

## REDEFINING DESIGN EDUCATION: HOW AI FOSTERS CREATIVITY AND CRITICAL THINKING IN FJWU'S FEMALE STUDENTS

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Received: November 29, 2024 Revised: December 29, 2024 Accepted: January 13, 2025 Published: January 21, 2025

### ABSTRACT

*This research examines to what extent AI can benefit creative thinking and problem-solving skills in female university design students. A quantitative survey-based approach was adopted and 235 female participants who have used AI tools in their coursework were purposefully sampled. This study uses the Unified Theory of Acceptance and Use of Technology (UTAUT) which provides a useful lens to understand how AI tool impacts on university design students' creative thinking and problem-solving capabilities and how these can be influenced through the factors of technology adoption and use. Insight into usage patterns of AI and its perceived impact on creativity, as well as whether AI promotes or inhibits problem solving in design tasks, was captured through a structured online questionnaire. The findings show a strong alignment with UTAUT constructs, mainly Performance Expectancy and Effort Expectancy, as factors which drive AI tool adoption of design students. Nevertheless, design and user support areas for improvement remain related to Facilitating Conditions and perceived barriers to originality. If these issues are addressed it can aid to adoption, enhance innovation, and create a positive, empowering user experience. The results demonstrate an overwhelmingly positive view of AI tools as learning tools that facilitate idea generation and innovation, and therefore present an opportunity for AI to leverage design education.*

### INTRODUCTION

Artificial Intelligence (AI) is revolutionizing the traditional learning paradigms for graphic design education presenting students the chance to engage with futuristic tools, which are applied in a significantly digital world. AI is made possible to make learning experiences better as it can automate tedious tasks, make the workflow more effective and generate new graphic elements (Das & Rani, 2024). Specifically image generative AI tools have received attention from students for their potential to extend creative exploration (Casteleiro, 2024). Yet these advances are accompanied by danger, like the

danger for AI to become a shortcut it's too easy to rely on, negating the growth of critical thinking and originality (Lagrandeur, 2020). This roles of educators in addressing these concerns is to help students pass judgment on the digital content produced via AI and the ethical use of these techs. While AI is increasingly influencing the field of graphic design, thorough implementation of AI in graphic design education will be critical in raising tomorrow's students to confront and realize the next trends and possibilities (Muji, Svensson, & Faraon, 2024).

But with artificial intelligence (AI) on the rise, the landscape of design is mutating quickly. Nowadays, AI is integrated into design workflows in new ways to increase productivity, creativity, and problem-solving capability (Adeleye, 2013) they are especially helpful in academia, where students are finding themselves developing the basic skills and methods necessary for a future where they will begin to make their mark as professionals. The introduction of AI into the curriculum raises important questions: What's the effect of the application of AI tools on students' creativity? Are AI tools used in order to facilitate critical thinking and problem solving (Ayala-Pazmiño, 2023) More importantly, how does one make sure that AI is integrated in a way that students are not only capable of using these tools, but form a strong creative identity.

This research explores how AI is impacting on creative thinking and problem-solving abilities of graphic design students, paying attention specifically to how these tools affect their creative processes. The impact of AI has also raised concerns regarding scope of design possibilities, the originality of work, artistic vision and learning problem solving skills (Lawasi, Rohman, & Shoreamanis, 2024) . Educators must understand these dynamics so that AI can be integrated into design education in ways that help prepare students to use technology to support their creative potential, and not as replacement (Yang & Bai, 2020) . The objective of this study is to provide an understanding of the role of AI tools play in shaping students' creativity and problems solving abilities; with main focus on female Design students of Pakistan.

### The Rise of AI in Design

AI tools have transformed graphic design process, Adobe Sensei, Canva, DALL-E, and Mid Journey have all brought about tremendous change in the design world by allowing designers to automate tasks, improve workflow efficiency, and generate fresh ideas. These tools are based on machine learning algorithms and can edit image, layout composition, color selection etc. Thus, allow designers to dedicate their time to higher level creative tasks (Liu, Wang, & Chi, 2020) . In addition, generative AI models like DALL-E and Mid Journey have been powerful design assistants,

allowing the user to come up with highly different designs simply by modifying parameters, like color, style, and geometry (Yıldırım, 2023) . AI tools open up a world of possibilities for students to experiment with ideas, and to explore beyond conventional design methods. It provides a platform for exploring new possibilities as well as creative experimentation since manual design processes are being relieved from their constraints (Göçen & Aydemir, 2020).

