The Integration of Artificial Intelligence Into Graphic Communication Design Profession: Opportunities and Challenges

Sunday Saje Gyang [1], Baba Jonah [2], Zirra Bonaventure [2]

[1] *National Institute for Policy and Strategic Studies*
Kuru P. M. B. 2024, Bukuru, Plateau State, Nigeria

[2] *University of Maiduguri*
1069 Bama - Maiduguri Rd, Maiduguri 600104, Borno, Nigeria

DOI: 10.22178/pos.123-25

LCC Subject Category: T1-995

Received 25.09.2025
Accepted 28.10.2025
Published online 31.10.2025

Corresponding Author:
Baba Jonah

Abstract. The opportunities for integrating Artificial Intelligence (AI) into graphic communication design are transforming the profession, even as this technological shift presents significant potential alongside inherent challenges. Using a quantitative approach, this research engaged graphic communication designers through questionnaires and interviews to assess the benefits and setbacks of AI tools in the graphic design profession. Results indicate that AI tools can effectively enhance workflows and should be regarded as partners. However, there are critical challenges, including ethical issues related to authorship, originality, and the potential undervaluation of traditional skills. Navigating this new landscape requires a balanced approach that maximises AI's benefits while addressing its impact on the profession's future.

Keywords: Artificial Intelligence; Traditional Graphic Designer; Generative Models; Manual Coding; Image Generation.

INTRODUCTION

The field of graphic communication design is undergoing a significant transformation due to the rapid integration of Artificial Intelligence (AI). Author [1], argue that graphic design has traditionally been a deeply human-centric discipline, relying heavily on human skills, creativity, aesthetic intuition, and technical proficiency, however, the rise of advanced AI tools, especially those utilising machine learning and generative models, is changing the creative process, redefining the designer's role, and challenging long-standing industry norms [2]. This technological evolution presents a complex landscape of remarkable opportunities alongside considerable challenges.

In America, the integration of Artificial Intelligence (AI) into the graphic communication design profession represents a pivotal technological shift, echoing past transformations such as the advent of desktop publishing. Initially, emerging in research labs in the mid-20th century, AI's practical application in design began with rudimentary expert systems. However, the 21st century, particularly the 2010s, marked a critical turning point with advancements in machine learning and neural networks. The development of Generative Adversarial Networks (GANs) and subsequent large-scale models, such as DALL-E and Midjourney, in the 2020s enabled access to AI's creative potential, shifting it from an analytical tool to a generative partner [3].

This integration has fundamentally disrupted traditional workflows. It has automated repetitive tasks and enabled rapid iteration of complex concepts. As a result, the graphic communication designer's role has evolved, emphasising curatorial and strategic oversight rather than manual execution [4]. The profession now faces new ethical considerations, including copyright ambiguity, algorithmic bias, and questions about authorship. The history of AI in graphic communication design, therefore, is not merely about technological adoption; it is about a profound renegotiation of the creative process, requiring new skills and ethical frameworks as practitioners navigate this augmented landscape.

The integration of Artificial Intelligence (AI) into Africa's graphic communication design profession represents a nascent but rapidly evolving

paradigm shift. Globalised access to cloud-based AI tools is driving this technological incursion and dissolving traditional barriers to advanced design software [5]. For many African graphic communication designers, AI offers a powerful means to enhance productivity, automate repetitive tasks such as image editing, and generate initial creative concepts, thereby allowing greater focus on strategic and cultural refinement.

Despite its potential, integrating AI into the African graphic communication design industry poses significant challenges. The digital divide, characterised by unequal access to high-speed internet and computational resources, threatens to create a new class of digitally marginalised creatives [5]. In addition, ongoing academic and professional discussions highlight the cultural implications of AI. Most generative AI models are trained on predominantly Western datasets, which increases the risk of cultural homogenisation and the loss of distinct African aesthetic traditions. Consequently, designers must rigorously evaluate and curate AI-generated outputs to ensure alignment with local contexts and narratives.

