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Balancing creativity and technology: The role of Artificial Intelligence (AI) in photography classrooms

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ABSTRACT

This literature review explored the integration of artificial intelligence (AI) in photography education, with a focus on its impact on creativity, pedagogy, and curriculum development. The primary aim was to examine how AI-powered tools—such as automated editing software, image analysis, and virtual labs—are reshaping photography instruction, and to evaluate their implications for student learning, creative development, and ethical practice. A systematic review of peer-reviewed literature, policy documents, and recent studies (2012–2024) was conducted to assess emerging trends, benefits, and challenges associated with AI in the photography classroom. Findings reveal that AI enhances accessibility and technical efficiency, enabling students to engage with complex photographic processes and focus more on artistic expression. However, concerns arise around over-reliance on automation, potential homogenisation of creative output, and ethical dilemmas related to authorship and image authenticity. The review highlights a growing need for photography educators to transition from technical instructors to facilitators of critical thinking and conceptual exploration. Effective curriculum design must balance traditional photographic principles with AI-driven innovations, promoting reflective practice, ethical engagement, and creative autonomy. Assignments comparing manual and AI-assisted outputs, as well as discussions on the role of AI in visual storytelling, are proposed as strategies to develop critical awareness and originality. Ultimately, the study concludes that AI should be integrated as a complementary tool that supports—rather than supplants—human creativity. A balanced, ethically grounded approach prepares students to thrive as innovative and responsible practitioners in an evolving, AI-augmented creative landscape.

Keywords: photography education, artificial intelligence, creativity, digital pedagogy, Ethics

INTRODUCTION

The accelerating integration of artificial intelligence (AI) into educational contexts has transformed pedagogical practices across multiple disciplines, including the visual arts. In higher education broadly, AI is being leveraged to personalise learning, enhance feedback mechanisms, and automate instructional processes—trends that have been met with both enthusiasm and scrutiny by educators and policymakers alike.[1] Photography education has witnessed significant shifts due to the proliferation of AI-powered tools that automate technical processes, provide instant feedback, and expand creative

[1] Peter Cotroneo and James Hutson, "Generative AI Tools in Art Education: Exploring Prompt Engineering and Iterative Processes for Enhanced Creativity," *Metaverzse* 4, no. 1 (June 5, 2023): 14, https://doi.org/10.54517/m.v4i1.2164.

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possibilities. These technologies—ranging from automated editing platforms to virtual labs and intelligent image analysis software—offer new pathways for learning, particularly by lowering technical barriers and enabling students to engage more readily with the artistic dimensions of photography.

Despite the promising benefits of AI integration, this broader technological shift raises critical questions about the future of creativity in the photography classroom. While automation can increase efficiency and access, there is growing concern that it may lead to homogenised creative outputs and discourage the development of unique artistic voices.[2] As AI systems provide standardised suggestions for colour grading, composition, and retouching, students may become reliant on machine-led decisions, potentially undermining the reflective and problem-solving skills central to photographic practice.[3] Additionally, ethical concerns surrounding authorship, authenticity, and the manipulation of images are becoming increasingly salient, particularly in academic contexts where creative originality is a core evaluative criterion.[4]

This literature review investigates the role of AI in photography education, examining how its adoption influences teaching methodologies, student creativity, and curriculum development. By synthesising peer-reviewed literature, policy statements, and recent empirical studies published between 2012 and 2024, the study aims to identify both the pedagogical opportunities and ethical challenges presented by AI technologies. It argues that while AI can enhance accessibility and streamline technical workflows, its integration must be carefully moderated to preserve creativity, critical engagement, and artistic integrity.

METHODOLOGY

This study employed a systematic literature review (SLR) approach to investigate the integration of AI in photography education. The SLR method offers a rigorous, transparent, and replicable process for identifying, evaluating, and synthesising relevant research, making it particularly suitable for emerging interdisciplinary topics such as AI in creative education. The aim of the review was not only to document existing knowledge but also to identify pedagogical patterns, conceptual challenges, and ethical implications that can inform curriculum development and instructional strategies within photography programmes.

Unlike narrative reviews, which are often subjective and selective, the SLR enables structured identification of trends, gaps, and contradictions across a broad literature base. This is particularly valuable in the context of photography education, where rapid technological innovation continues to shape both instructional methods and creative expectations. The review followed a phased approach that included search, screening, selection, analysis, and synthesis.

