Reimagining Culture and Arts Education through the Integration of Artificial Intelligence and the Sixth Industrial Revolution: Demands, Challenges, and Future Implications

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Abstract: This scoping review explores the demands and integration of Artificial Intelligence (AI) and the Sixth Industrial Revolution (IR 6.0) in culture and arts education. It maps existing literature to understand how these technological advancements reshape educational practices, enhance creativity, and prepare learners for a rapidly evolving digital society. Anchored in Technological Determinism and Social Constructivism, the study investigates five key research questions on AI and IR 6.0 demands, integration challenges, alignment strategies, and educational implications. Findings highlight the transformative potential of AI in delivering personalized learning, fostering creativity, preserving cultural heritage, and facilitating immersive experiences through virtual and augmented reality. Likewise, IR 6.0 demands integration of digital tools, blended learning, interdisciplinary approaches, and sustainability. However, challenges such as resistance to change, limited expertise, unequal access to technology, and ethical concerns persist. The review underscores the need for proactive strategies including project-based learning, equitable access, ethical AI use, and continuous teacher training. It concludes that AI and IR 6.0, if harnessed responsibly, can enrich culture and arts education. Gaps in long-term impact studies, ethics, access, and student perceptions are identified, with recommendations for future research to foster inclusive, innovative, and future-ready educational practices.

Keywords: Arts, artificial intelligence, culture, education, sixth industrial revolution.

INTRODUCTION

Artificial intelligence (AI) has been making significant strides in recent years, becoming an essential component of various industries, including education (Ajibade *et al*., 2024). AI's integration into education has the potential to revolutionize how we learn and teach by providing personalized and adaptive learning experiences (Luckin *et al*., 2016; Tabuena & Villareal, 2024). Additionally, the current technological era, commonly referred to as the Fourth Industrial Revolution, has led to the emergence of Industry 6.0, expected to have an even more profound impact on society (Morales *et al*., 2024; Schwab, 2016; Tabuena & Tabuena, 2025). With the evolution of Industry 6.0 and the rising demand for AI, there is a need for culture and arts education to integrate these developments into their curriculum.

Culture and arts education plays a vital role in shaping the future of our society. It equips individuals with critical thinking and problem-solving skills and provides a foundation for social and emotional development (Eisner, 2003). The integration of AI and Industry 6.0 into culture and arts education will enhance the learning experience and provide a more comprehensive education that prepares students for future demands. AI and Industry 6.0 have significant potential in the arts, especially in areas such as music, film, and design. For instance, AI can be used to generate new musical compositions, serving as a tool for exploring new forms of creativity (Briot *et al*., 2020). In film, AI can improve visual effects, making them more realistic and immersive (Manovich, 2018). Additionally, AI can assist artists in generating new ideas and streamlining the design process.

Moreover, AI can enhance the learning experience in culture and arts education. One example is using chatbots to provide personalized and adaptive learning experiences. These chatbots can interact with students, ask questions, and provide feedback, making learning more interactive and engaging. Furthermore, Industry 6.0 is expected to lead to the development of new technologies, such as virtual and augmented reality, which can be used in culture and arts education to provide immersive learning experiences (Billinghurst *et al*., 2015; Bravo *et al*., 2022; Tabuena, 2022). For instance, virtual reality can take students on virtual field trips, allowing them to explore historical sites, museums, and galleries from anywhere in the world. Augmented reality can enhance the learning experience by adding interactive elements to textbooks and other learning materials (Wu *et al*., 2013).

The integration of AI and Industry 6.0 into culture and arts education can also help address some challenges facing the industry. The arts industry is

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often seen as an exclusive field, with limited opportunities for individuals from diverse backgrounds. AI and Industry 6.0 can help democratize the industry by providing more accessible and inclusive opportunities. For example, AI can identify talent and provide training and support to individuals from underrepresented communities (O'neil, 2017). Thus, the integration of AI and Industry 6.0 into culture and arts education has the potential to revolutionize how we learn and teach. It can enhance the learning experience by providing personalized and adaptive learning experiences and offering new creative opportunities for artists. Additionally, it can help address some of the challenges facing the industry, such as exclusivity and lack of diversity. Therefore, it is essential for culture and arts education to embrace these developments and integrate them into their curriculum to prepare students for future demands.

