Curriculum and Teaching Methodology (2025)
Clausius Scientific Press, Canada

DOI: 10.23977/curtm.2025.080425
ISSN 2616-2261 Vol. 8 Num. 4

AI-Assisted Innovation in the Educational Paradigm of "New Media Animation Creativity and Design" Course

Jing Zhu[1,a,*], Song Jin[2,b]

[1]College of Art & Design, Nanning University, Nanning, 530299, Guangxi, China
[2]Institute of Economics and Management, Kyrgyz State University Named after I. Arabaev, Bishkek, 720001, Kyrgyz Republic
[a]zhujingwangrui@outlook.com, [b]songjin@bu.edu
**Corresponding author: zhujingwangrui@outlook.com*

Keywords: AI Assists, Educational Paradigm, New Media Animation Creativity and Design

Abstract: In the era of continuous iterative development of artificial intelligence, it brings development and transformation to all walks of life. The animation industry has undergone significant changes empowered by artificial intelligence. The production efficiency of traditional animation has been greatly enhanced with the help of artificial intelligence. In terms of animation scripts, character and scene design, through the construction of artificial intelligence text-to-image and image-to-image models, a large number of character and scene design images can be generated in a short time for creators to choose from. While artificial intelligence empowers animation creation, it also brings certain problems. Currently, there are two major gaps in AI animation education: On the one hand, teaching in colleges and universities generally remains at the level of basic tool operation, lacking systematic integration of industrial-level workflows; On the other hand, the "innovation methodology" that emerged in industry practice failed to be promptly transformed into teaching resources. This paper analyzes representative cases and combines the educational reform practices of institutions such as Shenzhen University and Hubei Institute of Fine Arts to construct a three-in-one teaching framework of "technology integration - creation empowerment - case teaching", and proposes an educational paradigm innovation path of "taking cases as a bridge to connect the industry-university-research ecosystem", providing animation creation talents adapted to the AI era for new media animation education.

1. Introduction

The Inevitability of AI Technology Reshaping the Animation Industry and Educational Transformation. Amid the explosive growth of the digital media industry, the global animation market size has exceeded 250 billion yuan, and the rapid development of generative AI technology is profoundly reconfiguring the entire process of animation creation. According to the 2025 "Digital Content Industry White Paper", over 78% of animation studios have introduced AI tools in the early design stage, increasing the efficiency of character design and scene concept design by more than 50%. Under the background of this technological revolution, traditional animation education is

facing fundamental challenges. "The deconstruction of the creative process" and "the reconstruction of the talent ability model" have become unavoidable propositions. The case-based teaching mode can visually present the application value of AI tools in real projects and become a key bridge connecting technological changes and educational innovation.

2. Key Technical Tools and Teaching Integration Paths

2.1 Generative AI Tools and Innovations in Their Creative Paradigms

The current AI tools in the field of animation creation have formed a multi-level ecosystem, completely transforming the traditional workflow. Table 1, in the concept generation stage, the ability of "MidJourney" and "Stable Diffusion" to generate visual content through text descriptions is particularly prominent. Take the Terracotta Army as an example [1]. In 2023, a sophomore student from the Guangzhou Academy of Fine Arts participated in the AI creation competition with an outstanding work, the "Cyberpunk Terracotta Army" collectible blind box, which used AI-generated images of the Terracotta Army as the IP for the product design. There is also the use of AI large model text, image and video tools to generate short video animations called "The Terracotta Army's Working Story", using the Terracotta Army as the characters for video production and placing them in modern life scenes for video production. The use of AI model tools integrates scenes from different dimensions and eras, making seemingly impossible scenes come true. This kind of video work with a sense of time travel benefits from the use of AI model tools [2].

In the field of animation production, tool innovation is equally remarkable. ControlNet technology solves the problem of uncontrollable generated content through multi-dimensional control such as line drawings and depth maps. In the character personification project of "Love & Producer", the domestic team combined the LoRA model of the characters with the edge detection function of Control Net to accurately restore the three-dimensional form of the 2D characters, turning the character features and painting risk control into independently manageable digital assets. This technical approach offers brand-new possibilities for stylized creation and teaching in animation education [3].