Scope and Selection Criteria

The review focused on literature published between 2012 and 2024, a period that reflects the growing sophistication and accessibility of AI tools in educational settings. This timeframe was chosen to ensure relevance to current pedagogical and technological realities, capturing both early discussions of automation in digital arts and the most recent advances in generative AI, virtual labs, and intelligent editing platforms.

Inclusion criteria were established to ensure both breadth and depth of analysis:

- Publications had to address the use of AI technologies in educational contexts, with a specific focus on photography, digital imaging, or visual arts pedagogy.
- Only peer-reviewed journal articles, conference proceedings, policy briefs, and institutional reports were included to ensure scholarly reliability.

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[2] Dana Pestano, "AI in Photography-The Good, The Bad and The Ugly" (Professional Photo. https://professionalphoto. online/ai-artificial …, 2024), https://professionalphoto.online/ai-artificial-intelligence/ai-in-photography-the-good-the-bad-and-the-ugly/.

[3] Israel Olamilekan Adeleye, "The Impact of Artificial Intelligence on Design: Enhancing Creativity and Efficiency," *Journal of Engineering and Applied Sciences* 3, no. 1 (October 9, 2024): 1–14, https://doi.org/10.70560/vvsfej12.

[4] Yifei Wang, "Artificial Creativity- Ethical Reflections on AI's Role in Artistic Endeavors," *TechRxiv*, August 14, 2023, https://doi.org/10.36227/techrxiv.23897169.v1.

- Studies were required to engage with at least one of the following themes:
  1. The pedagogical integration of AI tools in photography instruction;
  2. The impact of AI on creativity, learning outcomes, and assessment; or
  3. Ethical concerns, including authorship, image authenticity, and academic integrity in AI-mediated art.

Exclusion criteria removed articles that discussed AI from purely technical or engineering perspectives without reference to teaching and learning. Also excluded were blog posts, editorials, and non-academic sources—unless cited in peer-reviewed literature or widely referenced in visual arts education discourse.

Search Strategy

Searches were conducted across multiple academic databases and digital repositories accessible through the Central University of Technology (CUT), Free State, to ensure comprehensiveness and academic reliability. These included:

- **Google Scholar** is a widely used open-access index for scholarly literature across disciplines.
- **Taylor & Francis Online**, a platform to which CUT subscribes, provides access to peer-reviewed journals in education, technology, and the arts.
- **ERIC (Education Resources Information Centre)**, accessed via EBSCOhost or similar aggregated databases available through institutional portals.
- **ProQuest Education and Research Databases**, which offer policy papers, dissertations, and peer-reviewed content relevant to educational technology and curriculum development.
- **CUT Library's Discovery Service**, which aggregates access to subscribed content across multiple publishers, including **Springer**, **Elsevier**, and **Wiley**, allowing for targeted searches in visual arts, pedagogy, and emerging technologies.

A Boolean keyword strategy was used to refine results. The following search terms and their combinations were applied:

- "AI AND photography education"
- "artificial intelligence AND creativity in art"
- "AI ethics in visual storytelling"
- "automated tools AND pedagogy in photography"
- "generative AI AND art education"
- "intelligent editing AND student learning"

The initial search returned approximately 120 sources. After removing duplicates and applying the inclusion and exclusion criteria through title and abstract screening, a refined list of 25 primary sources was selected for full-text review and thematic analysis.

Analytical Approach

Each selected publication was subjected to qualitative thematic analysis, following a coding process guided by three overarching categories:

- Enhancement of creative practice through AI
- Pedagogical transformation and the evolving role of educators
- Ethical and epistemological concerns raised by AI-generated outputs

This approach allowed for the identification of recurring patterns and tensions in the literature, particularly around the balance between automation and creativity. Key insights were extracted and organised according to their alignment with the core objectives of this review: to evaluate how AI

influences photography instruction and to recommend strategies for ethically and pedagogically sound integration.

A PRISMA-aligned screening approach was applied to ensure transparency and replicability of the review process. The phased strategy included identification (n=120), duplicate removal and relevance screening (n=94), full-text eligibility review (n=42), and final inclusion of 25 publications across three thematic domains. For clarity and ease of cross-comparison, the visual screening flow and full literature dataset are presented in Figure 1 and Table 1 below.

