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Development and Application of Artificial Intelligence in the Field of Art Education

تطوير وتطبيق الذكاء الاصطناعي في مجال تعليم الفنون

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Abstract: This paper explores the specific features of artificial intelligence (AI) usage in the field of art education, with a focus on a comparative analysis of the experiences of China and Kyrgyzstan. The study employed a comparative analysis of academic discourse on AI, along with thematic analysis of interviews with lecturers from faculties of art and design in higher education institutions in China (n=2) and the Kyrgyz Republic (n=2). The primary emphasis was placed on the benefits, challenges, and prospects of AI use in the training of art designers. The research included an analysis of ten popular AI-based tools, such as DALL-E, MidJourney, Adobe Firefly, and Gradescope. The inclusion of interview methods enabled the identification of differences in approaches to AI use in the educational institutions of the two countries. The study's findings confirm the significant potential of AI in personalising learning, optimising the educational process, and enhancing graduates' competitiveness in the labour market. At the same time, key obstacles were identified: limited awareness among lecturers, high costs of AI-based tools, as well as ethical and legal issues. Particular attention is paid to the differing levels of readiness in China and Kyrgyzstan for AI integration in their educational systems. The paper offers recommendations for effective implementation, including raising awareness, government support, and the development of international cooperation. The proposed four-step model of AI adoption was developed to support systematic implementation in higher education and may be adapted for use in other national contexts. The research highlights the importance of overcoming existing barriers in order to expand the application of AI in art education

Keywords: Machine learning, Distance learning, Social equity/inequality, Pedagogical strategies, Personalised learning.

المستخلص: تستكشف هذه الورقة الخصائص المحددة لاستخدام الذكاء الاصطناعي (AI) في مجال تعليم الفنون، مع التركيز على تحليل مقارن لتجارب الصين وقيرغيزستان .اعتمدت الدراسة على تحليل مقارن للخطاب الأكاديمي حول الذكاء الاصطناعي، إلى جانب تحليل موضوعي لمقابلات أُجريت مع محاضرين من كليات الفنون والتصميم في مؤسسات التعليم العالي في الصين (عددهم 2) وجمهورية قيرغيزستان (عددهم 2)، وقد تم التركيز بشكل أساسي على فوائد

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وتحديات وآفاق دمج الذكاء الاصطناعي في تدريب مصممي الفنون. شملت الدراسة تحليل عشرة أدوات شائعة قائمة على الذكاء الاصطناعي، مثل DALL-E , MidJourney، Adobe Firefly، Gradescope. أسهم استخدام منهج المقابلات في تحديد الفروق في أساليب توظيف الذكاء الاصطناعي في المؤسسات التعليمية في كلا البلدين. وتؤكد نتائج الدراسة الإمكانات الكبيرة للذكاء الاصطناعي في تخصيص التعلم، وتحسين العملية التعليمية، وتعزيز تنافسية الخريجين في سوق العمل. وفي الوقت ذاته، تم تحديد عدد من التحديات الرئيسية، منها :محدودية وعي المحاضرين، وارتفاع تكلفة أدوات الذكاء الاصطناعي، إضافة إلى القضايا الأخلاقية والقانونية. كما تولي الدراسة اهتمامًا خاصًا لاختلاف مستويات الجاهزية بين الصين وقيرغيزستان في دمج الذكاء الاصطناعي في أنظمتهما التعليمية، تقدم الورقة توصيات لتطبيق فعال للذكاء الاصطناعي، بما في ذلك رفع مستوى الوعي، ودعم الحكومات، وتطوير التعاون الدولي، ويمكن تكييف نموذج دمج الذكاء الاصطناعي المقترح والمكوّن من أربع مراحل مع الأنظمة التعليمية في دول أخرى، وتؤكد الدراسة أهمية التغلب على العوائق لتوسيع نطاق استخدام الذكاء الاصطناعي في تعليم الفنون.

الكلمات المفتاحية: التعلم الآلي، التعلم عن بُعد، العدالة/عدم المساواة الاجتماعية، الاستراتيجيات التربوية، التعلم المخصص.