Table 1: Teaching Application Matrix of AI Animation Tools

Tool type	Representative platform	Teaching application scenarios	Ability cultivation objective
Concept generation	MidJourney, Stable Diffusion	Character design, scene concept, and atmosphere picture creation	Visual imagination, prompt word engineering
Dynamic control	ControlNet, RunwayML	Storyboard generation and motion capture data enhancement	Understanding of motion laws and timing control
Three-dimensional generation	Blender+AI, UE5 MetaHuman	Character binding, scene construction, real-time rendering	Three-dimensional spatial thinking and interaction logic
Post-optimization	Topaz Video AI, Adobe Firefly	Resolution enhancement, stylized special effects, and automatic editing	Aesthetic judgment and effect control

2.2 Phased Paths for Teaching Integration

The School of Communication of Shenzhen University adopts a more in-depth teaching method

driven by real projects. Its Network and New Media major integrates the entire process of AIGC technology into the graduation project: in the early stage, ChatGPT is used to generate a draft of the world view, and MidJourney outputs visual keywords. In the middle stage, dynamic storyboards are generated through RunwayML. Later, the immersive experience development was completed in combination with Unreal Engine 5. This collaborative model of "human creativity leading and AI efficient execution" enables works such as "Dunhuang Lingjing" to reconstruct the three-dimensional scene of the Mogao Caves through NeRF technology and restore the colors of the murals using ML algorithms. Eventually, it was included in the digital exhibition hall of the Dunhuang Academy.

The "Tao Tao Ni" project of Shenzhen University has demonstrated the astonishing potential of AI animation in revitalizing intangible cultural heritage. This project has built a complete digital communication ecosystem around the national intangible cultural heritage "Shiwan Pottery Sculpture Skills". In the early stage, use MidJourney to generate IP characters with ceramic textures; In the middle stage, five animated short films will be produced through RunwayML to tell the historical stories of pottery art. In the later stage, short video dissemination and cultural and creative charity sales will be combined to form a sustainable cultural dissemination closed loop. The most innovative aspect of the project is its "catching-style inheritance" strategy - transforming the traditional processes of shaping, glazing and firing into character growth plots, allowing young viewers to naturally absorb cultural knowledge while following the latest updates. The team also collaborated with the Shiwan Ceramics Museum to develop AIGC training courses, empowering intangible cultural heritage inheritors to master digital narrative skills. This trinity model of "cultural IP + AI animation + commercial closed loop" provides a brand-new paradigm for traditional culture education. The related methodology has been incorporated into the "Digitalization of Intangible Cultural Heritage" course module of many colleges and universities in Guangdong.

3. Construction of the Innovative Model of "AI+ Case Teaching"

3.1 "Intelligent evaluation + personalized cultivation" helps improve the quality and efficiency of teaching

The "AI Aesthetic Education System" is developed based on a domestic digital technology platform. Relying on the digital art creation advantages and technological accumulation of the Film and Animation College of Hubei Institute of Fine Arts, it integrates the rich teaching experience of the School of Performance of Shanghai Film Art University and the motion capture technology of Shanghai Qingtong Vision, and builds an intelligent teaching matrix of "fashion show - opera inheritance - dance art". In the dance module, the system generates multi-dimensional assessment reports by digitally recording and comparing students' movements, and builds individualized portraits in combination with learning trajectories to tailor training plans for each student. The teaching innovation of this case lies in solving the century-old problem of tacit knowledge transmission. In traditional art education, tacit knowledge such as body language and expression management, which relied on the "master-apprentice" experience, has now been made explicit and standardized through the movement trajectory analysis and micro-expression capture of AI systems. For instance, in the teaching of body movements in traditional Chinese opera, the system can break down the classic movements in Mei Lanfang's "Drunk Concubine" into 26 key bone point displacement data, enabling students to obtain precise quantitative feedback. This project was selected as a typical case of digitalization by the Education Department of Hubei Province, and its methodology of "visualizing tacit knowledge through technology" is being promoted in art colleges and universities across the country [4].

Table 2, the system innovatively integrates motion capture, real-time evaluation and multi-functional performance equipment, which can digitally record and archive performance movements, effectively solving the problem of difficult preservation and reproduction of tacit knowledge in art inheritance, and promoting the interconnection and efficient operation of art education resources. Through quantitative analysis of multi-dimensional data, an assessment report is generated, and a student profile is constructed in combination with the learning trajectory to tailor a personalized training plan for each student. At present, the pilot program of the dance module has achieved remarkable results, significantly enhancing the interactive experience and teaching accuracy of fashion show instruction, and providing a replicable practical example for the digital transformation of art education [5].