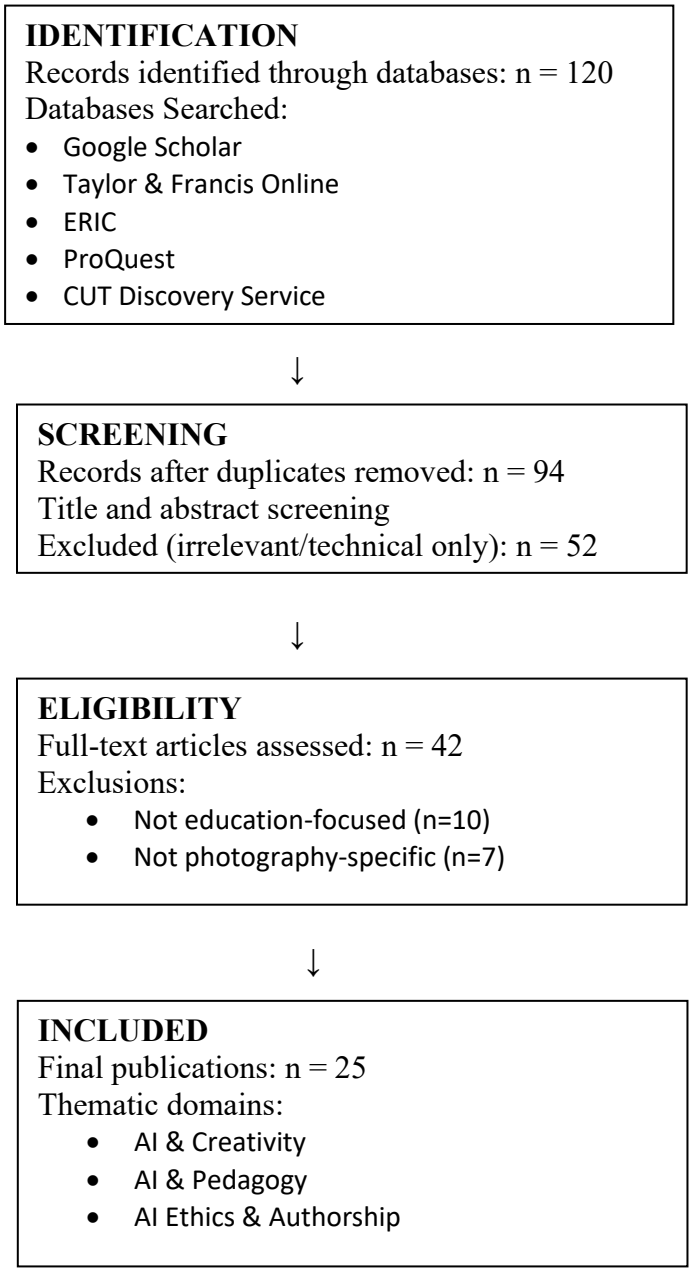

Figure 1: PRISMA Screening Diagram

Table 1: Summary Table of Reviewed Sources (Full 25 Publications)

Author(s) & Year	Title/Focus	Relevance	Theme
Macdonald (2012)	Digital vs film learning	Media shift + pedagogy	Creativity/Pedagogy
Mayer-Schönberger & Cukier (2013)	Big Data logic	Algorithmic foundations	Digital Agency
Manovich (2018)	AI aesthetics	Machine-driven visuality	Creativity/Theory
McCormack et al.(2019)	Generative authorship	Intention + originality	Ethics/Agency
Knox (2020)	Automation in learning	Agency challenge	Ethics/Pedagogy
Sundar & Kang (2020)	AI as creative partner	Co-creation + originality	Creativity
Soe (2021)	AI editing limits	Workflow/technical	Technical Pedagogy
Prins (2023)	Digital vs traditional teaching	Instructional contrasts	Pedagogy
Chan & Tsi (2023)	AI in Higher Education	Future learning design	Pedagogy/Technology
Finn (2023)	AI image ethics	Copyright & manipulation	Ethics
Ng (2023)	Creativity & automation	Authorship reconstruction	Ethics
Cotroneo & Hutson (2023)	Generative tool teaching	Prompt pedagogy	Creativity
Wang (2023)	Artificial creativity	Human vs AI originality	Ethics
Yan (2023)	AI in new media imaging	Visual transformation	Digital Media
Zailuddin et al. (2023)	AI in design curriculum	Pedagogical adaptation	Curriculum
Agarwal	Creativity at risk?	Human creativity debate	Ethics
Al-kfairy et al. (2024)	GenAI integrity	Governance issues	Ethics/Policy
Black & Chaput (2024)	AI in art teaching	Pedagogical ethics	Pedagogy
Pestano (2024)	Industry AI photography	Market + practice shift	Professionalisation
Sai (2024)	AI-assisted mobile imaging	Workflow acceleration	Technical
Abbas et al. (2023)	Cloud collaboration	Student exchange + AI	Pedagogy
Cotroneo (extended) (2023)	Remote creativity	Distributed production	Access
Professional Photo (2024)	Industry adaptation	Automation in work	Professional
Dev.to (Sai) (2024)	Smartphone AI	Efficiency + fluency	Technical
Heliyon (Yan) (2024)	Visual AI media	New representational logic	Representation