1 INTRODUCTION

Artificial intelligence (AI) is increasingly integrated into education; however, the application of neural networks in art education remains insufficiently explored. Unlike STEM-oriented domains, art and design education involves subjective evaluation, creative decision-making, and visual interpretation, which makes the application of AI tools in this field fundamentally different and requires separate investigation. The relevance of this topic is driven by the growing demand for highly skilled, innovation-oriented designers in sectors where visual competencies are essential.

AI is commonly defined as a machine-based system capable of operating autonomously, adapting, and generating outputs such as predictions or recommendations based on data (Chiappini, 2024; Celeghin et al., 2023; Efremov, 2026). Its rapid development is driven by deep learning algorithms that enable efficient processing of complex data, including images and texts (Akbari et al., 2024; Borgomaneri et al., 2023). Empirical evidence suggests that AI has surpassed human performance in several cognitive domains, increasing its economic attractiveness. Global investment in AI reached USD 168.2 billion in 2023, with further growth expected due to intensified funding by leading technology companies (Giattino et al., 2024; Stanford University, 2024). As of 2024, education is not a primary target of AI investment, although its pedagogical potential remains widely studied. Moroianu et al. (2023), analysing 43 studies, identified a surge of interest in 2019. This increase was associated with the COVID-19 pandemic and the need to rethink educational practices. Research frequently focuses on teaching specific skills, such as writing (Lira and Sanchez, 2024), as well as broader effects on learning outcomes (Wang et al., 2024).

Empirical studies indicate that AI enhances personalised learning and improves educational quality (Bit et al., 2024), while also transforming higher education by shifting emphasis from memorisation to critical thinking and practical application (Bennett and Abusalem, 2024; Huseynov, 2024).). Survey data confirm strong student interest in AI competencies as relevant to future employment (Thompson et al., 2024). Overall, AI integration is seen as a key factor in developing essential skills and increasing graduate

employability. At the same time, there are concerns regarding the appropriateness and potential impact of AI on education quality. Drawing on a survey of 240 teachers involved in final-year education programmes, Kalniņa et al. (2024) concluded that insufficient awareness was the main barrier. As a result, many educators demonstrated limited readiness to use machine learning-based applications in their teaching practice. In their study, Eden et al. (2024) highlighted ethical considerations — such as data confidentiality — as critical factors in decision-making about AI use in teaching. Based on a survey of 150 university students, Xiu Jie and Kamrozzaman (2024) identified four key barriers to AI use in education: data privacy and security, ethical concerns, over-reliance on AI-based tools, and lack of understanding of AI's features and benefits. These factors contribute to the lower intensity of AI use in education compared to other sectors. However, existing research pays limited attention to how these challenges manifest specifically in creative disciplines such as art and design education, where AI is not only a learning support tool but also a medium of artistic production and interpretation. This study addresses this gap by situating the analysis within two contrasting educational and technological contexts. China was selected as a country with advanced and rapidly developing AI infrastructure and extensive integration of AI in higher education, whereas Kyrgyzstan represents a context with emerging adoption and more limited technological resources. This contrast allows for the identification of different stages and models of AI implementation and enables a more comprehensive understanding of global patterns of educational AI adoption.

Considering the benefits and challenges discussed above, this study investigates the specific characteristics of AI application in the field of art education. The novelty of this research lies in combining (1) a comparative cross-country analysis (China–Kyrgyzstan), (2) a focus on art and design education as a distinct creative domain, and (3) an integrated examination of both academic discourse and empirical interview data on AI use. The study aims to analyse and compare the use of artificial intelligence in art and design education in China and Kyrgyzstan.

Based on this aim, the study addresses the following research questions:

RQ1: How is artificial intelligence currently used in art and design education in China and Kyrgyzstan?

RQ2: What are the key similarities and differences in AI integration between the two countries?

RQ3: What are the main benefits and challenges of AI use in art and design education in these contexts?

RQ4: What strategies can improve the effective integration of artificial intelligence in art and design education?

