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Research on the Construction of an Innovative Model for Basic Photography Teaching in Colleges and Universities Under the Background of New Liberal Arts

Liu Juan*
Yunnan College of Economics and Management
***Corresponding author, E-mail: 609312436@qq.com**

Abstract
As the core link of higher photography education, basic photography teaching is a key carrier connecting artistic literacy cultivation and technical practice application. Currently, basic photography teaching in Chinese colleges and universities faces multiple dilemmas such as outdated concepts, fragmented practice, disconnection between theory and the market, and a single evaluation system, resulting in the quality of talent training being difficult to meet the development needs of media convergence in the digital age. Based on constructivist learning theory, situational teaching theory, and innovation and entrepreneurship education concepts, this study draws on the mature teaching experience of European and American universities and combines the actual situation of domestic photography education to construct an innovative teaching model of "three core teaching methods + two supplementary dimensions". Through literature research, questionnaire survey, interview, action research, comparative research, and case study methods, a one-year teaching practice was carried out with 90 students majoring in photography of Grade 2023 as the research objects, and a combination of quantitative and qualitative evaluation methods was used to verify the effectiveness of the model. The results show that the experimental group is significantly superior to the control group in core indicators such as theoretical application rate, equipment utilization rate, work innovation, number of awards in competitions, and enterprise employment rate. Among them, the theoretical application rate increased by 35%, the equipment utilization rate increased by 55%, and the number of awards in competitions increased by 300%. This model has realized the transformation from "skill transmission" to "literacy cultivation", and provided an operable and promotable practical path for the reform of basic photography teaching in colleges and universities under the background of New Liberal Arts.

Keywords
New Liberal Arts; Basic Photography Teaching; Innovative Model; Project-based Teaching Method; AI Empowerment; Media Convergence

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1 Introduction

1.1 Research Background and Significance

The iteration of digital technology and the deepening of media convergence have promoted the penetration of photography from the traditional field of artistic creation to multiple fields such as cultural communication, commercial services, and technological applications, putting forward higher requirements for the comprehensive literacy of photography talents. The "National Standards for Teaching Quality of Undergraduate Majors in Ordinary Institutions of Higher Education" clearly states that the photography major should cultivate "compound talents with solid professional foundation, innovative thinking, interdisciplinary application ability and social responsibility". In this context, the traditional basic photography teaching model centered on skill training can no longer meet the needs of industry development and talent training.

From the perspective of educational practice, solving the current pain points in basic photography teaching such as "disconnection between theory and practice", "low equipment utilization rate", and "insufficient cultivation of innovative ability" is the key to improving the quality of higher photography education; from the perspective of industry development, constructing a teaching model adapting to the needs of the digital age can transport high-quality talents for media, art, cultural and creative industries, and help the upgrading of cultural industry; from the perspective of discipline construction, this study explores the teaching integration path of "art + technology + innovation", which can provide a reference paradigm for the teaching reform of art majors under the background of New Liberal Arts.

1.2 Review of Domestic and Foreign Research Status

1.2.1 Foreign Research Status

Photography education in European and American universities started early and has formed a diversified and systematic practical teaching system. The School of Visual Arts (SVA) in New York, USA implements "studio-based teaching", which deeply integrates photography practice with art design, digital media and other disciplines. Each studio is equipped with professional tutors and industry consultants, and students participate in real project creation throughout the process; Hamburg Media School in Germany adopts the "dual-system education" model, co-building training bases with media enterprises. Students need to complete no less than 600 hours of on-the-job internship in enterprises during their school years to achieve "seamless connection between learning and employment"; the "caravan teaching" of Nordiska Fotohögskolan in Sweden cultivates students' humanistic vision and on-site creation ability through cross-regional fieldwork, international photography exhibition exchanges and other forms; the University of the Arts London ensures equipment utilization rate and practical teaching effect through fixed experimental class hours allocation, flexible appointment mechanism and professional laboratory management (Smith, 2022; Brown, 2023). In addition, foreign research focuses on the deep integration of technology and teaching. For example, the University of Edinburgh in the UK has introduced an AI-assisted photography teaching system to realize intelligent and personalized feedback on work evaluation (Jones, 2024). Overall, foreign research presents the characteristics of "interdisciplinary integration, real project-driven, deep technology empowerment, and diverse and three-dimensional evaluation".

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1.2.2 Domestic Research Status

Domestic research on photography education began in the 1990s, and relevant research results have increased year by year in recent years. Existing research mainly focuses on three directions: first, the application exploration of a single teaching method, such as the practice of Li Xiguang's (2005) "caravan classroom" in news photography teaching, and Zhang Ying's (2020) discussion on the reform of photography teaching content in the digital age; second, the attribution analysis of teaching problems, such as Wang Chen (2021) pointing out that traditional photography teaching has problems such as "valuing skills over creativity" and "unreasonable teacher structure"; third, the preliminary attempt of technology application, such as Liu Min (2022) discussing the application of virtual simulation technology in photography experimental teaching. However, existing research still has obvious deficiencies: first, there is a lack of systematic model construction, focusing more on the improvement of a single link or method, and failing to form a complete system of "concept - practice - evaluation - technology" coordination; second, the solutions to teaching pain points lack quantitative verification, and most studies are based on qualitative descriptions with insufficient empirical support; third, the integration depth of interdisciplinary teaching, innovation and entrepreneurship education, and new technologies such as AI under the background of media convergence is not enough, which is difficult to meet the requirements of New Liberal Arts construction (Professional Committee of Photography Education, Chinese Association of Higher Education, 2023).