Limitations

While the study offers a broad overview of current literature, it is limited by the rapidly evolving nature of AI technologies. Some developments in generative AI and image synthesis—particularly those emerging after 2023—may not yet be fully captured in peer-reviewed publications. In addition, due to the focus on formal educational settings, the review does not encompass informal or self-directed learning environments such as online tutorials or social media platforms, which may also influence student engagement with AI in photography. Lastly, while the review aimed for global relevance, most included studies were situated in Western or Global North contexts, with limited representation from African or Global South settings—a gap that future research should address.

PRESENTATION OF FINDINGS AND DISCUSSION

The integration of AI in photography education has generated a growing body of scholarship that highlights both its transformative potential and the challenges it presents. Macdonald's early study of students' attitudes to digital and film photography presciently marked the growing importance of digital

tools in reshaping photography education.[5] With AI-powered technologies now capable of guiding composition, automating editing, and offering virtual simulation labs, the role of AI has expanded significantly.[6]

Cotroneo and Hutson suggest that such tools democratise access and remove technical barriers, enabling students to focus on creativity rather than complex manual skills.[7] Abbas et al. further argue that AI platforms—especially cloud-based and mobile-integrated ones—help students collaborate across geographies, providing an inclusive digital learning environment.[8] Recent theoretical models have begun to frame AI not merely as a technical tool, but as a co-creative agent in the classroom. Sundar and Kang argue that when students receive AI assistance that scaffolds their creative process, the outcome can be more original—provided the tool is used reflectively rather than as a shortcut.[9] Similarly, Knox explores how AI's presence challenges traditional understandings of human agency and authorship, prompting educators to reframe learning outcomes to better accommodate co-authored processes and algorithmic intervention.[10] These models support a shift in pedagogy from merely acquiring tool-based competencies to fostering dialogue and critical inquiry around creativity and decision-making in AI-mediated environments. However, concerns persist regarding the potential for students to develop a dependency on automation, bypassing traditional methods that develop technical fluency and artistic intuition.[11]

AI-generated presets and guided enhancements often reflect algorithmic logic rather than human subjectivity, thereby encouraging stylistic conformity.[12] This homogenisation effect is noted across multiple studies and presents a threat to the cultivation of unique artistic voices.[13]
Equally important is the ethical terrain: scholars warn of blurred authorship and the dangers of presenting AI-generated content as wholly original.[14] Educators are thus encouraged to guide students in understanding the boundaries of co-authorship, manipulation, and fair representation.[15] In response, Black and Chaput call for a critical pedagogy that challenges students to evaluate AI's influence on their visual storytelling.[16]

A notable limitation in existing literature is its predominant focus on institutions in North America, Europe, and parts of Asia. Very few studies address AI integration in photography education within the African context. Prins' analysis of digital versus traditional photography education reveals that curriculum decisions are often shaped by resource availability, technological access, and infrastructure constraints.[17] Her work highlights the need for adaptable and context-responsive

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[5] Iain Macdonald, "Why Throw the Negs Out with the Bathwater? A Study of Students' Attitudes to Digital and Film Photographic Media," *International Journal of Art & Design Education* 31, no. 2 (June 27, 2012): 191–211, https://doi.org/10.1111/j.1476-8070.2012.01735.x.

[6] Than Htut Soe, "AI Video Editing Tools. What Editors Want and How Far Is AI from Delivering?," *ArXiv Preprint ArXiv:2109.07809*, 2021.

[7] Cotroneo and Hutson, "Generative AI Tools in Art Education: Exploring Prompt Engineering and Iterative Processes for Enhanced Creativity."