While AI presents a formidable tool for accelerating the growth of the African graphic communication design industry, its successful integration hinges on addressing infrastructural inequities and fostering a critical, culturally grounded approach to its application. The future will likely see a hybrid model in which human creativity guides AI to produce work that is both technically proficient and authentically African, as [5] opined.

This study investigates the impact of AI on graphic communication design, highlighting the new creative possibilities it presents. The study critically assesses the ethical concerns of copyright, originality, and authorship, and it examines the professional and practical challenges that must be addressed. It argues that although many people view AI as a replacement for traditional graphic design and human skills, designers can use these tools as powerful collaborative partners that enhance creativity and efficiency when applied thoughtfully. The study also stresses that integrating AI into the graphic communication design industry in Nigeria requires careful consideration of its broader implications.

Furthermore, the study takes a historical view of the evolution of graphic communication from the cave age to the opportunities and challenges of Artificial Intelligence tools in graphic communication design. To achieve the aim of the study, the objectives set are as follows:

a) To examine the integration of artificial intelligence tools within the field of graphic communication design.

b) To evaluate the evolving role of graphic communication designers in an industry increasingly shaped by artificial intelligence.

c) Identifies ethical considerations and professional challenges associated with integrating artificial intelligence into graphic communication design practice.

The study formulates the following research questions to address these objectives:

a) How does the integration of artificial intelligence reshape the professional identity and workflow of graphic communication designers?

b) In what ways does the adoption of AI-augmented tools redefine the core competencies required of graphic communication designers?

c) What are the professional challenges and ethical considerations that graphic designers face as they integrate AI tools into their creative practice?

Literature Review

The Evolution of Communication Art. Graphic design is the art and practice of planning and projecting ideas, information, and experiences with visual and textual content to a particular audience. It also includes the use of emotionally charged content to attract attention and inspire action [6]. Historically, this field can be segmented into periods defined by the dominant tools, technologies, and philosophies of visual communication [7]. This progression reflects a journey from craft-based production to a complex, interdisciplinary field integral to modern society and heavily influenced by technology.

Communication Art during the Cave Age. The cave arts of the pre-industrial era, known as the European Upper Palaeolithic period (c. 50,000-10,000 years ago), were far more than mere decoration or primitive pictures. The cave art found at sites such as Lascaux in France and Altamira in Spain represents a sophisticated, codified system of visual communication. This imagery functioned as a deliberate graphic language, combining symbolic representation, narrative sequencing,

and culturally specific design principles to convey complex information within hunter-gatherer societies [8].

These actions demonstrated profound creative artistic skill and sensibility. These techniques were not merely practical solutions; humans intentionally linked them to the cultural and spiritual motivations that drove them to create art deep within the earth. This intentionality in composition elevates the imagery beyond static symbol making, placing it firmly in the realm of visual storytelling.

The tools, technologies, and underlying philosophies evident in Upper Palaeolithic cave art at sites such as Lascaux and Chauvet demonstrate complex cultural behaviours. Artists utilised a range of implements, including flint burins for engraving, mineral pigments combined with binders for painting, and advanced application methods such as brushing, blowing, and stencilling [9]. The philosophical context of this art remains contested, with prevailing theories suggesting that it was integral to shamanistic practices, where the cave wall served as a boundary between worlds, and the images acted as supernatural interventions [10]. The convergence of technical skill and symbolic reasoning in this context represents a significant advancement in human cognitive development.

Communication Art during the Industrial Revolution. The Industrial Revolution, spanning the late 18th to the 19th century, was a period of profound technological and social transformation that fundamentally reshaped the practice, aesthetics, and societal role of graphic design. This era marked a decisive shift from craft-based production to industrial manufacturing, thereby transforming graphic design from a luxury service for the elite into a powerful medium of mass communication. The impact was multifaceted, driven by innovations in printing technology, the rise of consumer culture, and the emergence of new professional practices [7].