Although AI tools make tasks easier but raises increase concerns about the authenticity and originality of the work created. Often, AI generated designs are developed using data, patterns, and user inputs already existing in the final product (Du, 2024) . This is especially pertinent for still developing students in terms of their creative identities. The challenge is making sure that AI doesn't become the crutch as students never learn to think independently and come up with original ideas. As AI integration into design education grows, it is important to examine whether they enhance or undermine students' creativity (Almaz, Elsayed, Abdelfatah, & Raafat, 2024).

### AI Tools and Creative Thinking

AI tools influence creative thinking in a multi-faceted way. On the one hand, AI tools can aid designers in making things and solve issues creatively. AI automates the more tedious parts of design such as resizing images or changing color palettes and allows humans to use that cognitive space for creative work. Similarly, AI can assist students in rapidly generating multiple design options for students to consider instead of just being limited to one (Fitria, 2021) . It can give more deep understanding of design and make students free to try some odd and unorthodox ideas and learn from AI-generated outcomes (Frascara, 2017).

However, relying too much on AI tools holds potential risk that can hinder creative development. Students may essentially skip over the creative and critical thought processes necessary for self-development and career advancement if they begin to rely too heavily on AI to produce solutions. AI may offer up color scheme or layout suggestions, but the AI wouldn't instill the deeper understanding of how those choices work.

According to Habib et al. (2023), while AI tools can improve some aspects of creativity, this also has the potential to make students lose their creativity if they start to use these tools without really understanding the principles that underlie design. However, the shift could result in less, or less original, or less authentic work that students could produce from AI generated designs.

More importantly, there is a philosophical dimension to what AI and creativity debate is about. AI systems operate by analyzing vast amounts of data to generate novel solutions, which raises the question: Are machines truly creative? This question is important for students learning graphic design because it may influence how they understand and understand how to create and imagine new ideas, as well as it may impact how they think about their own work (Meron, 2022). The addition of AI into design education breaks the conventional notions of the role of creativity — human intuition and expertise serve as the lead to innovation. To facilitate this shift, we must also rethink what being creative in the age of AI means, as well as how students can creatively use technology (Wan Ismail et al., 2023).

### **Problem-Solving and AI**

At its core, design is a problem-solving process, and AI can make a big impact on how students solve design problems. AI tools can offer automated solutions and offer alternative design approaches as helpful tools for students to solve design problems. For instance, the AI can assist students to optimize layout, choose the correct typography, and that their design is compliant with accessibility standards (Xu, 2024) beyond technical execution, these tools help students gain a clearer understanding of design principles, so they can make better decisions.

AI poses challenges for thinking critically or independently, while it does help with solving problems. With AI tools automating many of the design process, students lose interest in the iterative problem-solving process that is the hallmark of developing good design skills (Nguyen & Nguyen, 2023). Excessive reliance on AI generated solutions could cause students to skip out on the fun in learning through running through various approaches and culminating in a

particular design by means of repeated trial and error.

### **The Role of AI in Design Education**

Educators attempting to integrate AI into design education have unique challenges and opportunities to face. With the increasing availability of AI tools, it becomes a possibility to uproot how design is taught, making the students gain more productive use of their time and give them the chance to play around more freely with design concepts (Poleac, 2024). Despite this, this integration needs to be done in a way that makes sure not to make AI subvert the growth of students' own creative identities. So, educators have to balance teaching students how to make use of the AI tools appropriately, together with promoting original methods of thinking and problem solving (Hamamra, Mayaleh, & Khlaif, 2024). That's why it demands a meticulous exploration of how the integration of AI can be seamlessly crafted into the curricula to enrich, instead of to replace, students' creative and technical development.

Additionally, one should keep in mind ethical considerations regarding the use of AI. In addition, the issue of bias in the AI algorithms, intellectual property rights, and the risk that AI may repeat the previous inequalities in design practice should be handled. With increasing use of AI tools in design education, it becomes increasingly important for students to learn about these ethical matters, and to have a critical view about how AI can assist to design responsibly (Fazil, Hakimi, & Shahidzay, 2024).