[8] Naveed Abbas et al., "Role of Artificial Intelligence Tools in Enhancing Students' Educational Performance at Higher Levels," *Journal of Artificial Intelligence, Machine Learning and Neural Network*, no. 35 (August 16, 2023): 36–49, https://doi.org/10.55529/jaimlnn.35.36.49.

[9] S. Shyam Sundar and Jin Kang, "Leveraging AI to Enhance Human Creativity: The Effects of AI Assistance on Original and Revised Creative Products," *Computers in Human Behavior* 107 (2020): 106272.

[10] Jeremy Knox, "Artificial Intelligence and Education in the Age of 'Automation," *Learning, Media and Technology* 45, no. 3 (2020): 271–83.

[11] Shiyun Ou, "Transforming Education: The Evolving Role of Artificial Intelligence in The Students Academic Performance," *International Journal of Education and Humanities* 13, no. 2 (April 3, 2024): 163–73, https://doi.org/10.54097/cc1x7r95.

[12] Yan Zhao, "The Synergistic Effect of Artificial Intelligence Technology in the Evolution of Visual Communication of New Media Art," *Heliyon* 10, no. 18 (September 2024): e38008, https://doi.org/10.1016/j.heliyon.2024.e38008.

[13] N. Harmsen, "Are We Growing Into Lazy Photographers Due to AI?," Fstoppers, 2024.

[14] B. Finn, "Artificial Intelligence and Images: AI Image Ethical & Legal Issues," College of Saint Benedict & Saint John's University, 2023, https://guides.csbsju.edu/c.php?g=1297123&p=10165087.

[15] Asmi Agarwal Asmi Agarwal, "Is AI the End of Human Creativity," *Journal of Advances in Science and Technology* 20, no. 2 (September 2, 2024): 21–27, https://doi.org/10.29070/9qgeet16.

[16] Joanna Black and Tom Chaput, "A Discussion of Artificial Intelligence in Visual Art Education," *Journal of Computer and Communications* 12, no. 05 (2024): 71–85, https://doi.org/10.4236/jcc.2024.125005.

[17] Carolyn Prins, "The Teaching of Digital vs. Traditional Photography," 1999, https://scholarworks.uni.edu/cgi/viewcontent.cgi?article=2357&context=grp.

instructional models that recognise how differing levels of digital capacity influence learning outcomes. Such findings indicate that equitable adoption of AI-supported practices in photography education will require sensitivity to diverse institutional realities, particularly in settings where access to technology is uneven or developing.

Beyond structural constraints influencing photographic education, it is important to recognise that photography in many African contexts has historically functioned not only as an artistic practice but also as an instrument of social memory, political witnessing and public record. In South Africa specifically, image-making has been central to documenting lived realities, resisting erasure and recording socio-political movements, often serving as a visual archive of contested history. This contextual grounding highlights that the implications of AI-generated imagery extend beyond questions of workflow and efficiency, intersecting instead with issues of historical accuracy, representation and the preservation of visual truth. Integrating such perspectives strengthens the cultural depth of the discussion and foregrounds the ethical stakes of AI in image-making, particularly when photographic history holds significance as evidence, memory and identity.

This systematic review revealed several key themes regarding the role of AI in photography education. While AI technologies are celebrated for improving technical fluency and accessibility, concerns remain about their long-term implications for creative development, critical engagement, and ethical integrity.

Enhancing Access and Workflow Efficiency

AI-powered tools such as automated editing software, real-time composition analysis, and virtual labs are enabling students to overcome technical barriers that traditionally required expensive equipment and extensive training.[18] These tools facilitate faster execution of tasks such as background removal, colour correction, and lighting adjustments, freeing students to focus on conceptual elements.[19] Especially in resource-limited contexts, AI has increased the inclusivity of photography education, allowing broader participation in image-making through mobile platforms and cloud-based collaboration.[20] In addition to streamlining routine tasks, some AI platforms integrate adaptive learning algorithms that adjust feedback based on student performance. This functionality, while promising, requires educators to remain vigilant about over-reliance on algorithmic suggestions.

Moreover, beginner students benefit from the accessibility of AI-powered feedback and guided enhancements, which accelerate their learning curve.[21] This pedagogical shift not only fosters engagement but also promotes self-directed learning. However, these benefits must be critically balanced with deeper creative competencies.

