The Future of Fine Arts Education in the AI Era: Student Creativity in Developing Visual Learning Media

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ABSTRACT

Keywords:
Artificial Intelligence
Fine Arts Education
Visual Learning Media

This article examines the transformation of the role of Fine Arts Education students in developing visual learning media based on Artificial Intelligence (AI). Using a descriptive qualitative approach, the study seeks to capture the meaning, processes, and dynamics of change in art education practices that emphasize creativity and visual expression. The findings show that AI is utilized as a collaborative partner in the creative process, ranging from the creation of illustrations and animations to pedagogically relevant interactive designs. AI not only accelerates media production but also enables the personalization of learning content according to the needs and characteristics of students. In this context, students act as visual curators who combine artistic intuition, digital ethics, and technological skills. However, the integration of AI requires critical digital literacy, ethical awareness, and an understanding of issues such as copyright, algorithmic bias, and social responsibility. In line with these findings, the study highlights four key objectives: (1) enhancing creativity through human–AI collaboration, (2) increasing the efficiency of visual learning media production, (3) creating personalized learning media through the adoption of AI tools, and (5) strengthening critical digital literacy as well as ethical awareness in the use of AI. Therefore, a comprehensive and adaptive fine arts curriculum is essential to equip students with balanced technical and reflective skills in addressing the challenges of the digital era.

INTRODUCTION

The presence of Artificial Intelligence (AI) technology has triggered a fundamental shift in the world of education, including in fine arts which previously relied heavily on manual skills and intuition. AI is now developing into a collaborator in the creative process. In addition to increasing productivity and creativity, the use of AI can also provide a more satisfying balance in personal life. By automating repetitive tasks and simplifying workflows, AI helps reduce work-related stress and prevent burnout, so that students and educators can focus more on the reflective and expressive aspects of creating artwork (Anggrianto et al., 2024).This transformation is inevitable in the middle a digital climate that demands efficiency, adaptability, and personalization in the learning process.

The massive digitalization flow, the urgency to integrate Artificial Intelligence (AI) in art education is becoming stronger. The role of information and communication technology (ICT), including computers, visual devices, and multimedia systems, is now increasingly focused on the learner's experience. Technology is no longer just a tool, but also an interactive media that encourages exploration, problem solving, and the development of visual ideas actively and contextually. Media such as projectors, cameras, videos, microphones, to computer-based learning systems are an important part of increasing engagement and the quality of learning (Asari et al., 2023). Therefore, mastery of technology is not only technical, but also pedagogical and creative, so that students are able to become creators of learning media that are adaptive to the challenges of the times. The development of Artificial Intelligence (AI) in art education has transformed the traditional approach to creative learning, from one based on manual practice to an

adaptive and experiential integration of technology. Recent research shows that generative artificial intelligence technology can be used strategically by educators to design tasks that actively engage students in the process of art creation. This approach open opportunities to critically analyze the visual outputs produced by AI-based systems and reflect on their meaning through experiential learning (Pavlik & Pavlik, 2024).

However, the use of AI in creative arts practices is not free from fundamental challenges, especially related to issues of originality and aesthetic sensitivity. Das and Kundu (2024) emphasize that art produced by artificial intelligence requires a reconsideration of the traditional concept of authorship, because the existing legal framework is not sufficient to accommodate such complexity (Das & Kundu, 2024). Therefore, an ethical and proactive approach is needed to ensure inclusivity and diversity of representation in the creation process. Educational institutions have an important role to play in equipping students with technological literacy and a deep understanding of digital ethics, so that the use of artificial intelligence can remain within the artistically and pedagogically responsible corridor. Kamali et al. (2024) emphasize that the integration of AI in education is a complex and multidimensional ethical issue (Kamali et al., 2024).

The transformation of the role of students is increasingly evident. They are no longer just media users, but have become active creators of AI-based visual learning media. Media is now an interactive learning tool, with an aesthetic and multimodal approach. Students are required to master visual elements, generative design, and AI logic in conveying learning messages. The integration of artificial intelligence in education opens up great opportunities for students to expand their visual exploration capacity and create adaptive learning media. Jha and Singh (2025) highlight that the presence of AI in media education has significant transformative potential, especially when traditional teaching methods are no longer able to keep up with the development of the highly dynamic digital media landscape (Jha & Singh, 2024). AI can enrich the learning experience by enabling personalization, fostering creativity, and improving students' media literacy and critical thinking.