The most direct impact stemmed from the mechanisation of printing. The introduction of the steam-powered printing press, pioneered by figures like Friedrich Koenig, exponentially increased production speed and volume while reducing costs. Alois Senefelder's development of lithography complemented the evolution of early printing techniques by offering a more versatile and economical method for reproducing images and text, thereby bypassing the need for expensive, time-consuming engraving. These technological leaps democratised printed material, making books, newspapers, and advertisements accessible to a rapidly growing literate public [7].

The Industrial Revolution fundamentally altered graphic communication design through mechanisation and the emergence of new design philosophies. The introduction of the steam-powered printing press facilitated mass production, while lithography enabled more versatile and artistic forms of printmaking [7]. These technological advancements contributed to the proliferation of advertising and informational graphics, supporting the growth of capitalism and increasing public literacy. Nevertheless, this era also experienced a significant philosophical divide. Industrialisation frequently led to ornate, visually complex designs, prompting the Arts and Crafts movement, led by William Morris, to advocate a renewed emphasis on craftsmanship and aesthetic coherence in response to concerns about mechanical degradation [8].

Industrial forces not only changed how designers produced graphic communication but also redefined its very purpose. It transformed the field from a bespoke art into an industrial and commercial discipline, laying the foundational infrastructure for mass media. The tensions it created between mass production and artistic integrity, commerce and communication established the central debates that would continue to shape graphic communication design throughout the 20th century and into the present day.

Communication Art in the Modernist Era. The Era after the Industrial Revolution, commonly referred to as the modernist era, witnessed the advent of modernist thoughts. Movements like Arts and Crafts, Bauhaus, and Swiss International Style introduced principles of composition, grid systems, asymmetry, and a philosophical emphasis on "form follows function." Designers like Jan Tschichold and Paul Rand professionalised the field, establishing it as a strategic practice rather than mere decoration. This period codified the foundational principles of visual hierarchy, legibility, and conceptual problem-solving that remain central to design education today [11].

Communication Art in the Digital Revolution Era. In the 1970s, a stage was defined by a dual upheaval: a philosophical challenge to modernist uniformity and the advent of the personal computer. It embraced eclecticism, historical reference, and visual experimentation. Concurrently,

software like Adobe Photoshop and Illustrator emerged as design tools, moving the craft from the drafting table to the screen; this dramatically increased production speed and enabled new forms of digital manipulation and typographic creation, dissolving the boundaries between designer, typesetter, and printer [12].

Communication Design in the Interactive and Experiential Era. The Interactive and Experiential Era, which began in the 2000s, is shaped by network connectivity and user-centricity. The focus has shifted from designing static objects (posters, pages) to designing dynamic systems and experiences, encompassing web design, UI/UX, motion graphics, and immersive environments. The designer's role has expanded to include interaction design, user research, and prototyping within multidisciplinary teams. The proliferation of mobile technology and social media has further stressed the need for designs that are responsive, accessible, and capable of functioning across multiple platforms [13]. The advent of artificial intelligence (AI) is instigating a paradigm shift within the modern graphic communication industry, fundamentally altering creative workflows and professional roles. Generative AI models, particularly those for image generation such as DALL-E and Midjourney, have enabled the creation of complex visuals, enabling rapid ideation and asset production from simple text prompts [14]. This has enhanced efficiency across tasks ranging from concept art generation to variation in marketing materials.

Graphic Communication Design and Artificial Intelligence Tools. Authors [15], in their work, Exploring the Potential Impact of AI on the Role of Graphic Content Creators: Benefits, Challenges, and Collaborative Opportunities, looked at a few AI tools that are used by graphic communication designers, some of which include:

1) Designs.ai is a robust, comprehensive design tool that covers everything from logo creation to video production. It is a one-stop solution for every design need. It streamlines the creative process by enabling seamless transitions between different types of design work on a single platform. Its machine-learning capabilities make designing easy for even non-professional graphic designers. The extensive library of graphics, fonts, design elements, and colours enhances the design process.

