

# AI Empowering College Art Courses from the Perspective of Personalized Education Research on the Innovative Path and Practical Effectiveness of Film and Drama Major

—Taking Film and Drama Major as an Example

Sensen Zhang<sup>1</sup>, Guili Zhang<sup>2\*</sup>, Qian Wang<sup>3</sup>

<sup>1</sup>School of Art, Southwest Petroleum University, Chengdu, China

<sup>2</sup>Network and Information Center, Southwest Petroleum University, Chengdu, China

<sup>3</sup>Xiangcheng Primary School, Xindu District, Chengdu, China

Email: 1079946102@qq.com, \*zhgl@swpu.edu.cn, 1126845725@qq.com

**How to cite this paper:** Zhang, S.S., Zhang, G.L. and Wang, Q. (2026) AI Empowering College Art Courses from the Perspective of Personalized Education Research on the Innovative Path and Practical Effectiveness of Film and Drama Major. *Journal of Computer and Communications*, 14, 201-210. <https://doi.org/10.4236/jcc.2026.144010>

**Received:** March 21, 2026

**Accepted:** April 25, 2026

**Published:** April 28, 2026

Copyright © 2026 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

## Abstract

This paper, from the perspective of personalized education, takes film and drama as an example to explore the innovative application and practical effectiveness of AI technology in college art courses. Through theoretical construction, model design, and empirical testing, the study constructs a personalized implementation framework of “three-dimensional ability profiling—intelligent resource adaptation—dynamic teaching intervention”, integrating multiple intelligences theory and constructivist learning theory. It relies on technologies such as virtual simulation environments, intelligent recommendation systems, and dynamic learning path adjustments to improve the accuracy of art teaching and the personalized level of student creation. Through comparative analysis of college courses, the study verifies the significant effectiveness of AI in resource matching, creative assistance, and teaching interaction, concluding that AI does not replace teachers but rather expands teaching methods. The future of art education should form a collaborative model of “professional guidance from teachers, assistance from AI technology, and student-led creation”.

## Keywords

Personalized Education, AI Empowerment, College Art Courses, Film and Drama Majors, Multiple Intelligences Theory

\*Corresponding author.

## 1. Introduction

### 1.1. Research Background

#### 1.1.1. Current Research Status

Generative artificial intelligence refers to the automated generation of various types of content, such as text, images, and videos, through artificial intelligence technologies such as generative adversarial networks and large-scale pre-trained models. Since the release of OpenAI's ChatGPT in 2022 and its rapid global popularity, various generative artificial intelligence products have emerged both domestically and internationally, such as DeepSeek, Doubao, and Tongyi Wanxiang in China. In recent years, the development and popularization of artificial intelligence has had a significant impact on the learning of college students. Students use AI tools to varying degrees when acquiring knowledge, solving problems, and completing assignments [1]. As a key pathway to cultivating innovative thinking and aesthetic ability, college art education is integrating with modern technology to improve teaching quality and student learning experience continuously. This study aims to explore the application of AI in college art courses to achieve personalized education and improve teaching effectiveness.

#### 1.1.2. Research Gaps

Existing research on personalized practice in "AI + Art Education" has four shortcomings: First, there is a mismatch between technology adaptation and artistic characteristics. AI's recognition of artistic styles mostly remains at the technical level, making it difficult to understand the creative emotions and cultural connotations. Second, the evaluation system for personalized teaching effectiveness is vague, lacking a unified scientific framework for quantifying the "formation of students' unique artistic styles". Third, there is a gap in human-machine collaboration between teachers and AI. Fourth, the intelligent integration and matching of art education resources are insufficient. AI resource classification relies on labeling, which cannot meet the needs of personalized recommendations across styles and cultures.