Theoretical Frameworks

This article is anchored on two theoretical frameworks that support the integration of Industry 6.0 in culture and arts education: Technological Determinism and Social Constructivism. Technological Determinism is a theory suggesting that technology significantly shapes society, culture, and human behavior. This theory posits that technology is a primary driver of change and development, and its advancement leads to social and cultural transformations (Smith & Marx, 1994). In the context of integrating Industry 6.0 in culture and arts education, Technological Determinism would imply that these technological advancements will substantially impact the field of culture and arts education.

According to Technological Determinism, the integration of Industry 6.0 in culture and arts education would lead to significant changes in how we teach and learn. For example, personalized and adaptive learning experiences provided by advanced technologies could lead to more efficient and effective learning outcomes. Additionally, the use of virtual and augmented reality technologies would allow students to experience the arts in new and immersive ways. However, Technological Determinism has been criticized for oversimplifying the relationship between technology and society. Critics argue that technology is not the sole driving force behind social and cultural changes and that society also influences the development and use of technology (Fischer, 1987). Therefore, a researcher using Technological Determinism as a theoretical framework should also consider the social, cultural, and economic factors that affect the integration of Industry 6.0 in culture and arts education.

Social Constructivism is another theoretical framework that can be employed. Social Constructivism suggests that knowledge is constructed through social interaction and that the cultural context plays a crucial role in shaping learning and knowledge acquisition (Vygotsky & Cole, 1978). In the case of the integration of Industry 6.0 in culture and arts education, Social Constructivism would propose that these technological advancements must be integrated into the existing cultural context to be effective. According to Social Constructivism, the integration of Industry 6.0 in culture and arts education must consider the existing cultural norms and values of society. For example, the use of advanced technologies must align with the cultural values of creativity and innovation in the arts. Additionally, the use of these technologies must not undermine the social and emotional development essential to culture and arts education (Bravo *et al*., 2022; Dewey, 1986).

Hence, both Technological Determinism and Social Constructivism are viable theoretical frameworks for researching the integration of Industry 6.0 in culture and arts education. A researcher using Technological Determinism should consider the social, cultural, and economic factors that affect this integration, while a researcher using Social Constructivism should consider the existing cultural context and values of society. Thus, the choice of theoretical framework will depend on the research question and the researcher's perspective.

Research Questions

This article aimed to examine the demands of artificial intelligence and the integration of the Industrial Revolution 6.0 in culture and arts education. Specifically, this article also sought to answer the following:

1. What are the demands of artificial intelligence in culture and arts education?
2. What are the demands of Industrial Revolution 6.0 in culture and arts education?
3. What are the difficulties of artificial intelligence integrating the Industrial Revolution 6.0 in culture and arts education?

4. How can the demands of artificial intelligence be nurtured to address the demands of Industrial Revolution 6.0 in culture and arts education?

5. What are the implications of the demands of artificial intelligence and Industrial Revolution 6.0 on culture and arts education?

METHODOLOGY

Research Design

This research article employs a scoping review methodology to examine the demands of artificial intelligence (AI) and the integration of the Industrial Revolution 6.0 (IR 6.0) in culture and arts education. A scoping review is an effective approach to map the existing literature on a broad topic, identify key concepts, theories, and gaps in the research, and provide a comprehensive overview of the available evidence (Arksey & O'Malley, 2005).

Objectives

The objectives of this scoping review are to identify the demands of AI in culture and arts education, to identify the demands of IR 6.0 in culture and arts education, to explore the difficulties of integrating AI with IR 6.0 in culture and arts education, to investigate how the demands of AI can address the demands of IR 6.0 in culture and arts education, and to determine the implications of these demands on culture and arts education.

Search Strategy

The search strategy for this scoping review will include a comprehensive search of multiple databases, including but not limited to PubMed, Scopus, Web of Science, ERIC, and Google Scholar. The search will use a combination of keywords and phrases related to AI, IR 6.0, culture and arts education, and their integration. Examples of search terms include "Artificial Intelligence in education,""Industrial Revolution 6.0,""Culture and arts education,""Integration of AI and Industry 6.0,""Adaptive learning technologies," and "Virtual and augmented reality in education."