2) Adobe Sensei harnesses machine learning and artificial intelligence (AI) to automate tasks and streamline workflows across Adobe's Creative Cloud suite, including Adobe Illustrator, Photoshop, and InDesign. It automatically performs functions that would otherwise require significant manual effort, such as object selection and masking, pattern recognition, font recognition, and image enhancement; this not only speeds up the design process but also boosts creativity by allowing graphic designers to spend more time on creative tasks rather than on boring technical details.

3) Autodraw is a super-useful (and free) AI design tool that turns simple doodles into professional-looking drawings in just a few seconds, making it useful for quick ideation or prototyping. It is beneficial and convenient for those who lack drawing skills.

4) Let's Enhance is one of the most powerful AI graphic design tools for image upscaling. Unlike conventional upscaling methods, which often rely on blurring, Let's Enhance uses AI to upscale images up to 16 times their original size, without losing quality. It can even enhance details, textures, and edges, and fill in previously missing information. AI tools can transform old, blurry pictures into high-quality images for printing and digital media.

5) Khroma is a design tool that uses AI to generate personalised colour schemes based on individual preferences; this is ideal for graphic designers seeking colour inspiration or aiming to maintain consistency throughout their design work. Khroma lets you select 50 preferred colours from a large selection, based on your instructions. Khroma generates limitless colour combinations that resonate with the concept style, providing an unlimited library of favourite colour combinations to reference later, and get colour names, hex codes, RGB values, CSS codes, and WCAG accessibility ratings for each combo.

6) Remove.bg is one of the best AI graphic design tools for removing backgrounds from images, freeing designers from painstaking manual work. Upload your picture and Remove.bg will automatically identify the photo subject and remove the background. No technical skills required. It even handles challenging edges, giving your photos a professional and polished look.

7) Canva is one of the most popular and accessible graphic design tools, making it easy to create everything from posters and brochures to social media posts and presentations. It has an easy-to-

use interface, uses a simple drag-and-drop method, and offers an extensive library of free images and pre-made templates. Where AI comes into play is with its Magic Design feature, which provides layout and design suggestions for a range of creative assets using text prompts and uploaded images. Canva allows your ideas to come to life.

8) Sketch2Code Microsoft's Sketch2Code is an innovative tool that uses artificial intelligence to convert hand-drawn designs into HTML elements. It is a favourite among designers and developers, as it streamlines the web design process, quickly moving from ideation to prototype without the tedious task of manually coding early design iterations. Designers can work together in real time, sharing ideas on a communal whiteboard. The design, including the written text, is automatically translated into HTML. Sketch2Code automates this process, accelerates project timelines, boosts collaboration between design and development teams, and ensures that teams accurately translate creative ideas into digital experiences.

9) DreamStudio (built on Stable Diffusion) is a text-to-image generator that can create any image. The tool can translate any text into an image, the more detailed, the better, and will produce complex photos that match the descriptions, with high-quality graphics and stunning visuals. The tool offers various styles, from photographic and cinematic to comic book and 3D model, with some very niche options. The platform allows users to upload images and text for editing and enhancement.

10) Fontjoy leverages the power of deep learning to help you find the ideal font combinations for your design work; this is one of the most time-consuming tasks on any graphic designer's to-do list, and this innovative approach saves a whole lot of time and eliminates haphazard guesswork from the process. Fontjoy evaluates thousands of font characteristics to find complementary fonts, pairing them to blend seamlessly for visual appeal and impact. Thus, maintaining a perfect design balance and contrast, and also reaching out effectively to the target audience,

The Transformative Potential of AI in Graphic Communication Design. The integration of Artificial Intelligence (AI) into graphic communication design is not a distant future but a present reality, fundamentally reshaping the discipline. This evolution presents significant opportunities to enhance creativity, efficiency, and strategic impact.