Creative Homogenisation and Loss of Artistic Voice

A major concern emerging from the literature is the potential for creative homogenisation. AI systems often suggest 'optimal' edits based on standardised datasets or algorithmic principles of composition and lighting.[22] While these tools can enhance technical polish, they may also discourage experimentation and risk-taking—qualities essential to the development of an authentic photographic voice.[23] When students rely too heavily on AI-generated outputs, there is a risk of converging toward a narrow aesthetic that prioritises technical perfection over personal expression.[24] Research also suggests that students exposed to AI tools without guided critique often mimic the dominant visual aesthetics encoded in training datasets, leading to visual uniformity across assignments.

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[18] Black and Chaput, "A Discussion of Artificial Intelligence in Visual Art Education."
[19] Asmi Agarwal, "Is AI the End of Human Creativity."
[20] Wang, "Artificial Creativity- Ethical Reflections on AI's Role in Artistic Endeavors."
[21] Mousa Al-Kfairy et al., "Ethical Challenges and Solutions of Generative AI: An Interdisciplinary Perspective," in *Informatics*, vol. 11 (MDPI, 2024), 58.
[22] C. K. Y. Chan and L. H. Y. Tsi, "The AI Revolution in Education: Will AI Replace or Assist Teachers in Higher Education?," *ArXiv*, 2023.
[23] Pestano, "AI in Photography-The Good, The Bad and The Ugly."
[24] Prins, "The Teaching of Digital vs. Traditional Photography."

Furthermore, the repetitive use of presets and algorithm-driven corrections can suppress the subjective, interpretative aspects of photography that are central to artistic development.[25]Such reliance on AI may limit students' engagement with failure, iteration, and discovery—processes central to artistic maturation.

Evolving Pedagogical Roles

With AI automating many of the technical tasks previously taught in foundational courses, the role of photography educators is shifting.[26] Instead of focusing primarily on technical mastery, instructors are increasingly called to act as facilitators of creative exploration, critical dialogue, and ethical reflection.[27]The literature suggests that assignments prompting students to compare AI-assisted outputs with manually produced images help foster critical evaluation and reinforce core principles of authorship and intentionality.[28]

Some educators argue for hybrid teaching models that pair traditional darkroom or manual processes with AI workflows to maintain a sense of historical continuity and conceptual grounding. Educators are also encouraged to integrate discussions about the implications of AI into studio critique sessions, helping students understand the role of technology in shaping their visual narratives. By creating learning environments that encourage metacognitive awareness and reflection, instructors can guide students to use AI as a tool—not a substitute—for their creative agency.[29]

Ethical Implications: Authorship, Authenticity, and Accountability

While ethical considerations are acknowledged, the discussion could interrogate more deeply the implications of AI for creative autonomy, originality, and the evolving notion of authorship. Critical engagement with questions such as: *How does AI reshape creative decision-making? What constitutes originality when creative labour is distributed between human and machine?* would strengthen the ethical dimension of the study. Scholars such as Knox and McCormack et al. illustrate that AI challenges long-established definitions of authorship, intention, and artistic agency — a tension that warrants further expansion in relation to photography education.

The increasing sophistication of generative AI presents ethical dilemmas related to authorship and image authenticity. When AI significantly alters or generates imagery, questions arise about who owns the final product and whether it reflects genuine creative input.[30] This becomes particularly complex when generative models are trained on copyrighted datasets or mimic established photographic styles, raising concerns of unconscious plagiarism or derivative creation. In educational settings, where originality and academic honesty are central to assessment, these questions are particularly pressing.[31]

Students may unintentionally cross ethical boundaries by relying on AI without fully understanding the implications. As such, ethics education is critical. Literature calls for the inclusion of explicit modules that address the responsible use of AI, digital manipulation, and the importance of transparency in the creative process.[32]

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[25] Mohd Firdaus Naif Omran Zailuddin et al., "Redefining Creative Education: A Case Study Analysis of AI in Design Courses," *Journal of Research in Innovative Teaching & Learning* 17, no. 2 (August 22, 2024): 282–96, https://doi.org/10.1108/JRIT-01-2024-0019.

[26] Cotroneo and Hutson, "Generative AI Tools in Art Education: Exploring Prompt Engineering and Iterative Processes for Enhanced Creativity."

[27] Black and Chaput, "A Discussion of Artificial Intelligence in Visual Art Education."

[28] Asmi Agarwal, "Is AI the End of Human Creativity."

[29] Cotroneo and Hutson, "Generative AI Tools in Art Education: Exploring Prompt Engineering and Iterative Processes for Enhanced Creativity."

[30] Finn, "Artificial Intelligence and Images: AI Image Ethical & Legal Issues."