#### 1.1.3. Research Significance

First, it promotes innovation in art curriculum education in universities by combining AI with art education to promote the modernization of art education. Second, it creates a practical sample of AI-enabled personalized learning experiences by analyzing students' learning behaviors through AI to provide personalized resources and teaching paths. Third, it deepens the cultivation of the abilities of art students in universities by using AI to achieve intelligent recommendation of teaching resources and cultivate students' innovative, critical thinking, and self-learning abilities. Fourth, it explores future educational trends and provides a reference for the teaching reform of other disciplines, possessing both theoretical and practical value.

## 1.2. Literature Review

### 1.2.1. The Intrinsic Compatibility of Personalized Education and AI Technology

Salomon and Perkins have pointed out that the “cognitive outsourcing” of technology, without pedagogical guidance, may lead to the atrophy of “thinking muscles”. Personalized education, starting from individual student differences, breaks away from standardized teaching, which aligns with the emphasis on uniqueness and innovation in higher education arts education. AI technology, through data mining, intelligent recommendation, and scenario simulation, provides technical support for personalized education, building a bridge between “individual needs” and “educational supply”. For example, Wang Zhihua’s “Digital Empowerment of Personalized General Education Curriculum System Reform and Practice Research in Art Colleges—Taking University Computer Basic Courses as an Example” proposes a “digital empowerment of personalized general education” model. This model uses AI big data models to analyze the differences in professional needs of art students, breaking down the computer basic course into a “basic general education + professional customization” module [2]; Fu Lianqun’s “Personalized Application of AI Technology in User Experience Design Education and Exploration of the Path to Cultivating Students’ Innovation Ability” uses AI to track students’ design thinking trajectories and provides differentiated tasks for students at different levels of innovation ability, both demonstrating the “precise fit” between AI and personalized education.

### 1.2.2. Cross-Disciplinary Practical Experience of AI Empowering Education

The application of AI in the field of education has yielded multi-disciplinary exploration results, and its technical paths and practical models provide important references for the innovation of art courses in universities. In her research paper, “Exploration and Research on New Models of AI-Empowered Vocational College Education”, Wang Jingfeng proposed using AI to construct a closed loop of “student knowledge graph—career demand matching—dynamic adjustment of course content”. Her personalized recommendation system can push practical training resources based on students’ skill gaps [3]. Liu Qianqian, in her research paper, “Exploration of Innovation in College German Teaching Empowered by AI”, proposed “AI Personalized Path Planning”, which generates exclusive learning plans by analyzing student learning data, providing a reference for art courses [4]. In the field of general education and basic disciplines, Wang Zhihua, in her research paper, “Research on the Reform and Practice of Personalized General Education Curriculum System in Art Colleges Empowered by Digitalization—Taking University Computer Basic Courses as an Example”, used knowledge graphs to deconstruct general education courses in art colleges and combined AI to achieve tiered and categorized teaching.

### 1.2.3. Exploration of AI Applications in Art and Related Fields

The application of AI in art and related fields has demonstrated the effectiveness of personalized teaching, providing a direct example for innovation in college art

courses. Fu Lianqun and Zhu Guangrui constructed an “AI technology-assisted—teacher professional guidance—student creative leadership” model in user experience design education, increasing the award rate of works by 18.4%. This mechanism can be applied to art courses such as visual communication and product design [5]. Zeng Shiyu and Zhang Xiaoyuan, in “Research on Teaching Innovation of ‘News Interview and Writing’ Course in Colleges and Universities in the AIGC Era”, used AI to construct virtual interview scenarios to improve students’ practical abilities. They adopted a “virtual scenario—practice feedback” model to help students refine their personalized performance styles [6].

### **1.3. Research Innovation Points**

First, it promotes the reform of art teaching in colleges and universities, relying on AI to realize personalized learning path customization, intelligent teaching environment construction, and creative evaluation assistance; second, it creates an AI smart course display window, combined with online teaching platforms, AI teaching assistants provide 24-hour Q&A services, and reduce teachers’ pressure; third, it promotes the digital transformation and educational development of the new era, promotes the diversification of teaching, and improves teachers’ digital teaching capabilities and educational governance efficiency.