AI improves efficiency through automation. Repetitive, time-consuming tasks, such as resizing assets for different platforms, performing basic photo edits, and generating multiple colour palettes, can be handled by AI tools, allowing designers to focus on higher-level strategic thinking, conceptual development, and nuanced art direction [16]. AI enables unprecedented levels of personalisation. By analysing user data, AI systems can dynamically generate and tailor visual content, such as marketing banners or product recommendations, to match individual preferences and behaviours, leading to hyper-personalised communication at scale and increasing user engagement and conversion rates [17].

Furthermore, AI tools are making design more accessible. User-friendly platforms equipped with AI assistance lower the barriers to entry, allowing non-designers to create competent visual materials for internal communications or small businesses. This democratisation of design enables professional designers to focus on more complex, high-value projects [18]. AI introduces new forms and aesthetics. Generative adversarial networks (GANs) and other algorithms can create entirely novel visual styles, textures, and patterns that are challenging to conceive manually. This innovation pushes the boundaries of visual language and opens up new avenues for both artistic and commercial expression [19]. The integration of AI represents a significant change, providing opportunities to enhance creativity, improve workflows, personalise communication, make tools accessible to all, and explore new visual possibilities. The role of the designer will shift from hands-on artisan to strategic curator and director of intelligent systems.

The Challenges of Integrating AI into Graphic Communication Design. The integration of Artificial Intelligence (AI) into graphic communication design is revolutionising workflows, yet it presents significant challenges that demand critical examination. While AI tools offer unprecedented speed and generative capabilities, their adoption is fraught with professional, ethical, and practical difficulties that threaten the discipline's core values.

The first challenge is the erosion of creative authorship and originality. AI models are trained on vast datasets of existing work, often without the

original creators' consent, leading to inherently derivative outputs [20]. This complicates the notion of a unique creative vision, raising questions about where machine influence ends and human authorship begins.

The perpetuation of societal biases is a critical ethical concern. AI systems can amplify and codify biases in their training data, leading to stereotypical or exclusionary visual representations [20]. This may require designers to actively audit AI outputs for harmful biases related to race, gender, and culture, adding a layer of ethical responsibility. Furthermore, the over-reliance on AI-generated solutions risks deskilling practitioners, as the intuitive understanding of typography, composition, and colour theory developed through practice may atrophy [21]. The designer's role could shift from creator to curator, potentially undermining the expertise underpinning the profession.

The legal status of AI-generated imagery remains unclear, creating a precarious environment for commercial use. Lawsuits challenging the use of copyrighted material for training AI models highlight the unresolved legal landscape and pose a substantial risk to design firms and clients. Moreso now that designers are gravitating towards AI models and prompt structures, there is a danger that visual culture will become standardised, sacrificing the unique, context-specific solutions that human designers provide [22].

In conclusion, while AI is a powerful new tool, the challenges of authorship, bias, deskilling, intellectual property, and aesthetic homogenisation require a proactive and critical approach from educators, practitioners, and policymakers to ensure its integration strengthens, rather than diminishes, the field.

Theoretical Framework. This study is anchored in the Technology Acceptance Model (TAM) and the concept of technological disruption, also known as Disruptive Theory [23, 24]. TAM provides a lens for understanding the factors influencing graphic communication designers' integration of AI, primarily their perceived usefulness, and the perceived ease of use of AI tools. This model helps predict integration rates and identify potentials and barriers in the graphic design communication workflow. Christensen's theory of disruptive innovation (Disruptive Theory) frames AI not merely as a new tool but as a potential force that can reshape industry standards, business models, and required skill sets.

The synthesis of these theories posits that the integration of AI tools into graphic communication design is a function of individual acceptance (TAM) within a broader, systemic industry transformation (Disruption Theory), in which perceived opportunities and challenges are intrinsically linked. This framework allows for a holistic analysis of the socio-technical dynamics at play as the profession evolves.

METHOD

This study employs both quantitative and qualitative research methods to examine the nuanced opportunities and challenges posed by the integration of Artificial Intelligence (AI) into the graphic communication design profession. A phenomenological approach is employed to understand the lived experiences and perceptions of practising graphic designers [25]. The researchers collected data through a structured questionnaire and semi-structured interviews with a purposively selected sample of 60 graphic designers from major cities across Nigeria, representing both the Northern and Southern regions. This method allows for in-depth, rich data collection, enabling participants to elaborate on complex, emergent themes.