Inclusion and Exclusion Criteria

The inclusion criteria for this review are articles published in peer-reviewed journals, articles and reports discussing AI and IR 6.0 in the context of culture and arts education, studies published in English, and articles published in the last 10 years to ensure the relevance and recency of the data. The exclusion criteria are articles not related to culture and arts education, non-peer-reviewed articles, opinion pieces, and editorials, studies published in languages other than English, and articles published more than 10 years ago unless they are seminal works.

Study Selection

The study selection process will involve multiple stages. The initial screening will involve reviewing titles and abstracts of the retrieved articles for relevance by two independent reviewers. Articles that pass the initial screening will undergo a full-text review by the same two independent reviewers to determine their eligibility based on the inclusion and exclusion criteria. Any discrepancies between the reviewers will be resolved through discussion, and if necessary, a third reviewer will be consulted.

Data Extraction

Data will be extracted from the selected articles using a standardized data extraction form. The extracted data will include the author(s), year of publication, title of the study, type of study (e.g., empirical, theoretical, review), key findings related to AI and IR 6.0 in culture and arts education, identified demands of AI and IR 6.0, challenges and difficulties of integration, and implications for culture and arts education.

Data Analysis and Synthesis

The extracted data will be analyzed using a thematic analysis approach. This will involve identifying and categorizing the key themes and patterns related to the demands and integration of AI and IR 6.0 in culture and arts education. The findings will be synthesized to provide a comprehensive overview of the current state of research in this area, highlight the gaps in the literature, and suggest areas for future research.

DISCUSSION

The results of the scoping review will be discussed in terms of the identified demands of AI and IR 6.0 in culture and arts education. Personalized and adaptive learning involves AI's ability to provide tailored instruction and feedback to students based on their performance and learning styles. Enhancing creativity pertains to AI's role in generating new ideas and

patterns in art and music, thus fostering creativity. Immersive learning experiences are achieved through the use of AI-powered virtual and augmented reality to provide students with interactive and engaging experiences. The preservation of cultural heritage can be facilitated by AI's potential in digitizing and preserving cultural artifacts. Collaboration and co-creation are enabled by AI's facilitation of real-time collaboration among students from different locations. Additionally, automating repetitive tasks allows educators to focus on more creative aspects of teaching by using AI for grading and administrative tasks.

The scoping review will also address the demands of IR 6.0 in culture and arts education, including the integration of digital tools, blended learning, interdisciplinary approaches, career readiness, accessibility, and sustainability. This comprehensive analysis will provide a nuanced understanding of how AI and IR 6.0 can be effectively integrated into culture and arts education.

Reporting

The results of the scoping review will be reported following the PRISMA-ScR (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews) guidelines (Tricco *et al*., 2018). The final report will include a summary of the search strategy and study selection process, a descriptive summary of the included studies, a thematic synthesis of the findings related to the demands of AI and IR 6.0 in culture and arts education, identification of research gaps, and recommendations for future research.

RESULTS AND DISCUSSION

Summary of the Search Strategy and Study Selection Process

The search strategy involved systematically exploring multiple academic databases and relevant grey literature sources to identify studies focused on the demands of AI and IR 6.0 in culture and arts education. Keywords and search terms were developed in consultation with experts and included variations of "artificial intelligence,""Industrial Revolution 6.0,""culture,""arts education,""personalized learning,""digital tools," and "interdisciplinary approaches." Boolean operators, truncation, and proximity searching were employed to enhance the search's comprehensiveness.

The study selection process followed predefined inclusion and exclusion criteria. Inclusion criteria comprised studies published in peer-reviewed journals, conference proceedings, and credible reports addressing the integration of AI and IR 6.0 in culture and arts education. Exclusion criteria included studies not in English, those outside the scope of education, and non-research articles. Titles and abstracts were screened for relevance, followed by a full-text review to confirm eligibility. Discrepancies were resolved through discussion or consultation with a third reviewer.

Descriptive Summary of the Included Studies

The review included a diverse range of studies, encompassing empirical research, theoretical articles, case studies, and reviews. Studies varied in methodology, including qualitative, quantitative, and mixed-methods approaches. The geographical distribution of the studies was broad, with contributions from North America, Europe, Asia, and other regions, reflecting a global interest in the topic. Key aspects of the studies included the application of AI in personalized learning, the use of digital tools and technologies, interdisciplinary educational strategies, and the implications for creativity and career readiness.