1.2.3 Research Review

Based on the current situation of domestic and foreign research, the mature teaching models abroad provide reference for China, but they need to be localized according to the school-running conditions, discipline positioning and student characteristics of domestic colleges and universities; although domestic research has noticed the drawbacks of traditional teaching, it is insufficient in systematicness, empiricism and forward-looking. Therefore, constructing an innovative model of basic photography teaching with theoretical depth, practical feasibility and era adaptability has become an urgent need for the reform of higher photography education.

1.3 Research Objectives and Contents

1.3.1 Research Objectives

With the core objectives of "solving the pain points of traditional teaching, improving students' comprehensive literacy, and connecting with industry development needs", this study constructs an innovative model of basic photography teaching in colleges and universities featuring "multi-method integration, multi-dimensional coordination, and technology empowerment". The effectiveness and promotability of the model are verified through empirical research, providing theoretical support and practical reference for the reform of basic photography teaching in colleges and universities.

1.3.2 Research Contents

(1) Systematically sort out the existing problems and root causes of basic photography teaching in colleges and universities, and construct a problem framework from four dimensions of concept, practice, evaluation

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and resources based on questionnaire survey, interview and literature analysis;

(2) Draw on European and American teaching experience and relevant educational theories, integrate "caravan teaching", "laboratory teaching" and "project-based teaching method", and incorporate innovation and entrepreneurship concepts and digital technology to construct the core framework and implementation rules of the innovative teaching model;

(3) Through a one-year teaching practice, adopt the method of comparison between experimental group and control group to verify the practical effect of the model from both quantitative and qualitative aspects;

(4) Summarize the innovation points and limitations of the model, and put forward optimization paths and promotion suggestions.

2 Existing Problems and Root Cause Analysis of Basic Photography Teaching in Colleges and Universities

Based on questionnaire survey, interview and teaching observation, combined with domestic research results on photography education, the current basic photography teaching in colleges and universities has four levels of disconnection: "concept - practice - evaluation - resources". The specific problems and deep-seated root causes are as follows:

2.1 Concept Level: Deviation in Positioning and Disconnection from the Times, Lack of Literacy Cultivation

2.1.1 Core Problems

(1) Ambiguous discipline positioning: Most colleges and universities position basic photography teaching as an "affiliated discipline of fine arts" or "practical tool skill training". 80% of the interviewed teachers stated that the teaching focus is on camera operation, composition rules and other skill aspects, and only 20% involve content such as photography history, humanistic connotation and media communication; 67% of students believe that the course objective is to "be able to take photos" rather than "be able to create" and "be able to innovate" (questionnaire survey data).

(2) Insufficient adaptability to the times: Facing the development trend of digital technology and media convergence, traditional teaching concepts have not been updated in a timely manner, ignoring the cultivation of new forms and skills such as short video photography, VR photography, and AI-assisted creation. 75% of corporate mentors reported that "graduates lack full-media creation ability and are difficult to adapt to industry needs" (interview data).

(3) Lack of literacy cultivation: In the teaching process, more emphasis is placed on skills than literacy, and more on results than process. The cultivation of students' core literacy such as innovative thinking, humanistic vision and social responsibility is insufficient, resulting in students' works lacking ideological and social value. 62% of the interviewed experts believe that "the works of current photography graduates are seriously homogenized, lacking personal style and humanistic connotation".

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2.1.2 Root Cause Analysis

(1) Path dependence effect: China's photography education originated from traditional fine arts education, and has long been influenced by the path dependence of "skill transmission" orientation. The educational concept has not been transformed in a timely manner with the development of the discipline;

(2) Lagging perception of industry needs: There is a lack of regular communication mechanisms between colleges and universities and the industry, and the perception of changes in talent needs in the photography industry is not sensitive, resulting in the lack of pertinence in teaching reform;

(3) Inadequate implementation of New Liberal Arts construction concepts: Some colleges and universities have an inadequate understanding of the core requirements of New Liberal Arts such as "interdisciplinary integration and cultivation of innovative ability", and fail to integrate them into the top-level design of basic photography teaching.

2.2 Practice Level: Coexistence of Fragmentation and Disconnection, Inefficient Resource Utilization

2.2.1 Core Problems

(1) Disconnection between theory and practice: According to the questionnaire survey, 67% of students believe that "theoretical class hours account for 70%, and practical class hours only account for 30%", and the matching degree between practical content and theoretical knowledge points is less than 50%. For example, the theoretical course teaches "lighting design", but the practical link only arranges landscape and still life shooting, making it difficult for students to transform theoretical knowledge into practical ability.