### **Literature Review**

Artificial Intelligence (AI) is transforming design processes and principles across various domains. AI-powered tools automate repetitive tasks, freeing designers to focus on creative aspects. These tools can generate numerous design options based on constraints, enabling efficient exploration of novel solutions (Saeidnia & Ausloos, 2024). By utilizing AI to reinforce Design Thinking principles, such as user centeredness, creativity and iterative learning, it supplies it with new creative power. Such ability to learn enables highly personalized solutions along with continuous product updates through

learning iterations. As problem solving becomes a function of the AI, human design moves towards sensemaking and understanding what problems to solve. This shift basically places design closer to leadership inherently an activity of sense making (Verganti, Vendraminelli, & Iansiti, 2020). Yet, as much as we integrate AI into design, the ethical issues — transparency, fairness, and bias — have to be taken into account to have a responsible implementation (Brey & Dainow, 2023).

Several recent studies explore effects of artificial intelligence (AI) on student creativity and learning in higher education. AI tools can help with creative thinking and problem solving while, at the same time, degrading creativity and creative confidence (Pham & Le, 2024). AI can potentially support self-assessment and co evaluation processes in creative tasks, such as storytelling (Dhara, 2022). Nevertheless, there are challenges associated with the integration of an AI in the education system, namely, a lack of pedagogical integration of an AI systems and moral concerns (Lampou, 2023).

Graphic design is getting influenced by Artificial Intelligence (AI) consisting of opportunities and challenges. With its technologies, AI is able to streamline busy tasks, personalize user experiences, and expand creative possibilities (Buryk, 2024). Recently, generative neural networks like DALL-E and Mid-Journey have become indispensable tools for many designers, offering large variability in parameters and adjustable color, contrast, and geometric proportions (Gerenko, 2024). Yet, AI can enhance efficiency and introduce new graphic material (Blazhev, 2023), and at the same time it is worrying about a 'deskilling' of creative professions and the formation of a layer of non-professional designers (Meron, 2022). As AI becomes a part of more design process work, questions of ethical considerations, such as transparency and equitable access, become important (Buryk, 2024).

To solve these challenges, better involvement from graphic designers in AI research and the interdisciplinary collaboration is required to use a blend of AI's strength while preserving the creativity of humans (Meron, 2022; Buryk, 2024). While a study of AI in the Brazilian UX/UI design process shows how AI is increasingly being

integrated into the process. How big is the perceived threat to job displacement? For some designers, it seems huge; for others, they are more likely to see AI as a productivity boost. According to the research, AI is primarily used to automate administrative processes and freeing creativity. Meta Morph, AGP and Sketch2Code are examples of how an AI can automate the process of creating layouts, generating personas and translating interfaces, speeding up prototyping and accelerating design while helping with efficiency. AI is redefining the way of working in design disciplines while still preserving core principles of design (Zamani, Mikalef, and Zhu, 2023).

AI opens up new ways in art education to develop new competencies and new teaching methodology, while at the same time challenging traditional learning practice (Zhanguzhinova, 2024). Second, according to researchers, the implementation of AI in education should be done carefully in order to avoid replacing human educators with a tool, as the latter is meant to be an auxiliary way rather than a means of doing without. Research on use of AI in education is still growing and there's still a lack of complete understanding on how AI can really help as well as what it can cause in education (Wan Ismail et al., 2023; Zhanguzhinova, 2024).

Wuppertal (2023) highlights how AI has made graphic designing field efficient in the workflow, and productive in the design. It shows us the roles AI has taken in tasks like image editing, font selection and color, and layout composition.

The Grid is one of the real-life examples on how to use AI in graphic design. Grid is an AI website builder, that can generate custom designs as per user requirement. But they are not so creative and original, its designs are not so flexible and we have criticized it because it is not flexible enough. Then, there's Logojoy, which serves as a logo AI assistant. The designs that it produces are too generic and predictable to work like that but it works like a charm. Though they may not be as complex as that, these tools may or may not work, but sometimes may facilitate to create a new idea (Mustafa, 2023).