2 MATERIALS AND METHODS

To contextualise the use of AI in education, a comparative analysis of ten (n=10) AI-based tools was carried out, including five (n=5) widely used in higher education (Turnitin, Questionmark, Gradescope, Blackboard Learn, MetaCOG) and five (n=5) AI-based tools for art and design training (DALL-E, MidJourney, Adobe Firefly, Craiyon, Runway). The selection of these tools was based on the following inclusion criteria: (1) documented use in higher education or creative practice, (2) relevance to teaching, assessment, or content generation, (3) active application in recent academic or professional contexts, and (4) accessibility for educational use (including free or widely available versions where applicable). Tools that lacked clear application in educational or creative contexts, or that had limited accessibility, were excluded from the analysis. Each tool was examined in terms of key features, advantages, and potential limitations in educational contexts.

The study focused on China and Kyrgyzstan, representing advanced and early stages of AI integration. This comparison was undertaken to identify effective approaches that could be applied across different educational contexts. Additionally, interview data were collected from three respondents affiliated with art and design faculties at Kyrgyz State University named after I. Arabaev, Jilin University, and the Chinese University of Hong Kong, Shenzhen. Fourteen open-ended interview questions were developed to explore AI use, digital technologies, and pedagogical practices. The interviews were conducted via Zoom with informed consent obtained from all participants. Participant anonymity and data confidentiality were ensured throughout the study. Subsequently, the collected data were analysed using thematic analysis to identify recurring patterns and themes.

3 RESULTS

3.1 AI-based tools in education

AI-based tools are becoming increasingly widespread in education and are attracting growing attention from researchers. In the Chinese academic community, for example, there is sustained interest in the application of AI in learning, as well as in related ethical and other issues. This trend is illustrated in Table 1, which presents citation and download data for academic articles on AI in education published since 2017.

Table (1). Most frequently cited articles on AI in Chinese education

Article title	First author	Source	Year	Institution	Number of citations	Number of downloads
"Connotation, Key Technologies and Application Trends of Educational AI"	Yan Zhiming	Journal of Distance Education	2017	Ludong University	583	48,756
"Analysis of the Current Situation, Typical Features, and Development Trends of AI Application in Education"	Liang Yingli	Audio-Visual Education in China	2018	University of Posts and Telecommunications	414	26,553
"Building an 'AI + Education' Ecosystem"	Wu Yonghe	Journal of Distance Education	2017	East China Normal University	379	23,833
"Smart Education: Educational Reform in the Era of AI"	Peijie Cao	Educational Research	2018	Chinese Academy of Educational Sciences	252	12,603
"The Transformation of Information Literacy from the Perspective of AI and the Goal Orientation of AI-based Education"	Chen Kaiquan	Journal of Distance Education	2018	Ocean University of China	236	13,266
"New Areas, Misconceptions, Blind Spots, and Forbidden Zones in the Application and Research of AI in Education"	Zhang Kunying	Journal of Distance Education	2017	Huaibei Normal University	232	12,520
"Educational Applications and Innovations in Machine Learning from the Perspective of AI"	Yu Minghua	Journal of Distance Education	2017	East China Normal University	214	6,262
"A New 'Dual-Teacher Classroom' Model Supported by AI Educational Robots"	Shichong Wang	Journal of Distance Education	2019	Capital Normal University	187	11,106
"Development Pathways for AI in Education in the Age of Wisdom"	Ma Yuhui	Audio-Visual Education in China	2019	Bohai University	184	16,021
"Development Models and Pathways for 'AI + New Engineering' in Innovation and	Xu Tao	Journal of Distance Education	2018	Tongji University	172	7,371

Entrepreneurship Education"	

Source: compiled by the authors based on Yang (2024).

An analysis of Table 1 indicates that Chinese scholars demonstrate the highest level of engagement with AI implementation in higher education. Since 2018, increasing attention has been directed towards individual AI-based tools. A noticeable increase in citations and downloads occurred in 2019. This growth coincided with the COVID-19 pandemic and the need to transform traditional educational models. This body of research offers valuable insights for adapting AI integration strategies in the Kyrgyz Republic.

AI-based tools used in higher education vary considerably and should be selected according to specific educational objectives. A comparative overview of the tools examined in this study is provided in Table 2.