## **2. Theoretical Foundation**

### **2.1. Theory of Multiple Intelligences**

The theory of multiple intelligences was proposed by Howard Gardner, who believes that human intelligence encompasses multiple types. In art education, students’ artistic intelligence varies from person to person. It is necessary to abandon the “one-size-fits-all” teaching and customize programs according to students’ intellectual strengths, such as providing visual expression courses for students with strong spatial intelligence.

### **2.2. Constructivist Learning Theory**

Constructivist learning theory emphasizes learners’ active construction of knowledge. AI provides support for the implementation of this theory, such as virtual art creation labs that allow students to immerse themselves in artistic creation, and AI intelligent tutoring systems that provide personalized feedback and guidance based on student creation data.

### **2.3. Situated Learning Theory**

Situated learning theory was proposed by Leif and Wenger. Its core idea is that learning needs to be embedded in real or simulated practical situations, rather than isolated knowledge transmission. This theory believes that effective learning occurs in the interaction between learners and their environment and others. By participating in the “community of practice”, theoretical knowledge is transformed into practical application ability, and ultimately, professional competence is formed.

### 3. Innovative Strategies and Practices of AI-Empowered Art Courses

#### 3.1. Personalized Learning Path Design

##### 3.1.1. Characteristics of AI-Empowered Art Courses

1) Breaking the linear time learning model and improving personalized learning ability.

Utilizing AI technology to achieve ubiquitous art course learning can break time limitations and constraints, scientifically and rationally integrating students' fragmented time to improve learning content. In traditional art courses, teachers may repeatedly practice skills in the classroom to help students master various skills, but the students' mastery of skills is not ideal. In response to the uneven knowledge levels of students in traditional classrooms, the AI personalized learning model offers more flexible time and better aligns with the design of personalized learning paths, thereby improving the effectiveness of skill learning.

2) Transcending the limitations of learning space, individuality and art share the same origin.

In traditional art education, art students receive professional training through specialized curriculum systems while being nurtured by teachers, acquiring the corresponding skills to graduate smoothly and enter society. Nowadays, AI-powered personalized teaching transcends the limitations of the learning space, extending it infinitely beyond the campus. Students can use AI technology to achieve human-computer interaction and explore broader knowledge, thus achieving a shared origin of individuality and art.

3) Enriching teachers' teaching content and realizing the sharing of teaching resources.

AI-powered personalized teaching breaks through the limitations of teachers' single teaching content, extending teachers' knowledge and vision while providing students with more relevant professional knowledge and skills. Corresponding disciplines and course resources are shared, and teachers exchange ideas, making the teaching content richer and breaking the limitations of teachers' teaching content. This provides a rich source of art course content and realizes the sharing of teaching resources through platform resource sharing.

##### 3.1.2. AI Intelligent Resource Recommendation Mechanism

Based on the constructivist theory of "active knowledge construction", a three-level ladder-style intelligent recommendation system is constructed:

1) Basic ability foundation module: For students whose spatial perception ability assessment scores are lower than the baseline, the "Basic Lens Language" series of micro-courses integrating the national-level excellent MOOC content of Sichuan Normal University is pushed to strengthen their audiovisual language foundation.

2) Professional literacy expansion module: Relying on knowledge graph technology, professional case library resources such as "Analysis of Wiseman Documentary Style" are matched for students with high narrative ability assessment to

guide students to upgrade their creative thinking.

3) Creative tool empowerment module: Recommending AI storyboard generation tools and professional templates, such as Stable Diffusion and MJ, to learners with outstanding visual expression, helping to transform creativity efficiently.

Empirical research shows that the AI recommendation system of the course “Digital Photography Technology and Art” at Southwest Petroleum University has a resource matching accuracy rate that is 62% higher than that of the traditional model.

### **3.1.3. Dynamic Learning Plan Adjustment**

Taking the “Stage Lighting Design” course at Chengdu University of Technology as an example, the AI system dynamically adjusts teaching tasks based on students’ practical data: for students with weak technical skills, the training frequency of VR lighting simulators is increased to three times a week; advanced tasks such as “cross-scene lighting programming” are opened in advance for students with excellent creative performance, reflecting the constructivist “scaffolded teaching” concept and cultivating students’ self-learning ability(See **Figure 1**).