Chuyen and Vinh (2023), they reveal critical intersections between graphic design and artificial intelligence, and discuss its impacts to the profession and the call for better interspersed



collaboration. The rising automation and reliance on AI tools are shown to render the creative agency of graphic designers impossible and create a two-tiered professional system, is argued in this study. The absence of a robust creative design discourse in academia has resulted in the decreasing of graphic design to its functional outputs, limiting the potential of AI to become integrated within the creative process meaningfully. The importance of collaboration between graphic designers and computer scientists is shown, and particularly emphasized as AI becomes more and more of a reality in the design world.

More research is needed into the long-term effects in terms of creativity and originality of AI on the graphic design. If used heavily enough, AI tools would not only provide a novel way to assess student understanding and skill development, but longitudinal studies could provide insight into whether students relying on them in their education develop different skill sets than those who don't, thereby influencing their professional readiness and adaptability (Jones & Lee, 2021). Studies looking at specific design domains like illustration, branding, and of motion graphics can further clarify how AI shapes design domains across the whole gamut of graphic design (Xu et al, 2020).

This literature reviews the current relationship between AI in design education that posits a nuanced relationship between the technology and creativity. AI has potential to empower students to be creative, to solve complicated design challenges, but it also carries risks of overreliance, loss of originality. Ultimately, the task for educators is to use AI in a manner that augments rather than supplants students' creative instincts

and problem-solving abilities. Further research in this field will be necessary to cultivate an approach to AI in design education that ensures that designers can take advantage of technology without compromising on human creativity.

**Theoretical Framework**

This research uses the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. (2003), which provides a useful lens to understand how AI tool impacts on university design students' creative thinking and problem-solving capabilities and how these can be influenced through the factors of technology adoption and use. UTAUT provides a framework to research both students' initial adoption of AI tools and the factors that influence how students integrate the AI tools into their creative thinking and problem solving in design education.

**Methodology**

A quantitative survey-based approach is adopted for this study to investigate how AI tools influence creative thinking and problem-solving skills of female university design students. A purposive sampling technique was used to engage a population of university design students who use AI tools, resulting in a final sample of 235 female students. Data on AI usage (i.e. patterns of usage) and perceived impact of creativity, in terms of facilitating or inhibiting problem solving; the role AI plays in design tasks (i.e. problem solving in design tasks) was gathered using a structured online questionnaire. In this way statistically significant insights are gained into the integration and effect of AI on design education.

**Findings**

**Section 1: Background Information**

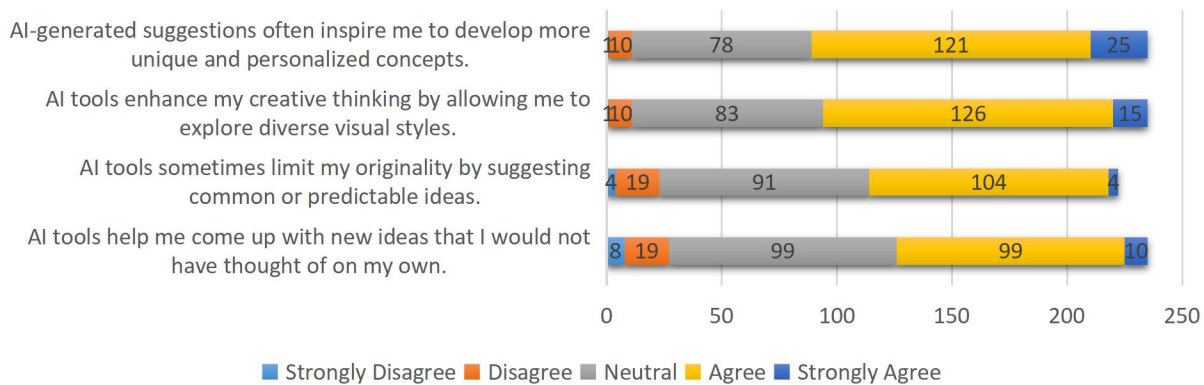
Category	Details	Responses
<b>Year in Design Program</b>	- First Year	5 (2.1%)
	- Second Year	59 (25.1%)
	- Third Year	89 (37.9%)
	- Fourth Year or Above	82 (34.9%)
<b>Frequency of AI Tool Usage</b>	- Never	7 (3%)
	- Occasionally	44 (18.8%)