The researchers collated and transcribed the responses from the questionnaire and interviews, then subjected them to a systematic thematic analysis in accordance with the guidelines of [26]. This resulted in categorising the findings into three themes: the integration of AI tools into graphic Communication Design; the role of traditional graphic designers in an AI-augmented industry; and the ethical issues with AI-generated designs.

RESULTS AND DISCUSSION

Integration of artificial intelligence tools into graphic communication design. Regarding the integration of artificial intelligence tools into graphic communication design, the majority (73%) agreed that AI integration has a positive impact on the profession. In comparison, 21% disagreed, as seen in the chart above.

Author [5] sees AI as a robust mechanism for improving productivity, automating repetitive processes such as image editing, and generating preliminary creative concepts, enabling designers to focus more on strategic and culturally relevant aspects of their work.

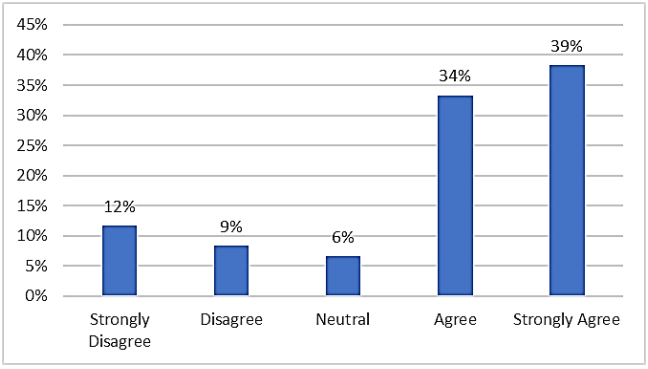

Figure 1 – Integrating AI tools into Graphic Communication Design

The majority of the interviewees attest that AI has come to stay; graphic communication design has been evolving and will continue to evolve, and designers should take advantage of its potential. The fact that AI tools reduce time spent on mundane, repetitive routines does not diminish the core value of originality in creativity. AI should only be a guide to build a stronger mind in communication.

The role of traditional graphic designers in the AI industry. On the role of conventional graphic designers in the AI industry, the majority (61%) agreed that the role of traditional graphic designers will be reduced as a result of the integration of AI into graphic communication design, while 30% disagreed.

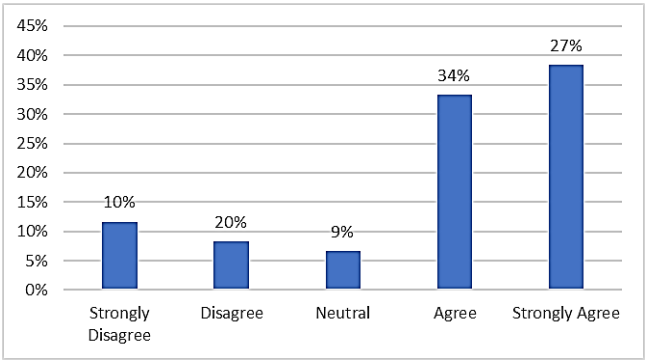

Figure 2 – The role of traditional graphic communication designers

While AI may be seen as a replacement for traditional graphic design and human skills in the profession, it may not be out of place to employ the tools as powerful collaborative partners that can enhance creativity and efficiency when harnessed thoughtfully [2]. Thus, traditional graphic designers need to upskill their craft to stay current with technological development. Furthermore, the human touch should always be there to fine-tune design processes alongside AI. Therefore, the roles of the human designer will remain inevitable.

Ethical considerations associated with integrating artificial intelligence. Regarding the ethical considerations and professional challenges associated with integrating artificial intelligence into graphic communication design practice, the majority (63%) of respondents agreed that it raises ethical issues. As seen above, 22% disagreed, and 15% were neutral.