## **3.2. Practical Application of Intelligent Teaching Resources and Tools**

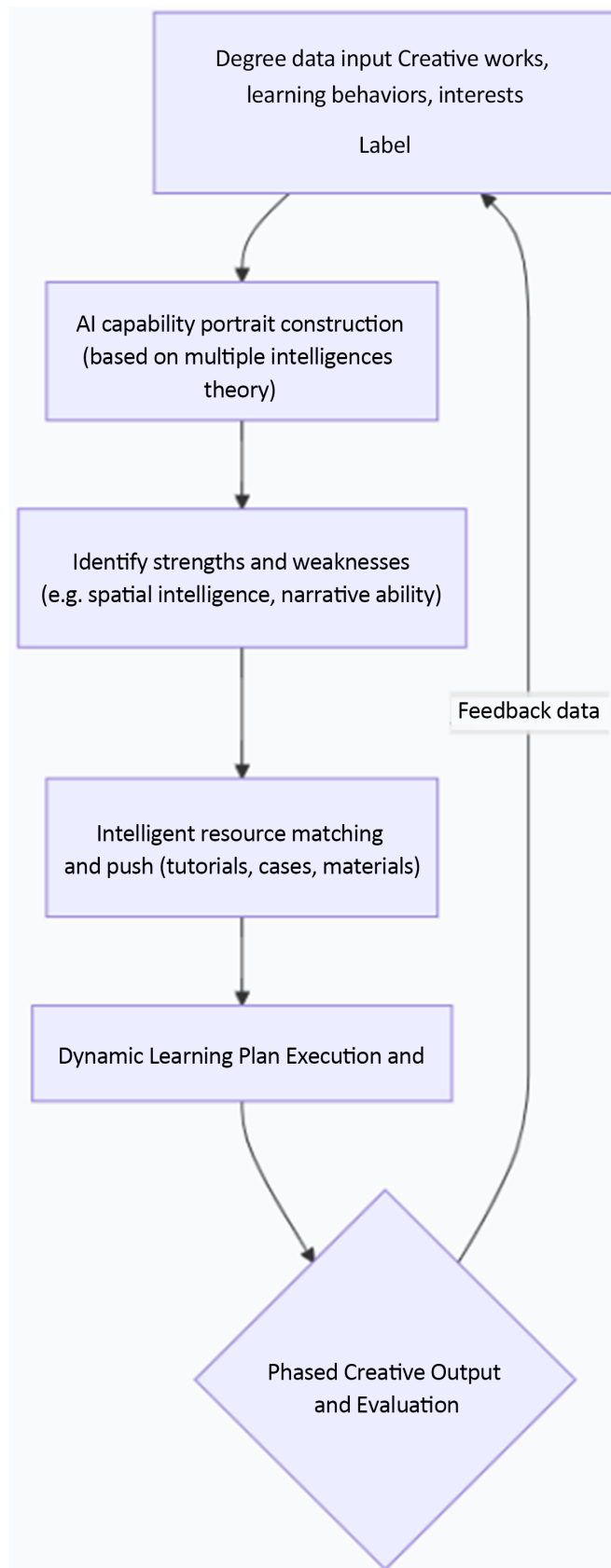
### **3.2.1. Virtual Simulation Creation Environment**

Taking the “Drama Stage Design” course at Sichuan Film and Television University as an empirical scenario, an immersive virtual simulation creation environment based on VR technology was constructed. In this environment, students use motion capture equipment to build stage scenery in real time in a virtual theater space. The AI system generates multi-dimensional lighting schemes in real time through algorithms and presents the enhancement effect of different lighting strategies on the actors’ emotional expression through parameterized adjustment. The system also integrates the Stanislavski performance system database and constructs a multimodal drama genre knowledge graph, thereby providing students with practical scenarios for building stage atmospheres across genres and styles.