In line with this, Sudrajat et al. (2023) emphasized that the use of AI in the form of multimedia-based applications such as ChatGPT has greatly helped educators in designing teaching materials efficiently. AI not only makes it easier to compile content, but also increases the credibility of educators in compiling relevant, structured, and appropriate learning media according to the needs of the learning theme. In line with the dynamics of technological developments, various studies have highlighted that the changes brought about by the integration of AI in art education require a new, reflective, and contextual pedagogical approach. According to Ke (2023), although artificial intelligence offers great potential for art education, challenges such as technological reliability, data privacy, and the readiness of educators and institutions are important concerns (Ke, 2023). Furthermore, future art educators need to be context-aware visual designers, integrating artistic intuition and AI technology.

Meanwhile, Marrone, Taddeo, and Hill (2022) strengthen this view by showing that collaboration between humans and AI is not only about increasing efficiency, but also about reshaping creative ways of thinking (Marrone et al., 2022). Therefore, educators need to equip students with critical thinking skills and technological awareness, so that creativity remains integrated with the depth of aesthetic and social reflection.

Furthermore, AI demands students' metacognitive abilities to reflect on production results, not just use them automatically. Black and Chaput (2024) emphasize that the role of educators in art learning is very important to encourage active involvement of students in critical and reflective learning processes (Black & Chaput, 2024). They suggest that educators develop a dialogical and dialectical approach to the process of creating art, where the use of AI becomes part of discussion, collaboration, and the development of critical thinking.

The urgency of this research lies in the need to examine how artificial intelligence influences the creative process of Fine Arts Education students, not only from the technical and aesthetic dimensions but also from the perspectives of pedagogical values and ethical responsibilities. Previous literature highlights that strengthening AI-based art curricula represents a significant step forward in preparing students for future challenges. In line with this, the study aims to explore the transformation of the role of Fine Arts Education students in developing AI-based visual learning media, with particular attention to several objectives: (1) enhancing creativity through human–AI collaboration, (2) increasing the efficiency of visual learning media production, (3) creating personalized learning media through the adoption of AI tools, and (4) strengthening critical digital literacy as well as ethical awareness in the use of AI.

RESEARCH METHOD

This study uses a descriptive qualitative approach to explore in depth the phenomenon of the transformation of the role of students of the Fine Arts Education Study Program in developing visual learning media based on Artificial Intelligence (AI). This approach was chosen because it is able to capture the meaning, process, and dynamics of change reflectively and contextually in the practice of art education that emphasizes creativity and visual expression.

As explained by Creswell & Creswell (2018), *"Qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures; collecting data in the participants' setting; analyzing the data inductively, building from particulars to general themes; and making interpretations of the meaning of the data"*. Therefore, this study was designed flexibly and openly to the dynamics in the field, with an emphasis on in-depth understanding from the perspective of the participants.

This study involved 30 students enrolled in the Media Learning course from the class of 2023, selected purposively for their active involvement in exploring Artificial Intelligence (AI) based digital media. Data collection was conducted over two months, through direct observation, online portfolio documentation, and semi-structured interviews, supplemented by a review of relevant academic literature. Data analysis was conducted using a content analysis approach to identify role patterns, creative challenges, and ethical issues in integrating AI into the development of visual learning media. Data validity was maintained through triangulation of sources and methods, with the aim of generating an in-depth understanding of the transformation of students' roles as innovative, reflective, and ethical developers of visual learning media.