[31] Wang, "Artificial Creativity- Ethical Reflections on AI's Role in Artistic Endeavors."

[32] Al-Kfairy et al., "Ethical Challenges and Solutions of Generative AI: An Interdisciplinary Perspective."

RECOMMENDATIONS

Based on the findings of this review, several actionable strategies are proposed to help photography educators integrate AI into teaching practices while maintaining a strong emphasis on creativity, ethics, and critical thinking.

Encourage Critical Comparison Between AI and Manual Work

Assignments that require students to create both AI-assisted and manually edited versions of the same image can foster reflective learning. By comparing results and discussing their decision-making processes, students become more conscious of how automation influences their aesthetic choices and technical approaches. These activities help preserve core photographic skills while promoting metacognitive awareness of the tools in use.

Integrate Ethics and Authorship into the Curriculum

Given the complex ethical terrain associated with AI-generated imagery, photography programs should include dedicated modules or learning units focused on authorship, manipulation, and digital ethics. This includes exploring questions such as: Who owns AI-enhanced work? How can students disclose AI usage in their creative process? What constitutes original artistic expression when AI plays a significant role? Classroom discussions, guest lectures, and case studies can reinforce students' ethical reasoning and equip them to make informed choices.

Support Educator Development in AI Pedagogy

Educators need institutional support and professional development to engage meaningfully with AI in the classroom. Training workshops, collaborative platforms, and communities of practice can empower instructors to remain pedagogically responsive to emerging technologies. These initiatives should emphasise both the practical use of AI tools and the philosophical questions surrounding their educational application.

Design Hybrid Curricula That Retain Foundational Skills

Curriculum designers should aim to create hybrid syllabi that blend AI-enhanced processes with traditional, hands-on photographic methods. This balance ensures that students retain vital tactile and observational skills—such as controlling exposure manually or working with film—while also exploring the experimental potential of AI. In doing so, students develop a dual literacy that allows them to critically engage with both analogue and digital visual cultures.

Promote Conceptual Exploration Over Technical Perfection

While AI can deliver technically polished results, it is the conceptual depth and personal vision behind an image that defines meaningful artistic work. Educators should, therefore, prioritise assignments that encourage storytelling, interpretive risk-taking, and creative problem-solving, even if this leads to imperfect technical execution. AI tools should be framed as options—not as solutions—that students can choose to include or reject based on their intent and message.

CONCLUSION

The integration of AI into photogaphy education represents both a technological leap and a pedagogical crossroads. AI-driven tools have transformed the landscape of photographic instruction by streamlining complex technical tasks, widening access to digital resources, and opening new avenues for creative experimentation. These developments hold immense potential for enriching student engagement, especially by freeing learners to focus on narrative construction, conceptual exploration, and artistic intent.

However, as this review has demonstrated, these gains are accompanied by critical challenges. The automation of key photographic processes raises concerns about creative homogenisation, diminished problem-solving skills, and ethical ambiguities surrounding authorship and image manipulation. Without thoughtful instructional design, students risk becoming passive consumers of

algorithmically generated suggestions rather than active creators capable of interpreting, critiquing, and innovating within their medium.Educators are thus called to assume new roles—not only as technical instructors, but as facilitators of critical thinking, ethical engagement, and reflective practice. This demands the development of hybrid curricula that integrate AI without displacing foundational principles. Assignments that compare manual and AI-assisted processes, modules on authorship ethics, and a focus on conceptual rather than purely technical outcomes all contribute to this rebalanced model.

In educational settings, where originality and academic honesty are central to assessment, these questions are particularly pressing. Students may unintentionally cross ethical boundaries by relying on AI without fully understanding the implications. As such, ethics education becomes a cornerstone of contemporary photography instruction. Literature calls for the inclusion of explicit modules that address the responsible use of AI, digital manipulation, and the importance of transparency in the creative process. Cultivating ethical literacy alongside technical skills is essential for preparing students to navigate the moral complexities of an AI-mediated creative industry.

Ultimately, photography education in the age of AI must move beyond questions of technological adoption toward questions of pedagogical intent. By treating AI as a complementary tool—rather than a substitute for human vision and creativity—educators can equip students with the discernment, flexibility, and integrity needed to thrive in a digitally augmented artistic landscape.

Future research should now explore how students' lived experiences with AI affect their sense of artistic identity, authorship, and creative confidence—particularly across diverse educational and cultural contexts.

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