Category	Details	Responses
	- Sometimes	100 (42.7%)
	- Often	56 (23.9%)
	- Always	27 (11.5%)
<b>AI Tools Used in Design Projects</b>	- ChatGPT or Text-Based AI	193 (82.1%)
	- Canva's AI Features	69 (29.4%)
	- Other	50 (21.3%)
	- Adobe Sensei	20 (8.5%)
	- DALL-E	18 (7.7%)
	- Midjourney	13 (5.5%)
	- Runway ML	7 (3%)
	- Deep Dream	1 (0.4%)

Overall, there is a strong preference for text-based AI tools among participants, with a diverse range of other AI options also in use. The data indicates that text-based AI tools, particularly ChatGPT, are widely adopted, while tools like Canva also hold significant usage. Other AI tools have varying levels of engagement, with many respondents exploring options beyond the major platforms. The results of the **Section 1** indicate a diverse and experienced group of design students, predominantly in their third or fourth year of the program. While the majority (78.1%) use AI tools at least occasionally, with 42.7% using sometimes, and 23.9% often. ChatGPT and text-based AI tools were used by 82.1 percent of all respondents in their design work, often for a reason of being flexible and accessible tools. And (29.4%) following Canva's AI features are the items that see students picking visually driven easy to use platforms. While students are less experimenting

with the other tools as Adobe Sensei, DALL-E, and Midjourney. These observations concur with the Performance Expectancy (PE) construct due to the fact that these tools satisfy the users' level of expectation to increase productivity and creativity. Moreover, Effort Expectancy (EE) is very important, as the ease of use and the intuitive interface of tools such as ChatGPT and Canva makes them popular. It is likely that Social Influence (SI) encourages widespread adoption, through peers and the educational contexts in which the tools are perceived as popular. But its low uptake of advanced tools suggests there are weaknesses in Facilitating Conditions (FC), that do not have sufficient infrastructure or training for more advanced AI technologies. The section 1 overall shows strong interest in AI tools, but this is a great opportunity for growth in adoption and deeper tool integration into design work flow.

**Fig 1: AI tools and Impact on Creativity**



As Section 2 shows, AI tools are perceived mainly as advantageous for creativity. And majority of respondents (99 agree, 10 strongly agree) AI aids in the generation of new ideas, which they really wouldn't have thought of by themselves. But 104 respondents agree that AI can sometimes suggest predictable ideas and worries that it might end up putting limitations on originality. However, most participants (126 agree, 15 strongly agree) think that AI supports creative thinking by providing numerous visual styles. There are 126 people that see AI tools as enhancing creativity and idea generation. This is in line with the construct of the

Performance Expectancy (PE) because users will value AI capabilities for creating/ refining ideas. A strong Effort Expectancy (EE) reflection in the ease with which AI can be incorporated as a workflow element encourages its utilization. The findings of positive perception of AI's creative benefits produce very strong Behavioral Intention (BI) to continue using these tools in design practice, however with some limitations. Overall, while some reservations exist, AI is largely valued for broadening creative possibilities and fostering innovation.

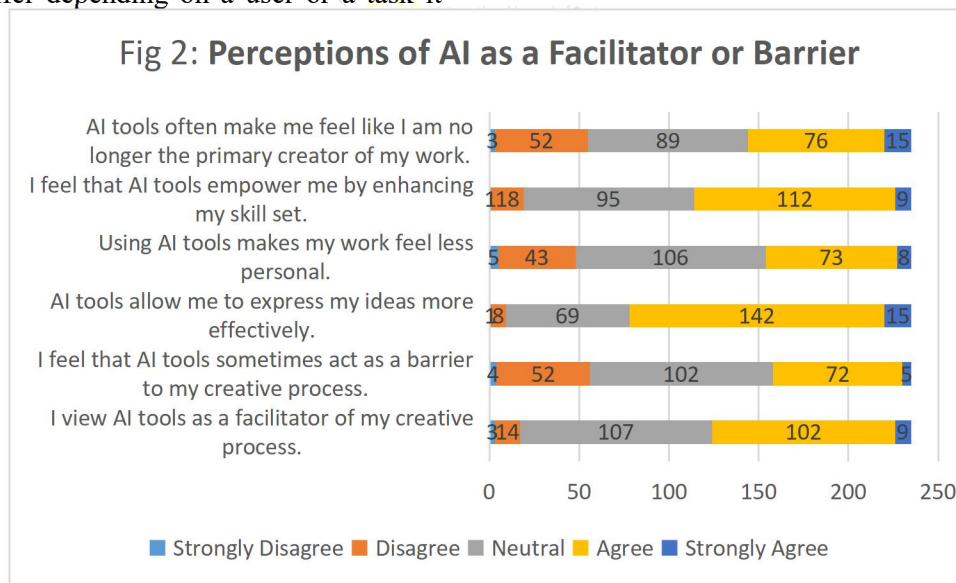
**Section 3: AI tool and impact in creativity**