Thematic Synthesis of the Findings

Research Question no. 1 (theme 1): The Demands of Artificial Intelligence in Culture and Arts Education

The integration of artificial intelligence (AI) into culture and arts education presents a diverse array of transformative opportunities. AI's advancement promises to revolutionize pedagogical approaches by offering personalized and adaptive learning experiences tailored to individual student needs and learning styles (Anderson & Lee, 2022). Through sophisticated data analysis, AI can provide targeted feedback and recommendations, facilitating more effective learning outcomes. For instance, AI-powered software like Duolingo adapts language learning exercises based on the user's proficiency level, enhancing comprehension and retention (Pavlov *et al*., 2024).

Moreover, AI holds significant promise in fostering creativity within culture and arts education. In terms of analyzing vast datasets of artistic expressions, AI algorithms can identify patterns and generate novel compositions. This capability not only enhances students' creative skills but also broadens their

exposure to diverse artistic styles and techniques (Ke, 2023). For example, AI-generated music compositions have been explored in contemporary music production, inspiring new genres and approaches (Gioti, 2020; Tabuena *et al*., 2021).

In addition to personalized learning and creativity enhancement, AI facilitates immersive learning experiences through virtual and augmented reality technologies. Students can virtually explore renowned art galleries and historical sites, transcending geographical and logistical constraints (Kwon & Morrill, 2022). This immersive engagement not only deepens understanding but also fosters a profound connection with cultural heritage and artistic traditions.

Furthermore, AI contributes significantly to the preservation of cultural heritage by digitizing and cataloging artifacts, manuscripts, and artworks. AI algorithms assist in the analysis and restoration of historical materials, ensuring their accessibility and longevity for future generations (Harisanty *et al*., 2024; Rabbi *et al*., 2022). For instance, the British Museum employs AI to enhance the preservation and documentation of ancient artifacts, preserving cultural legacies that might otherwise be lost to time (Gîrbacia, 2024).

Moreover, AI facilitates collaboration and co-creation among students and educators across diverse geographical locations. Real-time collaboration tools powered by AI enable seamless teamwork on creative projects, fostering a dynamic exchange of ideas and perspectives (Khatoon, 2025). Such collaborative opportunities not only enrich learning experiences but also cultivate essential skills in teamwork and communication.

Additionally, AI automates repetitive administrative tasks, allowing educators to allocate more time and energy to interactive and creative teaching methods. By automating grading processes and administrative duties, AI enhances efficiency and enables educators to provide more personalized feedback on students' artistic endeavors (Gupta & Nitu Kumar, 2024).

While AI presents compelling opportunities to revolutionize culture and arts education, it is essential to recognize its role as a facilitator rather than a substitute for human creativity and engagement--educators can augment learning experiences, broaden students' perspectives, and preserve cultural heritage for future generations. Embracing AI in culture and arts education thus signifies a transformative shift towards more dynamic, inclusive, and impactful learning environments.

Research Question no. 2 (Theme 2): The Demands of Industrial Revolution 6.0 in Culture and Arts Education

The demands of the Industrial Revolution 6.0 (IR 6.0) on culture and arts education underscore the transformative impact of advanced technologies across various industries, including education. IR 6.0 is characterized by the integration of physical, digital, and biological technologies, reshaping traditional practices and fostering innovation. In culture and arts education, several key demands emerge that reflect this technological evolution:

Firstly, IR 6.0 necessitates the integration of digital tools into arts education. This includes utilizing digital art software, 3D printers, and other digital fabrication technologies to enhance creativity and enable new forms of artistic expression (Peppler, 2010; Song, 2020). For instance, digital painting software allows students to explore a wide range of artistic techniques and styles that would be impractical or impossible with traditional mediums alone.

Secondly, IR 6.0 promotes blended learning approaches, combining face-to-face instruction with online resources and digital platforms. This hybrid model supports flexibility and accessibility, offering students opportunities to engage with multimedia content, participate in virtual exhibitions, and collaborate on projects beyond the physical classroom (Katal *et al*., 2023).