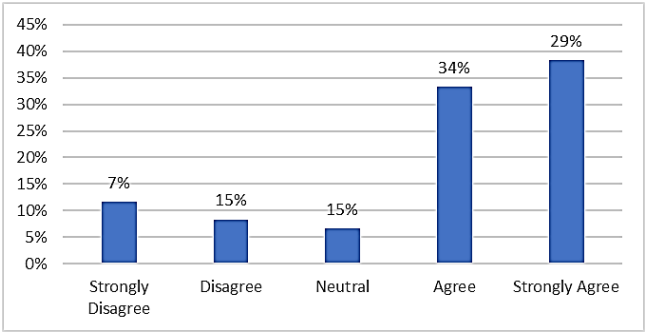

Figure 3 – Ethical considerations associated with integrating artificial intelligence

Author [20] also highlights ethical concerns regarding creative authorship and originality, as AI models are trained on extensive datasets of existing works, often without the consent of the original creators, resulting in inherently derivative outputs. He further buttresses the idea that AI systems can amplify and codify biases in their training data, leading to stereotypical or exclusionary visual representations that perpetuate harmful biases related to race, gender, and culture, adding a layer of ethical responsibility. The legal status of AI-generated imagery remains unclear, creating a precarious environment for commercial use. Lawsuits challenging the use of copyrighted material for training AI models highlight the unresolved legal landscape and pose a substantial risk to design firms and clients. It is therefore imperative for graphic designers to use AI tools to enhance their capacity to conceptualise and create graphic communication content.

CONCLUSIONS

The development of Graphic Communication Design shows a path from manual reproduction to strategic, systemic, and experiential creation.

Each phase has not replaced the previous one but has built upon it, incorporating earlier principles into new settings. Understanding this progression is essential for understanding the discipline's current state and predicting its future directions in an increasingly advanced, intelligent digital environment.

While AI is a powerful tool for enhancing human creativity and streamlining production, traditional graphic designers need to improve their skills to remain relevant. As the industry's future relies on a collaborative approach in which human designers use AI for implementation, policymakers and industry stakeholders must address ethical concerns about creative authorship, originality, and copyright.

Teaching students how to use specific AI tools is inadequate, as the technology advances quickly. Instead, the emphasis should be on developing a fundamental literacy that enables students to critically assess, ethically use, and creatively collaborate with AI throughout their careers.

Academic institutions training graphic communication designers should systematically include a new pedagogical level dedicated to AI-Aided design; this goes beyond a single software course and aims to integrate AI literacy and application throughout the entire design curriculum.

The current "black box" nature of many AI models makes it difficult to trace the origins of generated content, directly impacting claims of originality and copyright infringement; this is a complex, technical issue that calls for collaboration among all stakeholders.