Table (2). AI-based tools applied in higher education

No.	Tool	Description	Advantages	Limitations
1	Turnitin	A machine learning-based tool that detects matches between a submitted text and previously published online content	Facilitates rapid identification of borrowed content and sources, promoting academic integrity	Does not always accurately distinguish between plagiarism and legitimate citation; may create an atmosphere of distrust between instructors and students
2	Question mark	A platform for designing, delivering, and analysing certification assessments	Employs AI to support student-centred learning; provides diverse tools for instruction and objective assessment	Requires additional training for instructors; lacks adaptability to students' individual needs
3	Gradescope	Assesses students' written work, including similarity checks against existing online content	Recognises handwritten texts; automated grading allows instructors to focus on personalised feedback	Limited in assessing critical thinking, creativity, and nuanced responses; matched content is automatically flagged as plagiarism
4	Blackboard Learn	A virtual learning environment and learning management system developed by Blackboard, Inc.	User-friendly interface; built-in course design tool with generative AI capabilities	Courses must be built from scratch; lacks support for multi-branch design; limited automation features
5	MetaCOG	An interactive tool that visualises students' perceptions of planning, organisation, and memory strategies	Simple interface; diverse tools for planning the learning process	High cost (USD 350)
6	DALL·E	An AI system that generates realistic images from natural language descriptions	Supports various styles; offers editing functions; output images are copyright-free and largely accessible (50 free generations in the first month, 15 in subsequent months)	Better suited for surrealistic than photorealistic imagery; only supports English prompts; commercial use may involve copyright risks

7	Midjourney	Generates images and videos from text prompts	High image quality; large community gallery; fast generation speed	Fully paid service with no free trial; limited video generation capabilities; minimal user support
8	Adobe Firefly	Text-to-image generation integrated within the Adobe ecosystem	Intuitive interface; full integration with Adobe Creative Cloud; collaboration features; copyright-free outputs; includes free access tiers	Limited model range; image quality lower compared to some alternatives
9	Craiyon	Transforms text into images	Completely free with an intuitive interface; unlimited generations	Low image quality; contains extensive advertising
10	Runway	AI platform for generating and editing images and videos from text input	Interactive interface; comprehensive video editing and generation features; offers models for diverse user types	Operates exclusively online; image quality lower than some competitors

Source: compiled by the authors.

Based on Table 2, specialised AI-based tools such as DALL-E, MidJourney, and Runway play a key role in art and design education by enabling text-to-content generation. Early systems like AARON, developed by Harold Cohen, demonstrated collaborative human–AI creativity, which is particularly relevant for the development of experimental skills. AI also supports interactive art practices, as seen in works by Rafael Lozano-Hemmer and Memo Akten. Educational technologies range from basic platforms, such as Canva and Figma, to more advanced systems, including Artbreeder. Together, these platforms support both creativity and collaboration. The selection of appropriate technologies depends on educational goals, institutional policies, and available resources, particularly given cost limitations (Akhmetova et al., 2026; Bondarenko et al., 2022). These AI-based technologies not only foster creativity but also enhance essential competences in art and design education, such as visual literacy, concept creation, prototyping, and reflective design practice. They specifically empower students to interpret and produce visual information more efficiently, assist in the iterative development of artistic concepts from initial ideas to polished results, enable swift digital prototyping and experimentation, and promote reflective assessment of creative choices during the design process. Overall, the use of AI may enhance learning outcomes and institutional competitiveness, but it requires careful selection based on pedagogical and ethical criteria.

3.2 Artificial intelligence in higher education in China and Kyrgyzstan

The fourteen interview questions were grouped into four semantic categories, as shown in Table 3. This categorization was designed to gain a deeper understanding of the use of AI in higher education. Specifically, it aimed to identify educators' general awareness of AI, examine the tools used in art and design instruction, analyse the impact of AI on the quality of education, and explore strategies for addressing controversial issues associated with AI use.