Moreover, IR 6.0 encourages interdisciplinary approaches in culture and arts education, integrating fields such as technology, science, engineering, and mathematics (STEM). In terms of bridging these disciplines, students can explore innovative intersections of art and technology, such as interactive installations and digital performances that merge artistic expression with scientific principles (Liao, 2016).

Furthermore, IR 6.0 emphasizes preparing students for future careers by equipping them with skills relevant to the digital economy. This includes proficiency in data analysis, digital media production, and other technological competencies essential for careers in creative industries and beyond (Muthuswamy, 2023; Tabuena, 2020).

Accessibility is also a priority in IR 6.0, ensuring that culture and arts education are inclusive and available to all learners. Online learning platforms and digital resources facilitate access to educational materials, enabling students from diverse backgrounds and geographical locations to participate in arts education initiatives (Rochina Chisag & Tabuena, 2022; Siddiqi, 2024).

Lastly, IR 6.0 highlights the importance of sustainability in culture and arts education. Educators can integrate lessons on sustainable art practices (Patil *et al*., 2025), encouraging students to explore eco-friendly materials and methods in their creative projects. Digital technologies can support these efforts by modeling sustainable design principles and promoting awareness of environmental issues through artistic expression (Southward, 2018).

The demands of IR 6.0 in culture and arts education underscore the imperative to embrace technological advancements while fostering creativity, collaboration, and interdisciplinary learning--adopting blended learning strategies, and preparing students for future careers, educators can effectively navigate the evolving landscape of education and ensure that culture and the arts remain vibrant and relevant in a digitally driven world.

Research Question no. 3 (theme 3): The Difficulties of Artificial Intelligence Integrating the Industrial Revolution 6.0 in Culture and Arts Education

The integration of artificial intelligence (AI) and the Industrial Revolution 6.0 (IR 6.0) into culture and arts education holds promise but also brings forth significant challenges that educators and stakeholders must navigate–resistance to change poses a substantial hurdle. Many educators may hesitate to adopt AI and IR 6.0 technologies due to skepticism about their effectiveness or attachment to traditional teaching methods (Yonggang, 2025). For example, some art educators might prefer traditional studio practices over digital tools, fearing that technological integration could diminish the authenticity of artistic expression.

A critical challenge lies in the lack of expertise required for effectively integrating AI and IR 6.0 into arts education. Educators need both technical proficiency and a deep understanding of artistic pedagogy to leverage these technologies effectively (Weisberg *et al*., 2025). Training programs and professional development opportunities are essential to equip educators with the necessary skills to navigate this intersection of technology and art education.

Access to technology presents another significant barrier. Not all educational institutions have equal resources to invest in AI tools, digital fabrication equipment, or high-speed internet required for online learning platforms (Wu & Peng, 2024). This digital divide can exacerbate inequalities in access to quality arts education, particularly in underserved communities or rural areas.

Privacy and data security concerns emerge with the integration of AI and digital technologies in education. Safeguarding student data and ensuring ethical AI use are paramount (Williamson & Eynon, 2020). Institutions must implement robust data protection measures and adhere to ethical guidelines to maintain trust and compliance with privacy regulations.

There is also a risk of overreliance on technology, potentially sidelining essential human skills like creativity, critical thinking, and collaborative problem-solving (Karamuk, 2025). While AI can enhance creative processes through data-driven insights and automated tools, educators must strike a balance to preserve the authenticity and humanistic aspects of artistic expression.

Maintaining this balance between technology and creativity is crucial. AI can augment creativity by providing novel perspectives and tools, such as algorithmically generated art or virtual reality experiences (Cai, 2025; Subramanian *et al*., 2025). However, educators must ensure that students continue to engage in hands-on, experiential learning that nurtures artistic intuition and innovation.

Integrating AI and IR 6.0 into culture and arts education requires careful consideration of these challenges alongside proactive planning and adaptation–educators can effectively harness the potential of AI and IR 6.0 to enrich arts education and prepare students for a rapidly evolving digital world.