### **3.2.2. AI-Assisted Creative Tools**

1) Style transfer tool: In the creation of the paper for the course “Film and Television Aesthetics”, students upload film and television analysis clips. AI style transfer technology can generate reconstructed versions of the stylistic features of directors such as Akira Kurosawa and Bergman, helping students understand the differences in the meaning of visual symbols in cross-cultural communication.

2) Intelligent error correction tool: In the practice of the course “Digital Photography Technology and Art”, the AI image analysis system can diagnose problems in students’ photographic works, such as identifying the problem of three-level underexposure of the face in a backlit scene. Based on Ansel Adams’ “zone method” theory, it can push suitable cases and technical solutions in a targeted manner to achieve accurate positioning of creative problems and intelligent matching of resources.



**Figure 1.** Closed-loop process of personalized learning path design.

### 3.3. Case Analysis of Teaching Practice

In teaching practice, the pain points of teaching or learning in different courses vary due to different situations. Therefore, the creation of each AI teaching intelligence is not a template copy and paste. Due to the differences in the work goals of the AI intelligence, the different learning paths, or the characteristics of the subject knowledge, a personalized practice path will be presented in the process of creating the learning process.

Case Selection and Implementation:

A comparative analysis of the practices of Sichuan Normal University and Beijing Normal University in AI-enabled art education (see **Table 1**):

**Table 1.** A comparative study of AI-enabled art education practices in two higher education institutions.

Comparison Dimensions	Sichuan Normal University	Beijing Normal University
Strategic Positioning	Focusing on the forefront of design disciplines, with the deep application of AIGC technology and the improvement of teachers' digital literacy as the dual cores	Building a comprehensive platform ecosystem, implementing the "1228" action plan, and promoting intelligent teaching reform across the university and multiple disciplines
Technical Path	Emphasizing the creative generation and practice of AIGC tools (such as Stable Diffusion) in specific design categories (visual communication, environmental design)	Focus on the research and popularization of platform tools such as knowledge graphs, AI teaching assistants, and virtual simulations to build a new paradigm of blended teaching
Course Model	Short-term, high-intensity workshops and training courses, such as AIGC training courses and AI smart curriculum construction workshops	Systematic and long-term intelligent course construction and large-scale virtual simulation experimental courses, such as the cross-university shared course "Appreciation of Image Art"
Teacher and Student Development	Focus on the cultivation of teachers' and students' practical skills in using AI tools and their "AI + design" thinking, with results reflected in improved design efficiency and innovative works	Emphasize the role of teachers in the curriculum designers, using AI tools to empower personalized cultivation and management of "one student, one plan"

### 4. Effect Evaluation

The evaluation is conducted from three levels: students, teaching, and innovation. At the student level, the focus is on the improvement in personalized learning and creative abilities; at the teaching level, the focus is on the accuracy of resource matching, the frequency of classroom interaction, and the achievement rate of teaching objectives; at the innovation level, the evaluation measures the improvement in the diversity of student works' styles and the uniqueness of their creativity.

The Analytic Hierarchy Process (AHP) was used in conjunction with expert questionnaires to design the weights of indicators, and 15 professors in the field of art education were invited to participate to determine the weights of indicators at each level. Taking the "Digital Photography Technology and Art" course at South-west Petroleum University as an example, the "creative uniqueness" index is de-

terminated by comparing the similarity of works using AI (40% weight) and the scores from three industry experts (20% each), thus reducing the subjectivity of the evaluation.

## **5. Conclusions and Outlook**

### **5.1. Research Conclusions**

This study, based on the theory of personalized education, takes film and drama as an example. Through the “theory construction—model design—empirical testing” model, it constructs a personalized implementation framework of “three-dimensional ability profile—intelligent resource adaptation—dynamic teaching intervention”, integrating multiple intelligences theory and constructivism, as well as university empirical studies, to verify the framework’s effectiveness in improving resource matching accuracy, creative style diversity, and learning satisfaction.