RESULTS AND DISCUSSION

1.1 Creativity Augmentation Through Human and AI Collaboration

The results of this study reveal that students of Fine Arts Education class of 2023 in the Multimedia Learning course have begun to utilize Artificial Intelligence (AI) technology as a tool that not only replaces the manual design process, but also becomes a collaborative partner that enriches and expands their creative horizons in developing visual learning media. Students act as visual curators who direct AI by providing structured and targeted prompts to produce illustrations, animations, and graphic designs that are relevant to the context and learning objectives. Thus, AI functions as a creative assistant that allows students to explore new ideas and concepts more broadly and variedly, while accelerating the process of producing works. This phenomenon marks the transformation of the role of students from traditional fine art creators who rely on manual technical skills to managers and facilitators of technology-based creative processes. This transformation is in line with the concept of Augmented Intelligence, an approach that emphasizes the synergy between artificial intelligence and human cognitive capacity, not to replace each other, but to strengthen each other. In this approach, AI is used to automate technical processes, while humans remain in control of decision-making that requires ethical judgment and artistic nuances (Dave & Mandvikar, 2023).

In the context of art education, AI facilitates students in exploring visual styles and creative ideas more broadly without being burdened by technical limitations, so that they can focus more on developing visual narratives and pedagogical substance. AI, as emphasized by (Lee, 2022), acts as a catalyst in the creative process, expanding the boundaries of possible artistic expression and accelerating the ideation process that previously required a longer time.

Furthermore, Wu et al. (2021) emphasized that the collaborative model between humans and AI enables the creation of works that combine the flexibility of human thinking with the computing power of AI. This process not only creates technical innovation, but also enriches the depth of aesthetics and meaning through the synthesis of diverse ideas. AI is able to imitate various artistic styles with high precision based on data training, but humans are still needed to filter, select, and direct these expressions to be contextually and culturally relevant.

In addition, Razmerita (2024) highlighting that this collaboration demands evaluative and self-regulatory skills from humans to be able to critically direct and evaluate the output of AI. In the learning space, students are required not only to utilize AI technically, but also to understand how this technology can be synergized with their artistic intuition and pedagogical vision in developing meaningful and contextual visual learning media.

1.2 Increasing the Efficiency of Visual Learning Media Production

The study results show that Fine Arts Education students from the 2023 class in the Multimedia Learning course reported a significant increase in the efficiency of the visual learning media production process thanks to the use of Artificial Intelligence (AI) technology. Students stated that creating illustrations, animations, or other supporting visuals, which previously took a long time and was quite complex, can now be completed in a short time without significantly sacrificing visual quality. AI assists in various stages

Proceeding of International Joint Conference on UNESA
Homepage: https://proceeding.unesa.ac.id/index.php/pijcu
ISSN: 3032-3762

PIJCU, Vol. 3, No. 1, December 2025
Page 315-325
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Proceeding of International Joint Conference on UNESA

of the creative process, such as initial sketching, automatic coloring, and aesthetic graphic composition, allowing students to focus more on developing pedagogical aspects and learning material content.

Most of the 30 students participating in this study utilized Canva, Gamma, and Quizizz as their primary AI-based platforms to support production efficiency. Canva was used to quickly design posters and learning visuals using its automated design feature. Gamma was used to instantly create interactive presentations from text input, while Quizizz was used to create engaging digital quizzes for visual learning assessment. The use of these applications demonstrates that AI has become a strategic tool in shortening production time and expanding the variety of learning media formats.

Table 1. Students' Use of AI Based Applications in Visual Learning Multimedia Production.

AI Applications	Functions in the Production Process	Percentage of Users (out of 30 students)
Canva	Poster design, digital illustration, learning infographics	86% (26 students)
Gamma	Automatic text-based presentation creation	73% (22 students)
Quizizz	Interactive quizzes and visual-based learning evaluations	60% (18 students)

Efficiency in visual media production is one of the most significant impacts of collaboration between students and Artificial Intelligence (AI) technology in multimedia learning. In the visual arts education environment, developing engaging and interactive visual content is often hampered by limited time, technical skills, and supporting resources. AI integration enables this process to be faster, more effective, and more flexible, while still placing students as the primary creators in the learning process.

This idea is in line with the concept of Augmented Intelligence as explained by Dave & Mandvikar (2023), which emphasizes the importance of collaboration between machines and humans in accelerating the creative process without eliminating the role of humans as the main controller. AI technology, in this case, does not replace students as creators of works, but becomes a partner in simplifying the technical process so that students can focus more on the conceptual and pedagogical aspects of visual learning media.