Research Question no. 4 (Theme 4): Nurturing the Demands of Artificial Intelligence in Addressing the Demands of Industrial Revolution 6.0 in Culture and Arts Education

The demands of artificial intelligence (AI) and the Industrial Revolution 6.0 (IR 6.0) in culture and arts education are intertwined, offering educators opportunities to cultivate innovative learning experiences. To effectively address these demands,

educators can implement several strategies, one of which is embracing interdisciplinary learning as a crucial approach. IR 6.0 emphasizes the convergence of traditional disciplines with emerging fields such as technology and digital humanities. In terms of integrating AI and other technologies into arts education, educators can create novel learning experiences that bridge artistic expression with scientific inquiry and technological innovation (Bequette & Bequette, 2012).

Providing access to technology is essential to meet the demands of AI and IR 6.0. This includes ensuring students have access to tools like 3D printers, digital art software, and virtual reality platforms. For instance, schools can establish digital fabrication labs where students can experiment with creating sculptures using 3D printing technology, merging traditional craftsmanship with digital design (Song, 2020).

Incorporating project-based learning is another effective strategy. This approach empowers students to tackle real-world challenges through creative problem-solving and collaboration. In terms of integrating AI and IR 6.0, educators can design projects that prompt students to explore how technology can enhance artistic expression and cultural understanding. For example, students could develop interactive digital installations that explore social issues or historical narratives using AI-generated content (Ajibade *et al*., 2023; Attaluri & Mudunuri, 2025; Nomula *et al*., 2024).

Fostering creativity and innovation is at the core of addressing AI and IR 6.0 demands in arts education. Educators can nurture creativity by encouraging students to experiment with new technologies, take creative risks, and explore unconventional approaches to artistic expression. This approach not only enhances technical skills but also cultivates an entrepreneurial mindset essential for adapting to technological advancements in the creative industries (Albakry *et al*., 2025).

Emphasizing lifelong learning supports the continuous adaptation required by AI and IR 6.0. Educators can instill a passion for learning beyond the classroom by encouraging students to explore emerging technologies independently and participate in professional development opportunities. This approach ensures that students remain adaptable and resilient in a rapidly evolving digital landscape (Zhang & Wang, 2025).

Promoting ethical and responsible use of AI is imperative. Educators play a critical role in guiding students to understand the ethical implications of AI in cultural contexts. In terms of integrating discussions on ethics and social responsibility into arts education, educators can empower students to use technology ethically and advocate for inclusive and equitable practices in the arts (Tong, 2024).

Thus, meeting the demands of AI and IR 6.0 in culture and arts education requires a proactive approach that fosters innovation, creativity, and lifelong learning. In terms of embracing interdisciplinary learning, providing equitable access to technology, implementing project-based learning, fostering creativity and innovation, emphasizing lifelong learning, and promoting ethical use of AI, educators can enrich arts education and prepare students for future challenges and opportunities.

Research Question no. 5 (Theme 5): The Implications of the Demands of Artificial Intelligence and the Industrial Revolution 6.0 on Culture and Arts Education

The demands of artificial intelligence (AI) and the Industrial Revolution 6.0 (IR 6.0) have profound implications for culture and arts education, influencing teaching methods and student learning experiences, wherein embracing new and emerging technologies is pivotal. AI and IR 6.0 necessitate the integration of digital art tools, virtual reality (VR), and 3D printing into arts education. For example, VR technology can immerse students in virtual exhibitions of historical art movements or architectural marvels, providing interactive learning experiences that enhance their understanding and appreciation of cultural heritage (Kwon & Morrill, 2022).

Interdisciplinary learning is emphasized under IR 6.0. This approach encourages educators to blend traditional arts disciplines with fields like technology, science, and humanities. In terms of integrating diverse perspectives, such as combining artistic expression with scientific data visualization techniques, educators can foster deeper insights and connections among students, promoting a more holistic understanding of cultural contexts (Williamson & Eynon, 2020).

New skills and competencies are essential for navigating the digital landscape. AI and IR 6.0 demand proficiency in programming, data analysis, and digital design. These skills not only prepare students for careers in creative industries but also empower them to

explore innovative ways of artistic expression, such as creating algorithmically generated art or using data-driven insights to inform their creative processes (Weisberg *et al*., 2025).

Greater access to information is facilitated through AI and IR 6.0 integration. Digital libraries and online databases provide students with vast resources for researching artistic movements, cultural histories, and contemporary trends. This accessibility broadens students' horizons, enabling them to explore diverse perspectives and develop informed interpretations of cultural artifacts and artistic practices (Zhang & Wang, 2025).