Table 2: Four-dimensional Analysis Framework for AI Animation Case Teaching

Case type	Core issue	Highlights of AI Applications	Teaching value points
Business efficiency type	Cycle compression and cost control	Hierarchical generation and intelligent extension	Project management and risk response
Cultural inheritance type	The revitalization and dissemination of traditional skills	Texture generation, IP development	Cultural translation and digital curation
Education empowerment type	Tacit knowledge transmission	Action quantification and real-time feedback	Teach students in accordance with their aptitudes and provide precise instruction
Social intervention type	Public behavior guidance	Game mechanics and emotional design	Social design, change theory

3.2 Three-stage progressive curriculum framework

Based on cutting-edge practices, a three-stage teaching model of "cognition - practice - critical thinking" is constructed, taking the author's use of AI model tools for the production of the public welfare animation "Environmental Protection Popular Science" as a case.

Basic cognition stage: Use AI model tools such as Doubao, Wenxin Yiyan, and DeepsSeek to create animation scripts. Correct the completed public welfare animation script of "Environmental Science Popularization", and make adjustments to the inappropriate expressions and non-compliance with social requirements in the script [6].

Technical practice stage: Use the generated script to design characters and scenes. Use AI model tools such as MidJourney and Stable Diffusion for text-to-image and image-to-image character and scene design, and generate character and scene design diagrams based on the content of the public welfare animation script of "Environmental Science Popularization". Since the character and scene design drawings generated by AI model tools cannot be perfect, image processing tools are needed to conduct secondary processing on the generated images to achieve the preset ideal values. Import the designed characters and scene pictures of the public welfare animation "Environmental Protection Science Popularization" into the Jimeng AI model tool to generate the animation video. The generated video is then placed in the video editing or PR software for video editing and dubbing, and finally the sound effects are synthesized. The entire public welfare animation "Environmental Protection Science Popularization" was produced 70% relying on AI model tools.

Ethical speculation level: In response to the phenomenon that over 50% of the teaching process

relies on AI model tools, disputes regarding copyright and style plagiarism should be considered. Intellectual property rights and plagiarism risk analysis and evaluation should be integrated into teaching. Students are required to analyze controversial cases of copyright and style plagiarism involving generation tools such as DeepSeek, write an "AI Animation Ethics Guide", and especially incorporate a moral impact assessment step in their graduation projects or business case applications.

4. Practical Challenges and Solutions

4.1 The contradiction between technological iteration and lagging teaching

The technological iteration cycle in the animation industry has been shortened to six months, while the update of traditional teaching materials takes more than three years. This has led to a serious disconnection in teaching content. The disconnection between teaching and social development has seriously hindered students' knowledge progress and development.

Teachers need to constantly update their knowledge and learn new skills. On the one hand, delve into animation enterprises to learn the latest production techniques of animation companies; On the other hand, constantly learn AI model tools and master new artificial intelligence skills to apply in the field of animation production. Teaching resources need to be updated in real time.

Build a dynamic knowledge base: Establish an open-source teaching resource platform to aggregate cutting-edge contents such as ControlNet plugin development tutorials and Stable Diffusion V3 operation guides. The "version-based manual" course management is adopted, which is compiled in the form of school-based textbooks or practical training manuals, in combination with the characteristics of the school and students. This can ensure that the content of cases and tools is updated every semester. We have signed educational agreements with enterprises such as Adobe and Autodesk to ensure that students can obtain the testing rights of unreleased tools like Firefly and RunwayML in advance. Through this mechanism, Shenzhen University enables students to be exposed to the Pika video generation model four months earlier than the public, maintaining its technological frontier.

4.2 The Paradox of Creativity Cultivation and Tool Dependence

As the technical threshold for AI model tools has been lowered, "AI homogenization" has become a prominent risk. When students use AI model tools to create animation works, they lack in-depth thinking and are prone to fall into the trap of templating. In the reverse teaching design of the "Ink-wash Animation Creation" project, students are required to first hand-draw key frames, and then use AI to generate intermediate frames and compare the differences. By analyzing the blank space treatment in the social media animation of "Linglong", understand the humanistic artistic conception that AI cannot reach.

The hybrid creation process, "animation production +AI style conversion", involves trying out different artistic effects through the conversion of AI model tools after the animation is completed, and ultimately determining the artistic style suitable for the animation requirements. This "animation production +AI style conversion" enables one to try out various animation styles at a low cost, find the artistic style that suits the needs of animation, and this hybrid creation form can retain the content of the script and the prototypes of character and scene designs [7].