AI tool and impact in creativity	
Question:	Response Count (%)
Which AI tool do you use the most, and why?	
ChatGPT / variations	192 Majority Response
Cloud Computing, runway ML, deep dream, mid journey, Leonardo AI, Microsoft designer	Few Responses
Canva AI	Few Responses
Question:	
How do you feel this tool has impacted your creativity?	
Increased my creativity significantly	65
Increased my creativity somewhat	119

AI tool and impact in creativity	
Had no impact on my creativity	37
Decreased my creativity somewhat	13
Decreased my creativity significantly	1

**Section 3** results indicate predominantly positive effect of AI tools on creativity yet most of the respondents report improvement in creativity. The fact that ChatGPT is the most used AI tool, indicates that text-based tools are particularly well suited to supporting creative workflows because they are so versatile at generating ideas, solving problems and tend to help with brainstorming. It's also less used with cloud computing, a hint possibly at its more technical or specialized role in design work than tools like ChatGPT which are geared more directly to providing creative assistance. The findings indicate that there is strong potential for AI tools to serve as inspiration drivers, as 65 respondents report an important increase in creativity. Yet, some of 37 participants who commented that AI tools did not affect their creativity, suggests that while the effectiveness of AI might differ depending on a user or a task it

might not deprive someone creativity. A minority of respondents (13) reported that the use of AI hindered their creativity, perhaps fearing that AI may predict too many ideas, and this in turn was too formulaic or predictable, inhibiting creative thought. The above findings show that ChatGPT had the highest support for creativity in the form of brainstorming and idea generation, consistent with Performance Expectancy (PE), which is that users value its versatility and effectiveness. This highlights the necessity for improving Facilitating Conditions (FC) to help address the fact that the tool does not address diverse user needs and tasks. Most respondents mention increased creativity, but their Behavioral Intention (BI) is restricted by concerns about predictability and 'little influence', suggesting that some users may adopt AI with caution or in a selective manner.



In this **section 4**, the responses show a mixed view of the use of AI, in the creative process, some students think the tool is a helpful facilitator, others think the tool may block the creative process. A good number of respondents (102

agree, 5 strongly agree) regard AI as a means to stimulate creativity, suggesting that this tool is useful for helping boost creative work. This echoes Performance Expectancy (PE) since we like the fact that AI tools can help express and visualize ideas (142 agree, 15 strongly agree). In



addition, 112 agree that the AI tools increase their skill set, implying that the AI tools are not just assistance, but are also active contributors to personal development. But there were some respondents who thought that some as a barrier (102 agree; 107 neutral) finding that AI can sometimes restrict their creative freedom or flexibility. Findings suggest a fear that AI is actually reducing the amount of personal touch for the designers (73 agree). A lot can be seen in the fact that 76 agree that AI tools make them feel less like the primary creators of their work.

Despite these concerns, respondents generally agree that AI's contribution to the creation of creativity supports Performance Expectancy (PE). So easy it's scary, AI tools are easy to use for some, but they weren't designed well, so it's important to enhance how they are designed to prevent them from restricting creativity. Overall, AI facilitative role is viewed in a positive way, more than its implications, with a cautious but strong Behavioral Intention (BI) to use the AI tools in creative workflows.