Ethical considerations become critical in AI and IR 6.0 integration. Educators must address issues such as data privacy, algorithmic bias, and the responsible use of technology in arts education. In terms of fostering discussions on ethical implications, educators can empower students to critically evaluate the societal impacts of technological advancements and advocate for ethical practices in creative endeavors (Karamuk, 2025).

New forms of expression emerge with AI and IR 6.0. Digital art, interactive installations, and multimedia projects expand the possibilities for artistic exploration and audience engagement. For instance, students can collaborate on interactive digital exhibits that incorporate AI-generated narratives or virtual performances that blend live actors with augmented reality environments, offering novel ways to engage with cultural narratives and artistic innovations (Jones *et al*., 2023).

Consequently, the demands of AI and IR 6.0 in culture and arts education require educators to adapt teaching methodologies to leverage new technologies, foster interdisciplinary learning, cultivate essential skills, enhance access to information, address ethical considerations, and explore innovative forms of artistic expression. In terms of embracing these implications, educators can enrich student learning experiences and prepare them for success in an increasingly digital and interconnected world.

CONCLUSION, RESEARCH GAPS AND RECOMMENDATIONS

Conclusion

The demands of AI in culture and arts education present exciting opportunities to enhance learning outcomes and revolutionize the teaching and learning of culture and the arts. However, it is crucial to acknowledge that AI does not replace human creativity and interaction; instead, it is a tool that can augment and improve the learning experience. On the other hand, IR 6.0 demands that culture and arts education embrace new technologies and teaching methods while upholding the importance of creativity, cooperation, and interdisciplinary learning. In terms of embracing these requirements, educators can equip students for the future of work and ensure the continued relevance of culture and the arts in an ever-changing world.

Successfully integrating AI and IR 6.0 into culture and arts education necessitates meticulous planning, consideration of challenges, and an adaptable mindset to keep up with emerging technologies. Addressing these issues enables educators to integrate AI and IR 6.0 effectively, providing students with exciting new opportunities for learning. In addition, nurturing the demands of AI and IR 6.0 in culture and arts education requires a commitment to innovation, creativity, and continuous learning. To meet the evolving demands in culture and arts education, educators can adopt strategies such as promoting interdisciplinary learning, ensuring access to technology, integrating project-based learning, nurturing creativity and innovation, emphasizing lifelong learning, and advocating for the ethical use of AI—ultimately offering students a holistic and forward-thinking educational experience.

Therefore, the implications of AI and IR 6.0 demands in culture and arts education are significant for educators' teaching and learning approaches. Educators can equip students for success in a digital world by integrating new technologies, fostering interdisciplinary learning, cultivating relevant skills and competencies, expanding access to information, highlighting ethical considerations, and encouraging new forms of artistic expression—thereby creating an innovative and well-rounded learning experience.

RESEARCH GAPS

The review identified several research gaps that need to be addressed. Firstly, there is a need for long-term studies to assess the sustained impact of AI and IR 6.0 on culture and arts education. Research should also explore the integration of these technologies in diverse educational settings, including under-resourced schools and non-traditional learning environments. Furthermore, more studies are required to examine the ethical considerations and social implications of using

AI in education, particularly concerning data privacy and the potential for bias. Additionally, research should focus on developing effective training programs for educators to integrate AI and digital technologies into their teaching practices. Lastly, there is a lack of research on students' perceptions and experiences of AI and digital technologies in their learning processes.

RECOMMENDATIONS

Based on the findings and identified gaps, several recommendations are made for future research. Longitudinal studies should be conducted to investigate the long-term effects of AI and IR 6.0 integration on student learning outcomes, creativity, and career readiness. Research should also examine how AI and digital technologies can be effectively implemented in various educational contexts, including marginalized and underserved communities. Furthermore, studies should focus on the ethical implications of AI in education, emphasizing data security, bias mitigation, and equitable access to technology. There is also a need to develop and evaluate professional development programs that equip educators with the skills to integrate AI and digital tools into their teaching. Lastly, incorporating student perspectives in research is crucial to understand their experiences and identify best practices for engaging them with AI and digital technologies–future research can contribute to a more comprehensive understanding of the demands of AI and IR 6.0 in culture and arts education, ultimately leading to more effective and innovative educational practices.

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