tool in the design/creation process. Other uses include Attention Insight for UX research; generative AI tools to brainstorm packaging design concepts, explore variations of die lines, and generate imagery to accelerate their prototyping phase; and an AI tool to use alongside Adobe/Figma in early phases of ideation. Educators also mentioned using AI to solve problems and compose emails to "clients," query python code for web scrapping, AI to trouble-shooting code, and AI video tools for content creation.

Most participants are also using AI for classroom activities such as, lectures and demonstrations. One educator provided the following specific demonstration example, "I use it for demonstration of content creation in my Graphic Media Composition course. It shows how identical prompts result in very similar artistic creations and leads to a discussion on content ownership." "I have also used it in my capstone course to show the similarities and deficiencies of AI currently when it comes to writing and accuracy of content. It serves to help demonstrate the shortcomings and error in relying too heavily on AI to do one's work for you." "I also use it in demonstrations of estimating as students have tried to complete math-based estimates with ChatGPT only to be given a very wrong answer. With print, it is easy to confuse the system as there is not enough data to generate accurate assessments, especially without the guide of very specific prompts and instructions (at which point, just completing it by hand is easier as you already need to know the process in order for AI to function/estimate correctly)." Others stated that they use AI to aide in developing outlines for lecture content to ensure that the topic is thoroughly covered as opposed to asking AI to develop the lecture.

Approximately half of participants stated that they use AI for administrative tasks. Most are using AI for the same types of tasks including grading, assignment creation, attendance and participation, and other assessment activities. Examples provided included drafting emails for differentiated worksheets, create rubrics and feedback comments based on student performance, creating tests and new topics, summarizing student reflections, updating assignments, suggestions for presentation slides, creating test questions based on presentation slides, rewriting assignments to streamline projects, and rewording comments for students within grading. One participant stated, "I will sometimes use AI to generate feedback for my students or help me evaluate their mastery

or demonstrated skills in non-technical areas. Sometimes, I will have AI provide insight on grammar, structure, tone, etc. However, I primarily use it to evaluate the materials I generate to ensure that my instruction sets are clear, or my objectives can be clearly realized by the content I am generating."

4. Discussion

Results demonstrate that graphic communications educators are using AI in their courses. A large majority of participants are using it for learning activities, while approximately half are implementing AI for administrative tasks, such as grading. In addition, many have just recently begun to implement the technology as most stated they had been using it for one to two years. One question this study sought to answer was how educators are using AI. Based on the quantitative data gathered in questions one and two, most are utilizing it in their classrooms for small-scale assignments and content creation with about half using it for administrative purposes. However, when asked to provide specific examples of how AI is being incorporated, educators identified several tasks related to course development and improved efficiency. For example, some stated AI helps them develop and update lecture topics, refine assignment requirements, create rubrics, and streamline content, among other items. When asked to identify specific learning outcomes related to AI use, participants provided several examples related to learning activities ranging from assessing print process variables to generative fill options for content creation. This demonstrates that educators are in fact teaching with AI and allowing students to experiment with its use for class related tasks.

Participants identified a wide array of courses where AI is included ranging from print production courses to brand development and photography. This exemplifies the fact that AI is indeed going to impact every industry and discipline in some capacity. Educators also identified areas of graphic communications where AI could be incorporated. Content creation and marketing were among the highest while cyber security and sales were the lowest ranking. This data aligns with many of the comments left by participants regarding how they use AI in their classrooms with many stating it is used for content creation and the design process. Not surprisingly, when asked to identify the AI applications used in their courses, many identified those that are currently dominant in graphics education and with AI use in general including ChatGPT, DALL-E, and the AI features built into Adobe applications. These findings align with current AI trends and use in education.

This data reveals that educators are recognizing the need to begin embracing AI to stay current with trends in technology and more specifically, the graphic communications field. While hesitation inherently exists among educators, as is common with most new technology, the desire to utilize AI in appropriate, ethical ways seems to be present. While some disagreement clearly exists regarding AI use in the classroom, and some will inevitably reject its use or wait until more research has been done to demonstrate its value, most educators did express the need for meaningful ways to begin incorporating AI into their curriculums. It appears some are reluctant to use it simply because they do not know where to start.