**Table: AI Tools and Problem-Solving Approaches**

Question	Response Option	Responses
<b>When working on a design project with AI tools, how often do you find that AI helps you overcome creative blocks?</b>	Always	13
	Often	61
	Sometimes	123
	Rarely	31
	Never	7
<b>How has the integration of AI tools influenced your approach to solving design problems?</b>	Made problem-solving easier	155
	Made problem-solving more challenging	23
	Has not affected my approach	32
	Other	25
<b>Do you find that AI tools influence the way you iterate on design concepts?</b>	Yes, speeds up iterations and explores options	92
	Yes, but sometimes distracts from direction	81
	No, rely on my own iterations	37
	Other	25

**Section 5** results indicate AI tools are widely perceived as helpful in overcoming creative

blocks, 123 respondents believe that AI tools are sometimes very helpful in overcoming creative

blocks, while 61 more say that AI is often very helpful in this regard. Less than 7 thought AI never made it easier to work past creativity blocks. These results confirm that AI is a key means to problem solving and creative support, consistent with Performance Expectancy (PE) as respondents believe that AI can break the stagnation. A powerful majority (155+) suggest AI tools are useful for reducing the time and effort spent on problem solving, and simplify complex tasks and improve design workflow. It aligns with the Performance Expectancy (PE), as AI tools are viewed as capable to enhance productivity. But 23 of them say AI makes solving problems more challenging. An additional 32 respondents believed that AI had no impact on their problem solving and, therefore, showed diversity with regards to how useful it perceived AI to be. Regarding iteration, 92 respondents agree that AI shortens the process showing that, while AI can speed up the design iteration process. In fact, despite its apparent advantage, 81 participants highlighted to point out misalignment between AI generated ideas and what the designer intended. In addition, 37 respondents favored to rely on their own iterations, demonstrating the continual superiority of human creativity within the iterative cycle. The responses represent different experiences and different utility of the AI tools in the iterative process. In summary, AI tools are valued for helping solve problems and iterate, demonstrating high Behavioral Intention (BI) to continue using them. Yet there are alignment and distraction challenges indicating that in addition to facilitating conditions (i.e. better support, resources) their use in the design workflow can be better.

### **Conclusion**

Overall, the survey indicates a growing interest in AI tools and highlights their value in broadening creative possibilities, fostering innovation, and enhancing design workflows. While many respondents recognize the benefits of AI in overcoming creative blocks, simplifying problem-solving, and speeding up iterations, there is also variability in how AI tools are perceived and utilized. Some reservations remain, with concerns about AI potentially distracting from design direction or reducing the personal nature of work.

These mixed perceptions suggest that while AI can significantly boost creative potential for many, its effectiveness is not universally felt across all individuals or tasks. This presents a significant opportunity for increased adoption and deeper integration of AI tools into design processes, but it also emphasizes the need for a thoughtful approach to ensure that AI complements and aligns with each designer's unique workflow and vision. As AI continues to evolve, addressing these concerns will be crucial in ensuring that it remains a valuable asset in the creative process.

The data reveals a nuanced perspective on the integration of AI tools in creative processes, highlighting both opportunities and challenges. On the one hand, there is strong appreciation for AI's ability to help navigate creative blocks, streamline problem-solving, and accelerate iterative processes. This reflects the alignment of AI tools with the UTAUT Performance Expectancy (PE) construct, as users find these tools effective in enhancing productivity and fostering innovation. Additionally, the widespread adoption of user-friendly platforms like ChatGPT and Canva underscores the importance of Effort Expectancy (EE) in facilitating seamless integration into workflows.

However, expressed concerns about AI creating distractions, complicating problem-solving, or limiting originality highlight a critical tension. For some respondents, these tools can stray from the intended design direction, reduce the personal touch, or even diminish the sense of creative ownership. These findings suggest gaps in Facilitating Conditions (FC) and underline the need for tailored support, training, and refinement of AI functionalities to better align with users' creative intentions.

The variability in AI's perceived impact—ranging from significant enhancements to reports of no impact or negative effects—emphasizes the role of individual user experiences, preferences, and tasks. This variability is tied to Social Influence (SI), as trends in usage and peer practices shape adoption, and Behavioral Intention (BI), which depends on whether users perceive AI as a complement or hindrance to their creative processes.

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