Table (3). Interview questions

No.	Semantic group	Questions
1	General awareness	"Are you familiar with the concept of artificial intelligence (AI)?"; "Do you use AI in your teaching practice, and for what purposes?"; "Does your university administration support the use of AI in the educational process?"
2	Specific tools	"Which AI-based tools do you most frequently use in your professional activities?"; "What criteria do you use when selecting AI-based tools?"; "What, in your opinion, indicates effective use of AI in education?"
3	Impact of AI on teaching and learning	"When did you start using AI-based tools in your practice?"; "What motivated your decision to incorporate AI into your teaching?"; "How would you evaluate the impact of AI on your teaching?"; "How would you assess the impact of AI on students' academic performance?"; "In your opinion, should your institution promote the integration of AI into the educational process? If yes, in what ways?"
4	Controversial issues and possible solutions	"What do you see as the potential risks of using AI in education?"; "Can AI replace live interaction between teacher and student?"; "Does the use of AI in the arts potentially violate copyright laws?"

Source: compiled by the authors

Based on the analysis of respondents' answers, several semantic codes and themes were identified to facilitate a deeper understanding of AI use in higher education. The coding process involved iterative thematic analysis, wherein interview transcripts were initially reviewed, meaning units were extracted, categorised into preliminary codes, and subsequently organised into overarching thematic categories based on conceptual similarity and recurrence across responses. The key codes and their associated themes are presented in Table 4.

Table (4). Semantic analysis of the interview

No.	Theme	Codes
1	Artificial intelligence as a response to 21st century challenges	"globalisation"; "COVID-19 pandemic"; "distance learning"; "studying abroad"; "social inequality"
2	AI-based tools	"automated assessment"; "chatbots"; "technical support"; "plagiarism detection"; "big data processing"; "identifying knowledge gaps"
3	Advantages of AI	"personalised learning"; "educational accessibility"; "individual learning paths"; "clear planning"
4	Challenges of AI	"data privacy"; "copyright"; "plagiarism"; "unequal access to educational opportunities"
5	Integration of AI into higher education	"investment"; "subsidisation"; "interdisciplinary collaboration"

Source: compiled by the authors.

A key theme identified in the interviews was the use of AI as a response to major contemporary transformations in education. The respondent from the Chinese University of Hong Kong Shenzhen highlighted that interest in AI-based tools intensified in 2019 during the COVID-19 pandemic, when institutions were required to rapidly transition to online learning and remote work. As a result, such systems played a crucial role in ensuring continuity of the educational process (Interview 2).

The representative from Kyrgyz State University named after I. Arabaev emphasised that the relevance of AI persists beyond the pandemic. According to the interviewee, institutional support for AI integration is

linked to its capacity to facilitate international academic collaboration, enable continuous knowledge exchange, and improve educational quality. Furthermore, rapid access to learning resources was identified as an important factor supporting students' academic development (Interview 3).

The second theme identified across all interviews concerned the application of AI-based tools in higher education, including art and design training. Comparative analysis revealed that representatives of Chinese universities reported a broader and more intensive use of AI-based tools than their Kyrgyz counterparts. In China, AI was applied to plagiarism detection, automated assessment, development of individualised tasks, and the creation of graphic and video content. In contrast, in Kyrgyzstan, its use was largely limited to plagiarism checking and preparation of instructional materials. Significantly, interview data reveal that AI tools enhance not only creativity but also the cultivation of visual literacy, concept formulation, prototyping, and reflective design practice, especially through the iterative generation and assessment of visual outputs.

A further important theme involved the advantages of AI integration. A respondent from Jilin University emphasised time efficiency as a key benefit, noting that tools such as Grammarly, Turnitin, and Gradescope significantly reduce the workload associated with grading. This enables educators to focus on monitoring student progress and designing individual learning trajectories, while also improving the objectivity and consistency of assessment (Interview 1). The respondent from Kyrgyz State University named after I. Arabaev noted that AI benefits both teachers and students, primarily through faster access to information, which improves the speed and quality of task completion (Interview 3). However, excessive reliance on AI may weaken critical thinking skills. Therefore, students should be taught algorithmic principles and encouraged to verify AI-generated outputs carefully, as inaccuracies may occur.