Future research studies could include replicating this study to evaluate whether new trends are emerging and how the use of AI in the GC

classroom is evolving. It would also be interesting to conduct a study with print industry professionals using surveys, focus groups, one-on-one interviews or a combination of to determine what expectations are required for new hires regarding AI use in the field. This would be a tremendous help to educators when building AI into their curriculums. This research could also expand to include educators from all disciplines and levels to broaden AI research in education. Finally, a study evaluating student perceptions of AI use would be beneficial to identify how students feel about the changing landscape of technology use and AI's impact on their future opportunities.

5. Conclusion

While much research is left to be done, the primary goal of this research was to give educators a starting point to begin exploring ways to include AI in their teaching as well as additional class-related activities. Whether a novice or advanced AI user, the experiences presented here by other educators can provide real-world examples of how AI is being used in graphic communications education and why it is valuable. It is important to keep in mind that AI implementation will require utilizing the same educational principles that teachers have always relied on as well as evidence-based educational research (Nguyen, 2023). The learning outcomes identified by participants along with the ways in which AI can enhance student learning can reassure educators that there are effective methods for incorporating AI that are not harmful to students or the learning process and can in fact improve efficiency for many common educational tasks. This research can serve as a guide for educators as they begin to seek out different methods for using AI, whether for classroom instruction and activities to assessment and evaluation.

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Appendix A

Question Seven Full Participant Responses

Adobe Photoshop Generative Fill image composites are created based upon student commands to create content for layers of montage images.
Grades
A fair amount of what I teach is unlearning of misconceptions that the student has picked up along the line. After several lectures debunking the internet's view of color psychology, I have an assignment where the students pick a topic from the lectures (where they have information backed by research) and ask AI about that topic. If AI provides incorrect information, the student is asked to challenge the information, for example, by asking it to identify research papers to support. The student is asked to find those papers to verify that AI has interpreted the paper correctly. By and large, AI gets it wrong, and often invents research papers that don't exist.
I use it to draft emails to create differentiated worksheets and generate rubrics or feedback comments based on student performance.
Students learn to create alternative designs using Illustrator.
Use AI as a tool in content creation. Part of the design/creation process.
For tests, new topics
In the Brand industry AI is often used in concept creation for pitch work, so we offer this as an option for our students to help simulate the types of concepts they are proposing for content. We also have used some AI video tools for concept creation. I am also working on using AI to better determine attendance and participation grades for administrative tasks.
Currently using AI to develop new lecture content, specifically in quickly creating outlines for topics (not the content itself). I find it's a great tool for ensuring I have all aspects of a topic covered. I have been using AI to generate rubrics for grading and have been evaluating AI as a tool to assist with screening written assignments. I have also been exploring the creation of an AI agent to serve as a "virtual teaching assistant" to answer questions about course content or explain concepts to students online.
In all my courses, I use it as a tool to help write rubrics, and I also use it in curriculum activities to help rewrite things using Bloom's Taxonomy verbs.
Updating assignments. Summaries of reflections or submissions.
Solving client problems, writing emails to clients, use AI to get the process going-not the end all be all just saves time from an ideation standpoint.