REFERENCES

1. Adeleye, I. O. (2024). The Impact of Artificial Intelligence on Design: Enhancing Creativity and Efficiency. *Journal of Engineering and Applied Sciences (JEAS), 3*(1), 1–14. doi: 10.70560/vvsfej12
2. Zailuddin, M. F. N. O., Harun, N. A. N., Rahim, H. A. A., Kamaruzaman, A. F., Berahim, M. H., Harun, M. H., & Ibrahim, Y. (2024). Redefining creative education: a case study analysis of AI in design courses. *Journal of Research in Innovative Teaching & Learning, 17*(2), 282–296. doi: 10.1108/jrit-01-2024-0019
3. Gee, J., & Esteban-Guitart, M. (2018). Designing for deep learning in the context of digital and social media. *Comunicar, 27*(58), 9–18. doi: 10.3916/c58-2019-01
4. Cai, N. L., & Jung, N. E. (2024). The Impact of Artificial intelligence on the graphic design job market: An analysis of the evolution and opportunities of the designer role. *Journal of Psychology Research, 14*(8). doi: 10.17265/2159-5542/2024.08.002
5. Ariyo, O. (2022). Bridging the AI Divide: Building Africa's Future in the Age of Intelligent Machines. Retrieved from https://medium.com/@roariyo/bridging-the-ai-divide-building-africas-future-in-the-age-of-intelligent-machines-b8d5d50696e8
6. Haruna, N. A. (2019). Impact of Billboard Advertising Appeals on Peace Promotion for Sustainable Community Development: A Case of Boko Haram. *Maidjad, 4.*
7. Meggs, P. B., & Purvis, A. W. (2016). *Meggs' history of graphic design* (6th ed.). John Wiley & Sons.
8. Eskilson, S. J. (2012). *Graphic Design: A New History* (2nd ed.). Yale University Press.
9. Clottes, J. (2010). *Cave Art.* Phaidon Press.
10. Lewis-Williams, D. (2002). *The Mind in the Cave: Consciousness and the Origins of Art.* Thames & Hudson.
11. Hollis, R. (2001). *Graphic Design: A Concise History* (2nd ed.). Thames & Hudson.
12. Rosyida, H. F., Syafei, A., & Nuha, M. U. (2025). The Evolving Field of Graphic Design: Challenges and Opportunities in the Integration of Artificial Intelligence. *International Journal of Graphic Design, 3*(1), 19-38.
13. Bahaa, M. (2023). The Impact of Artificial Intelligence on the Graphic Design Industry. *Arts and Design Studies, 104.*

14. Hanna, D. (2023). The use of the artificial intelligence art generator "MidJourney" in artistic and advertising creativity. *Journal of Design Sciences and Applied Arts, 4*(2), 42–58. doi: 10.21608/jdsaa.2023.169144.1231

15. Wernersson, J., & Persson, R. (2023). *Exploring the Potential Impact of AI on the Role of Graphic Content Creators: Benefits, Challenges, and Collaborative Opportunities.* (Thesis, Jönköping University, School of Engineering).

16. Maeda, J. (2023). Design and Artificial Intelligence: The 2023 Design in Tech Report. Retrieved from https://johnmaeda.medium.com/design-and-artificial-intelligence-the-2023-design-in-tech-report-15345907034d

17. Li, H., Xue, T., Zhang, A., Luo, X., Kong, L., & Huang, G. (2024). The application and impact of artificial intelligence technology in graphic design: A critical interpretive synthesis. *Heliyon, 10*(21), 40037. doi: 10.1016/j.heliyon.2024.e40037

18. Durusoy, O. (2025). The impact of artificial intelligence on graphic design. *Technium Romanian Journal of Applied Sciences and Technology, 30*, 49–57. doi: 10.47577/technium.v30i.12868

19. Thampanichwat, C., Wongvorachan, T., Sirisakdi, L., Chunhajinda, P., Bunyarittikit, S., & Wongmahasiri, R. (2025). Mindful Architecture from Text-to-Image AI Perspectives: A Case Study of DALL-E, Midjourney, and Stable Diffusion. *Buildings, 15*(6), 972. doi: 10.3390/buildings15060972

20. Barnat, N. D. S. E., Aburaya, N. N. M., Alhajri, N. S. M., & Banu, N. S. (2024). Artificial intelligence and Intellectual Property: impact and legal implications. *Evolutionary Studies in Imaginative Culture*, 341–358. doi: 10.70082/esiculture.vi.1111

21. Vossler, C. (2024). *The AI Muse: How Machines Are Redefining Creativity.* eBookIt.com.

22. Chirita, M., & Sarpe, D. (2024). Navigating the challenges and ethics of AI in shaping the future of work for sustainable Industry 4.0. *Annals of Dunarea De Jos University of Galati Fascicle I Economics and Applied Informatics, 30*(3), 275–285. doi: 10.35219/eai15840409453

23. Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly, 13*(3), 319–340

24. Christensen, C. (2013). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail.* Harvard Business Review Press.

25. Creswell, J. W., & Poth, C. N. (2017). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches.* Sage Publications.

26. Braun, V., & Clarke, V. (2006c). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. doi: 10.1191/1478088706qp063oa