The representative from Jilin University identified authorship as a major concern, emphasising the difficulty of distinguishing between student work and AI-generated content. This complicates the assessment of individual effort and raises questions about the educational value of such assignments (Interview 1). The participant from the Chinese University of Hong Kong Shenzhen highlighted the high cost of AI-based tools as a factor contributing to inequality in access. Many graphic AI platforms operate on a freemium model, offering limited free use before requiring paid subscriptions (Kullolli, 2024). Consequently, although individual subscriptions may be affordable, the cumulative cost of multiple platforms can create a significant financial burden for students and institutions (Interview 2).

According to the interviewees, addressing these issues requires the implementation of comprehensive strategies for AI integration in higher education. These include increasing awareness of AI capabilities, promoting interdisciplinary collaboration, and securing funding for AI-based educational programmes, particularly in art and design. Based on these findings, the interview data were synthesised into a set of practical strategies for integrating AI into the educational process.

3.3 AI implementation strategies in education

Based on the interview findings, a four-step framework for implementing such technologies in higher education, including art and design training, was developed. The model comprises interconnected stages:

raising awareness of their potential applications, preparing educators and students for their use, integrating them into teaching and learning practices, and conducting continuous evaluation to identify and address emerging issues. The proposed framework is presented in Figure 1.

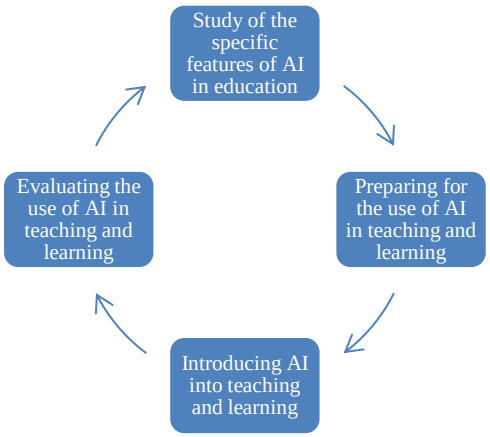


Figure (1). Implementation of AI in higher education

Source: compiled by the authors.

The first stage of the model addresses understanding their application and overcoming misconceptions. Interview data show that stakeholders often associate such technologies with reduced quality and plagiarism, largely due to confusion between their supportive and substitutive roles. Concerns about replacing teachers persist (Ruggieri et al., 2018; 2020). However, respondents emphasised that in fields such as art and design, expert feedback and contextual interpretation remain irreplaceable. These misconceptions act as barriers to effective AI integration. Therefore, addressing them requires systematic research and wider dissemination of research findings. While this area is well developed in the Chinese academic context, it remains fragmented in the Kyrgyz Republic due to the lack of a comprehensive strategy. As a result, institutional readiness for the effective use of such technologies remains limited.

International professional collaboration also plays a key role (Dyomin et al., 2021; Guseinov & Mamedov, 2011). Interview data indicate that internships in Chinese universities were considered a potential mechanism for providing Kyrgyz educators with practical experience in implementation processes, facilitating knowledge transfer and a deeper understanding of current practices. Such initiatives are particularly relevant at the stage of preparing educators for adoption. Preparation for their use includes familiarising teachers and students with AI-based tools such as Blackboard Learn through video tutorials and written guides, especially for complex platforms. Chinese respondents highlighted short, modular integration programmes combining instruction, testing, and practical tasks. However, their implementation outside paid working hours may reduce participant motivation.

Effective AI implementation also requires reliable technical support (Porkodi & Raman, 2025; Seidaliyeva & Smailov, 2025). In Chinese universities, system administrators ensure rapid response and coordination with providers, whereas at Kyrgyz State University named after I. Arabaev support remains less integrated. This leads to slower processing.

Evaluation of their use should integrate quantitative metrics (e.g., usage frequency, number of tools) with qualitative methods such as observations, interviews, and focus groups to ensure a comprehensive assessment. Overall, the use of such technologies may enhance learning outcomes and institutional effectiveness, but it requires careful selection based on pedagogical and ethical criteria.

4 DISCUSSION

The findings were consistent with prior research on the relationship between educators and AI, particularly rejecting the notion of direct competition. Interview data indicate that most respondents view such systems as dependent on human input rather than an autonomous substitute. This perspective is consistent with Alkan (2024), who conceptualises AI as a system simulating human cognitive functions, and Brusilovsky (2023), who emphasises the central role of educators in selecting and applying such systems according to students' needs. Overall, the results reinforce the argument that AI cannot replace human teaching, but instead functions as a supportive instrument. This misconception appears more persistent in contexts where institutional frameworks for AI integration remain underdeveloped.