I use it for demonstration of content creation in my Graphic Media Composition course. It shows how identical prompts result in very similar artistic creations and leads to a discussion on content ownership. I have also used it in my capstone course to show the similarities and deficiencies of AI currently when it comes to writing and accuracy of content. It serves to help demonstrate the shortcomings and error in relying too heavily on AI to do one's work for you. I also use it in demonstrations of estimating as students have tried to complete math-based estimates with ChatGPT only to be given a very wrong answer. With print, it is easy to confuse the system as there is not enough data to generate accurate assessments, especially without the guide of very specific prompts and instructions (at which point, just completing it by hand is easier as you already need to know the process in order for AI to function/estimate correctly).
1) Upload PPTs and ask for suggestions 2) Upload PPTs and ask for multiple-choice questions 3) Create assignments based on specific queries 4) In one class, I have the students query python code for web scrapping 5) Lots of trouble-shooting code 6) We are going to use AttentionInsight (AI Heatmappiing) in a few weeks for UX research.
I use AI every day. It is essentially for my teaching and for student learning.
The assignments were rewritten by AI to try and streamline the projects.
Ai is built into cameras (focus assists, auto settings, etc.) and into editing software for both video (selections, color correction, etc.) and photography (smart selections, sky replacement, etc.). Students use these tools in the course, but I do not necessarily emphasize that they are AI based in the assignment, just in a topical lecture.
I will sometimes use AI to generate feedback for my students or help me evaluate their mastery or demonstrated skills in non-technical areas. Sometimes, I will have AI provide insight on grammar, structure, tone, etc. However, I primarily use it to evaluate the materials I generate to ensure that my instruction sets are clear, or my objectives can be clearly realized by the content I am generating.
Do not require it but encourage its use in ideation stages and for storyboarding. I also use it occasionally to generate creative briefs for student projects.
Rewording comments for students within grading.

Appendix B

Question Eight Full Participant Responses

Key points for assessing printing process variables Using Artificial Intelligence (AI) for Generative Fill image compositing
1. Don't use AI to write your homework for you. 2. Don't trust AI.
In the future, I will use AI to support creative exploration. Students use generative AI tools to brainstorm packaging design concepts, explore variations of die lines, and generate imagery to accelerate their prototyping phase.
For students to become aware of the legal issues from using AI to generate designs.
Getting students familiar with the possibilities of using AI in the proper manner.
Better out comes on labs
1. Solve mundane administrative tasks 2. Support concept creation 3. Provide students with the proper approach to using the tools and adding human element
My primary goal is to utilize AI to create content faster and more thoroughly, as well as grade more efficiently. As stated above, I think there is some potential for AI to assist with alternative methods of explaining course content.
To have students understand that it is nothing more than a tool, and that it cannot be an author.
Learning to be comfortable in using ai. Learning about prompting.
Primary goal is to prepare students to deal with AI in the industry after the graduation.
The world of brand is moving at a faster and faster pace. We are helping our students understand that AI can jump start any project. It's a way to get the creative juices flowing.
Mainly showing limitations and deficiencies in an effort to try and reduce the amount of "cheating" or reliance on the system to complete their work for them. They still need to understand WHAT they are doing in order to get AI to function well for them. The idea of "garbage in, garbage out" when prompts are written is a necessary and often hard lesson for them.
It has made me a better teacher by helping me create learning content much faster. For my students, they must become well versed in Query Management.
I think we are trying to expose them to AI so that it is not "scary" or "wrong". Also, that it can be used to our benefit.
To gain design experience and exposure to AI-related tools in Adobe programs.
So that students will be ready to continue learning about and using AI in the coming years. It is moving way too fast for me to teach them what they will use in the future but hopefully it will seem a little less intimidating because they have been exposed to it a little.
I do not actively encourage students to use AI to complete my coursework. In fact, I encourage them to use AI as a supplemental tool but not a crutch. AI models should not be doing the thinking for you, they should be enhancing your thinking or guiding your research process.
Position it as a tool that they can use alongside Adobe/Figma in early phases of ideation