4.3 Ethics and copyright risk management

The legal gray areas in terms of copyright ownership and style imitation of AI-generated content

urgently need to be regulated. Table 3, in educational practice, an ethical assessment matrix needs to be established: checklists should be set up at each node of the project, such as the legality review of the dataset (whether it contains the styles of unauthorized artists), the screening of output content (eliminating prejudice and violence), the copyright registration process, and whether there are radical elements of political ideology, etc. The source of the AI-generated element annotation tool. The hand-drawn part retains full copyright. Technology Utilization Convention: Establish the "Classroom AI Usage Code", explicitly prohibiting the direct generation of final works and requiring all AI outputs to undergo substantial modifications. For instance, Hubei Institute of Fine Arts stipulates that the proportion of AI-assisted content should not exceed 40%, and the core creative elements need to be completed manually.

Table 3: Risk Prevention and Control System for AI Animation Education

Risk type	Typical case	Coping strategy	Teaching intervention point
Copyright dispute	Imitating the style of an artist without authorization	Dataset cleaning and style fusion detection	Intellectual Property Law Module
Weakened creativity	Works are templated and homogenized	Hand-drawn -AI comparison and analysis, limited usage ratio	Course on the History of Eastern and Western Aesthetics
Technical dependence	Degradation of basic skills	There is no AI Week challenge or traditional technique assessment	Basic Styling Training Camp
Ethical misconduct	Generate biased content	Ethical review list, multicultural input	Seminar on Science and Technology Ethics

5. Conclusion

Move towards a new paradigm of animation education featuring human-machine collaboration. AI technology is not a substitute for animation creativity, but a catalyst for the extension of thinking. From the efficient output of Tencent Animation to the cultural innovation of Shenzhen University's graduation project, from the precise teaching of Hubei Institute of Fine Arts to the step-by-step cultivation of Hong Kong secondary schools, all these confirm the eternal value of "technology as the medium and humanity as the soul". The core competitiveness of future animation education will be reflected in the ability to achieve creative expression by mastering AI tools and the wisdom of adhering to humanistic spirit in human-machine collaboration.

Educators should construct a "double helix capability model" : one pole is technical acuity, understanding the characteristics of algorithms, mastering the iterative trends of tools, and possessing data literacy; The other aspect is the depth of humanistic depth, which involves delving deeply into cultural heritage, cultivating critical thinking, and shaping aesthetic judgment. Only when these two extremes support each other can a compound creator like the team of "Dunhuang Lingjing" be cultivated, who is proficient in NeRF 3D reconstruction technology and deeply understands the artistic spirit of Dunhuang.

With the 2025 World Digital Education Conference promoting the deep integration of AI and education, China's animation education is presented with a historic opportunity. Animation education needs to proactively embrace three major changes: the dynamic curriculum system and the establishment of agile and updated modular courses; Cross-border integration of resource capabilities, cultivating a mentor team with both artistic accomplishment and technical sensitivity; The evaluation criteria are diversified, breaking the sole focus on technology, and establishing a

comprehensive assessment matrix covering creativity, ethics, and cultural values. Only in this way can we adhere to the essence of education in the technological frenzy and cultivate reformers who will lead the new era of "Made in China" animation.

Acknowledgement

In 2023, I am in charge of the first-class core course of higher vocational education in Anhui Province, "3D Design and Production" (Project Number: 2023hxkc174).

References

[1] Yan Lijie. TSV Integration: Practical Exploration of AI-Empowered High-Quality Development of Music Teaching - Taking the Jingmai Style Music Classroom as an Example [J]. Forum on Educational Science, 2025(04):14-17.
[2] Zhang Shu. The Current Application Status and Optimization Strategies of Artificial Intelligence in Music Education [J]. Journal of Wuhu Polytechnic, 2024,26 (02):80-82.
[3] Yan Lijie. Practice of Contextual Music Classroom Teaching under the Background of Aesthetic Education Infiltration [J]. Forum on Educational Science, 2024(08):23-26.
[4] Li Zhimin. How Artificial Intelligence Empowers Education[J]. China Education Informationization, 2024, 30(9):3-8.
[5] Sang Yuanyuan. A Case Study on the Teaching of AIGC Digital Innovation AI Painting Elective Course [J]. Modern Educational Equipment in China, 2025, (02):5-8.
[6] Yang Heng. Research on the Teaching Reform Path of "AI+ Intangible Cultural Heritage" in Higher Vocational Animation Major [J]. Da Guan, 2024 (11):124-126.
[7] Wu Xuehua, Yang Tongming. Case Analysis of Ethnic Traditional Craft Color Teaching Based on AI+VR Technology [J]. Color, 2025 (01):103-105.