The findings are also consistent with prior research emphasising the advantages of AI in education, particularly its capacity to enhance quality and promote student-centred learning. Previous studies indicate that AI supports the modernisation of higher education (Allam et al., 2023), enables rapid knowledge accumulation (Nykonenko, 2023), and provides broad access to information, facilitating faster task completion and personalised learning (Baidya and Kumar, 2024). Empirical evidence also shows strong student motivation to use AI-based tools and highlights the importance of teacher training for effective integration (Sămărescu et al., 2024).

At the same time, the implementation of such systems is constrained by structural and institutional barriers, as noted both in this study and in earlier research (Allam et al., 2023). These dynamics reflect uneven patterns of technological development, characterised by cycles of growth and decline (Groumpos, 2023). In this context, China represents a phase of active expansion, while Kyrgyzstan demonstrates readiness for adoption but remains limited by resource constraints.

Goi et al. (2024) identified financial constraints as a key barrier to large-scale AI adoption, with correlation analysis showing a link between GDP and readiness for implementation. This supports the finding that the cost of AI-based tools can increase inequality in higher education. Other studies emphasise that effective AI integration requires coordinated efforts among governments, institutions, and stakeholders, which explains differing adoption levels across contexts. Concerns about information quality also remain significant. Prior research highlights risks related to inaccurate or misleading AI-generated content. Therefore, there is a need for verification and a balanced approach to integration.

The findings have significant consequences for authorship, originality, and evaluation processes in creative fields including art and design education. Interview results indicate that the rising prevalence of AI-generated content complicates the attribution of individual creative contributions, rendering it challenging to differentiate between student-authored work and AI-assisted outputs. This prompts apprehensions regarding the legitimacy of originality as a fundamental assessment criterion, especially

in situations where iterative ideation and visual creation are partially or entirely facilitated by AI techniques. Consequently, assessment methodologies may require a transition from product-centric evaluation to process-focused criteria that prioritise conceptual advancement, decision-making, and reflective rationalisation of design decisions.

The effectiveness of proposed strategies was further supported by prior studies, which underline the importance of practical skills, theoretical knowledge, and stakeholder preparation. Evidence also confirms that teacher training and active research increase awareness and reduce resistance, thereby validating the methodological soundness of the proposed model.

5 CONCLUSIONS

This study analysed AI use in higher education, focusing on art and design training in China and Kyrgyzstan. China demonstrates more advanced infrastructure and broader experience, with widespread use of tools such as Turnitin, DALL·E, Blackboard Learn, Gradescope, and Runway, supporting personalised learning and improved educational quality. In Kyrgyzstan, adoption remains at an early stage but shows potential due to institutional support. Interview findings confirm that such systems enhance accessibility, efficiency, and the development of creative and critical skills. However, several barriers persist, including limited awareness, high costs, and uneven technological development. The study proposes strategies such as interdisciplinary collaboration, targeted training, and continuous evaluation.

The results possess direct educational consequences for curriculum development, educator training, and institutional policy. AI-related competencies should be progressively incorporated into art and design curricula, emphasising both technical skills and critical assessment of AI-generated results. Professional development programs for teacher training should encompass practical workshops focused on the pedagogical application of AI technologies, ethical considerations, and evaluation methodologies within AI-enhanced learning settings. Institutional policies must facilitate systematic AI integration via funding, technical infrastructure, and explicit norms for academic integrity and authorship in AI-assisted endeavours.

The research is limited by a small interview sample, a focus on only two countries, and concentration on art and design-related applications. Additionally, the use of 2024 data may not fully reflect rapid technological change. Future studies should expand the geographical scope, increase sample size, and examine long-term implications of such technologies, including ethical considerations. This study should be seen as an exploratory experiment that establishes a preliminary analytical framework for comprehending AI integration in art and design education, rather than facilitating extensive generalisations. Nonetheless, it provides a basis for additional extensive empirical investigation in this domain.

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