In a similar view, Lee (2022)emphasized that AI plays a role as a catalyst in the creative process accelerating ideation and providing design options that can be curated and modified by humans to produce contextual and innovative visuals. Wu et al. (2021) strengthening the human AI co-creation model, where AI accelerates the production of visual content without taking over artistic decisions that remain under the control of students.

Expanding on this view, Hutagalung et al. (2024) show that synergy between humans and AI can increase efficiency and effectiveness in the creative process, without eliminating the intuitive and emotional values that are characteristic of human creativity.

This collaboration is also considered capable of encouraging sustainability in the development of educational innovation, because it allows students to explore more visual possibilities in a shorter time, while still maintaining the relevance and depth of meaning in the work. However, this efficiency needs to be balanced with critical awareness of the potential for aesthetic homogenization and reduction of originality that can occur if students rely too much on AI generative results. Personal touches, contextual reflection, and visual sensitivity remain important components in maintaining the uniqueness and pedagogical relevance of the learning media developed.

1.3 Personalized Learning Media Through Adoption AI Tools

This study found that Fine Arts Education students of the 2023 batch in the Multimedia Learning course were able to optimize Artificial Intelligence (AI) technology to create learning media that are more personal and adaptive to the needs of diverse students. AI allows students to produce learning materials with a rich variety of visual styles, ranging from light and entertaining cartoon styles, detailed and deep realistic, to clean and focused minimalist designs. In addition, students also developed various media formats, such as digital posters, short animated videos, and interactive modules, which can be adjusted to different student learning preferences.

The ability to personalize learning media through AI is a significant added value in the context of fine arts education, where visual expression and effective communication are key aspects. The use of AI as a tool allows the creation of a variety of flexible and interactive learning media, supporting a more learner-centered learning model that is responsive to the diversity of learners. AI provides space for students to adjust the visual style (cartoon, realistic, minimalist), color, and media format such as posters, short videos, to interactive modules that can reach various learning styles.

According to Oyebola Olusola Ayeni et al. (2024) personalized learning, driven by AI algorithms, has shown tremendous effectiveness in addressing different learning styles, reducing educational gaps, and driving improved academic outcomes. They state that AI-enhanced educational technologies ranging from adaptive content delivery to virtual reality — have created more engaging and accessible learning environments. However, this integration also poses challenges, such as privacy issues, algorithmic bias, and the digital divide, which need to be addressed with ethical practices and appropriate policy development.

Castro et al. (2024) also emphasize that the use of AI in the context of Education 4.0 opens up great opportunities to design adaptive and personalized learning paths, as well as increase students' learning motivation. They highlight the importance of adapting user interfaces, delivery methods, and assessment of AI-based content that is responsive to student data. Meanwhile, Van Der Vorst & Jelicic (2019) state that AI may be the 'holy grail' in unlocking the potential of low-cost one-to-one learning, as long as the integration is done with awareness of the socio-technical, legal, and ethical implications.

Proceeding of International Joint Conference on UNESA
Homepage: https://proceeding.unesa.ac.id/index.php/pijcu
ISSN: 3032-3762

PIJCU, Vol. 3, No. 1, December 2025
Page 315-325
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Proceeding of International Joint Conference on UNESA

In line with this, Hashim et al. (2022) explained that the current generation of students is very comfortable with technology and has become accustomed to a participatory culture in a digital learning environment. They show that AI helps teachers create adaptive content, monitor student progress, and provide appropriate scaffolding and feedback, while maintaining interpersonal participation. Even in the Malaysian context, the use of AI is said to be the foundation for adaptive educational transformation to global economic challenges. However, this personalization also requires caution. Frank (2024) warns that AI's capacity to personalize content can obscure learning messages if not pedagogically controlled. He emphasized the importance of maintaining a balance between flexibility and consistency of educational goals so that learning media remain focused and meaningful. Tapalova & Zhiyenbayeva (2022) also emphasized that although AI can increase engagement and accessibility, learning paths must still be designed with human supervision to maintain the integrity of the curriculum and psychopedagogical context.