Appendix C

Question Ten Full Participant Responses

Makes life easier.
As I have said, currently AI cannot be trusted to provide reliable information. Should that change, then I might consider using it. I am not holding my breath, since the training set for AI (everything on the internet) has a very low bar for scholarship. AI would need to learn to be skeptical of self-proclaimed experts.
..AI tools help students rapidly generate design concepts, variations, and inspiration during brainstorming phases. AI excels at repeating tasks or explanations consistently, which can be especially helpful for students who need to review material multiple times.
AI should be a part of every GC student's toolbox.
As stated earlier, the primary advantage is to develop content faster and grade more efficiently.
I probably need to use it more in depth with students, but I am overwhelmed with where to start. It is impractical to think I could develop an assignment that is relevant for any amount of time with how quickly things are changing.
I think AI is too unknown to be fully embraced in the classroom. I'm not comfortable with the commercially available systems fully understanding the topic area and/or the best appropriate method for tackling a task in the graphic communications field. I think a customized engine would be something I would experiment with, but until someone in the industry takes time to teach the model how to function appropriately, I don't see much use in interacting with it.
Grading/feedback — would love to know how it could make this process less manual.
I'm planning on using it as an assignment requirement for content creation and for coding

Appendix D

Question Eleven Full Participant Responses

As of now, no. It only enhances awareness of AI.
No.
As I have seen, students are inclined to take the easy route on doing homework. They feed AI with some relevant topics and copy/paste the response into their homework. This defeats the purpose of homework, which is to encourage students to think about what was presented in lectures.
Yes, AI enhances student learning by offering personalized support, encouraging creative exploration, and providing access to instant feedback. AI allows students to quickly explore multiple design ideas, layouts, and color schemes, which helps them understand the impact of visual choices. Students can use AI tools as a study aid or tutor outside of class time, allowing them to reinforce concepts, get clarification, and practice on their own. This extends learning beyond the classroom and encourages independent study.
Too early to tell. Even so, I see the potential for jump-starting a design.
Yes. Helps them quickly explore multitudes of options.
It helps for better labs
Yes, it helps aid in concepts and presentation prep
Absolutely. While I discourage students from using AI to generate written material, I believe AI enhances student learning. I have seen students take presentation slides, upload them to an AI tool and ask it to summarize the material or explain it in a different manner.
It is a tool, no different than the Internet, statistical software, online academic databases, Grammarly, etc. It makes things more convenient, not easier.
Discovery and problem solving. Process workflow.,
Yes.
Yes, it's part of what they'll have to work with in the future. It's important for us to help them feel comfortable incorporating it into their everyday work.
I think it can...if students work with it, not rely on it. There are a lot of benefits, but so many attempt to use it as a shortcut and fail to learn the concepts and basics necessary to truly be successful in the GC field.
100%.... for the right application. If I were teaching students to write or write code, I would be reluctant, but I'm all about using the tools. They absolutely will be using the tools in the workforce. Why not be prepared now.
I think it can be a great tool, but there is a fine line between cheating and using it for a good purpose.
Yes, it gives them exposure to a current trend in the GC industry
I don't think it does
I am not sure. I think it is important for them to understand that it is used in these fields and will continue to be, but I am not sure it helps them truly understand the underlying concepts on how traditional practices are done and why. But maybe that is increasingly becoming irrelevant...

I think AI could help student learning, but often students use it to get around thinking for themselves. They are it to do things like summarize articles, create outlines, and conversationally discuss something that they're interested in, instead of taking the time to think through these things themselves. I think it can be a tremendous help for students who don't know where to start but can also be a quick solution for individuals who don't want to put in the effort.
Yes, I think it is going to be something they experience after college, so we need to give them the advantage in knowing it and understanding when/where to use it.
It can be helpful at providing options rapidly as well as concepts that the student has not already thought of.

Appendix E

Question Twelve Full Participant Responses

I recognize that my classes are somewhat different than the typical GC class. My classes are about developing knowledge and in-depth understanding of concepts which are often scientific in nature. My classes do not focus on acquiring skills or creating new designs.
AI has only been available in Adobe Projects since October 2023. It will be useful to graphic communications educators to see how this feature will change the authenticity of creative work.
I believe AI is a powerful tool in any educational setting. I think often AI is only discussed for its image generating abilities and the implication that has on creative design jobs. However, I think the use of AI to distill knowledge in different formats will be hugely beneficial to students.
I think AI is pretty powerful and could be implemented in many practical ways, but the fact that it's learning from everything online and anyone in the world can post anything they'd like online at this point worries me.
It can become something they depend on for ideas rather than fostering original thought

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