From the perspective of personalized education, AI technology can effectively empower the innovation of college art courses. Through precise identification of the needs of students and teachers, personalized resource delivery, and intelligent, creative assistance, it significantly improves teaching effectiveness and students’ creative abilities. However, AI is not a tool to replace teachers but a partner to expand teaching methods. The future of arts education should be a collaborative model of “professional guidance from teachers, assistance from AI technology, and student-led creation”.

### **5.2. Future Outlook**

Future research should focus on three directions: First, conduct cross-international comparative studies, selecting art disciplines from well-known art colleges and comprehensive universities at home and abroad to test the broad applicability of the model; second, establish a student career development tracking mechanism for more than five years, scientifically evaluating the long-term impact of AI art education through indicators such as industry recognition and award-winning rates; third, construct a dynamic technology adaptation research system, closely follow the iteration of generative AI technologies represented by Sora, regularly update teaching content to suit students, and steadily advance through a combination of coaching and instruction.

### **Funding**

Southwest Petroleum University Graduate Education Teaching Reform Project: “Research and Practice on the Training Model for Master of Fine Arts (MFA) in Drama and Film Studies Based on Professional Competency Orientation”. Project No.: 2024JGYB059.

### **Conflicts of Interest**

The authors declare no conflicts of interest regarding the publication of this paper.

## References

- [1] Liang, Z.M., Li, B. and Zhao, D.M. (2025) Reconstructing the Learning Process with AI Agents—Case Analysis and Reflection on the Creation of Teaching Agents. *Chinese University Teaching*, No.9, 80-86. (In Chinese)  
<https://www.cqvip.com/doc/journal/7201940296?sign=2dfacacada-fcffb77213ad6514493294eac104fbe0edc0e03d836477e64166e9&expireTime=1791276672408&resourceId=7201940296&type=1>
- [2] Wang, Z.H. (2025) Research on the Reform and Practice of Personalized General Education Curriculum System of Art Colleges Empowered by Digitalization—Taking the University Computer Basic Course as an Example. *Art Science and Technology*, **38**, 76-78. (In Chinese)  
<https://www.cqvip.com/doc/journal/7201124649?sign=d36ad48ce556da216dbc6e0a11f279b8f44d5e5c9759999f88a7042f6500d5ae&expireTime=1791277290509&resourceId=7201124649&type=1>
- [3] Wang, J.F. (2025) Exploration and Research on the New Model of AI Empowering Vocational College Education. *Chinese Science and Technology Journal Database (Full Text Edition) Education Science*, No. 2, 060-063. (In Chinese)  
<https://www.cqvip.com/onlinereading?type=1&lid=1000004303088>
- [4] Liu, Q.Q. (2025) Exploration of Innovation in College German Teaching under AI Empowerment. *Chinese Science and Technology Journal Database Research*, No. 1, 181-184. (In Chinese)  
<https://www.cqvip.com/onlinereading?type=1&lid=1000004281869>
- [5] Fu, L.Q. and Zhu, G.R. (2025) Exploration of Personalized Application of AI Technology in User Experience Design Education and the Path of Cultivating Students' Innovative Ability. *Art and Technology*, **38**, 208-210+213. (In Chinese)  
<https://www.cqvip.com/doc/journal/7200969215?sign=03f2bbce7fbcc2507566941d3ef05c661583244952d5f5644f2c03a361845bb6&expireTime=1791277494748&resourceId=7200969215&type=1>
- [6] Zeng, S.Y. and Zhang, X.Y. (2025) Research on the Teaching Innovation of “News Interview and Writing” Course in Colleges and Universities in the AIGC Era. *Western Radio and Television*, **46**, 62-67. (In Chinese)  
<https://www.cqvip.com/doc/journal/7200926444?sign=d000ab82d7d6c138434a8316bb14320ccb37e8c0949c992745ad224b3a7f6228&expireTime=1791277565581&resourceId=7200926444&type=1>