Overall, these findings confirm that personalization of learning through AI in art education is not just about efficiency, but rather a holistic learning strategy. Students need to combine technical skills and pedagogical sensitivity to be able to produce learning media that are not only personal, but also structured, reflective, and able to reach the diversity of learners effectively.

1.4 Strengthening Critical Digital Literacy and Ethical Awareness in the Use of AI

In the process of using Artificial Intelligence (AI) to develop multimedia learning media, Fine Arts Education students of the 2023 class realized that adequate digital literacy is very important. This digital literacy not only includes technical skills such as creating effective AI prompts and understanding how technology works, but also includes a deep understanding of the limitations of AI and the various ethical issues inherent in its use. Students demonstrate an awareness that AI is not an unlimited resource that can be used carelessly. They recognize the need to respect the copyright of other people's work, avoid plagiarism that can occur when using AI content, and be aware of algorithmic bias that can unfairly influence creative results.

This awareness encourages students to develop a critical and reflective attitude in applying AI technology, so that the resulting work remains original, authentic, and ethical. Students strive to apply the principles of social responsibility and creative ethics in the entire process of producing AI-based learning media. Critical digital literacy is a major component in developing the competencies of fine arts students in the era of AI technological transformation. Students' ability to use AI is not only sufficient from a technical perspective, but must also be accompanied by ethical awareness and moral responsibility. In this regard, Yang (2024) emphasized that ethical awareness of AI has a significant positive correlation with digital literacy and user moral sensitivity. The study shows that the variable of moral sensitivity is the most influential factor in increasing

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ISSN: 3032-3762

PIJCU, Vol. 3, No. 1, December 2025
Page 315-325
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students' ethical awareness of AI. Therefore, in order to form students who are not only technologically proficient but also have critical awareness, ethics education—especially related to technology and bioethics—needs to be integrated into the fine arts education curriculum.

On the other hand, Haroud & Saqri (2025) revealed differences in perspective between students and lecturers in responding to the presence of generative artificial intelligence technology. Students tend to view AI as a tool that supports creativity, independence, and increased access to learning, while lecturer's express concerns about the potential degradation of human skills such as critical thinking and collaboration. However, both parties agree that AI cannot replace the role of educators as primary facilitators in supporting students' cognitive and emotional needs. The study also emphasizes that improving digital literacy is an absolute requirement for the integration of AI in education to be carried out effectively and responsibly.

These findings suggest that students need to be equipped with comprehensive digital literacy training, including an understanding of AI ethics, digital copyright regulations, and potential risks such as algorithmic bias and plagiarism. A curriculum approach that encourages critical reflection on the use of technology can help ensure that the work produced remains authentic, contextual, and educationally valuable. In this context, AI should be seen not as a replacement for humans, but as a collaborative partner in the process of creating ethical, inclusive, and humane learning media.

Figure 1. Multimedia Learning Lecture Activities

CONCLUSION

The use of Artificial Intelligence (AI) in art education has driven a significant transformation in the role of students, from passive users to active creators of visual learning media. AI not only accelerates the creative process, but also expands the exploration of ideas and visual styles, allowing students to focus more on pedagogical substance. Human-AI collaboration in this context strengthens the reflective and adaptive approach in the learning process, in line with the principle of Augmented Intelligence that places humans as the main controller.

The research findings show four main contributions of AI: increased creativity, media production efficiency, learning personalization, and awareness of digital ethics. Students are not only required to master technology, but also to build critical digital literacy to avoid plagiarism, algorithmic bias, and unethical use. In this context, strengthening the

curriculum that emphasizes ethics, aesthetics, and digital pedagogy is the key to the success of AI integration in art education.

With policy support, lecturer mentoring, and adaptive curriculum development, students can be developed as innovative, contextual, and responsible learning media designers. Cross-party collaboration between educational institutions, technology developers, and educators is needed so that the use of AI is not just a trend, but truly strengthens the quality and human values in fine arts education.

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