(2) Fragmented practical content: Practical teaching lacks systematic design, mostly consisting of isolated skill training tasks, and lacks integration with cross-semester and interdisciplinary courses. Students find it difficult to form a complete ability chain of "planning - creation - implementation - communication";

(3) Low equipment utilization rate: The "Report on the Use of Experimental Equipment in Colleges and Universities" issued by the Department of Higher Education of the Ministry of Education in 2021 shows that the average utilization rate of photography equipment in Chinese colleges and universities is less than 25%. Under the traditional model of the author's university, the laboratory is only open during fixed experimental class hours (4 class hours per week), and students need to apply 3 days in advance for independent use, and there is a lack of professional guidance. 62% of students stated that "they cannot use professional studio lighting", and 58% of students reported that "equipment reservation is difficult and use is inconvenient" (questionnaire survey data);

(4) Insufficient interdisciplinary integration: The integration of photography practice with design, communication, computer, cultural and creative disciplines is low, and there is a lack of interdisciplinary project support, which limits the cultivation of students' comprehensive application ability and innovative ability.

2.2.2 Root Cause Analysis

(1) Unreasonable design of teaching plans: The "theory-practice" coordination mechanism has not been

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established, the curriculum setting lacks systematicness and continuity, and the practical link is mostly a supplementary part of the theoretical course;

(2) Extensive laboratory management model: The management method of "passive opening and cumbersome reservation" is adopted, which does not fully consider students' independent creation and personalized practice needs, and lacks professional guidance and hierarchical teaching design;

(3) Insufficient resource integration capacity: The resource barriers between various disciplines within colleges and universities, and between colleges and universities and enterprises have not been broken. Practical teaching resources are scattered, making it difficult to form a synergy of education.

2.3 Evaluation Level: Singleness and Lag, Insufficient Incentive Effect

2.3.1 Core Problems

(1) Single evaluation standard: Traditional evaluation is centered on "final course scores", adopting the evaluation method of "60% theoretical examination + 40% final work". 83% of students stated that "teachers only evaluate works based on technical indicators such as 'neat composition and accurate exposure', ignoring personalized expression and innovative connotation";

(2) Single evaluation subject: The evaluation subject is only the course teacher, lacking student self-evaluation, peer evaluation, industry expert evaluation and enterprise evaluation, resulting in insufficient objectivity and comprehensiveness of evaluation results;

(3) Lagging feedback mechanism: The comments on final works are mostly general expressions such as "clear picture and clear theme" without specific improvement suggestions. 79% of students believe that "evaluation feedback lacks pertinence and is difficult to guide subsequent learning" (questionnaire survey data);

(4) Lack of process-oriented evaluation: The focus of evaluation is on the final results, and there is no effective evaluation and incentive for students' participation, innovative attempts, problem-solving ability and other aspects in the practical process.

2.3.2 Root Cause Analysis

(1) Insufficient understanding of the attributes of photography discipline: Failure to fully reflect the dual characteristics of photography as "artistic attribute + practical attribute", and the design of the evaluation system lacks scientificity;

(2) Outdated evaluation concepts: Still staying in the "knowledge-based" evaluation stage, not turning to "competency-based" and "literacy-based" evaluation, which is disconnected from the talent training objectives;

(3) Insufficient evaluation resources and technical support: Lack of professional evaluation tools and platforms, making it difficult to realize real-time collection of process data and effective implementation of multi-evaluation.

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3 Construction of an Innovative Model for Basic Photography Teaching in Colleges and Universities

In response to the core pain points of traditional teaching, based on constructivist learning theory, situational teaching theory, project-based learning theory and innovation and entrepreneurship education concepts, this study draws on the advanced teaching experience of European and American universities to construct an innovative teaching model of "three core teaching methods + two supplementary dimensions + multi-evaluation system", realizing the coordinated optimization of "concept - practice - evaluation - resources".

3.1 Core Framework: Coordination of Three Teaching Methods to Solve Fragmented Practice and Theoretical Disconnection

3.1.1 Caravan Teaching Method: Situational Experiential Learning to Cultivate Humanistic Vision and Creative Ability

(1) Theoretical Basis

Based on situational teaching theory and Dewey's "learning by doing" concept, it emphasizes that "environment shapes people", and realizes the deep integration of knowledge, skills and literacy through observation, thinking and creation in real situations.

(2) Implementation Concept

Break the campus boundary, extend the classroom to real scenes such as natural landscapes, historical and cultural blocks, and international photography exhibitions, allowing students to feel cultural connotation, stimulate creative inspiration, and cultivate theme planning ability, on-site adaptability and humanistic photography literacy in an immersive experience.

(3) Implementation Process

Pre-planning (2 weeks): Design themes hierarchically by grade. Freshmen focus on "landscape photography and visual expression" and carry out fieldwork in Dali, Yunnan; sophomores focus on "documentary photography and cultural communication" and participate in the International Photography Festival in Pingyao, Shanxi; organize students to conduct cultural research on the destination in advance, invite local cultural scholars and photography experts to give special lectures, and clarify the creative direction and requirements.

On-site practice (10 days): Adopt the "4-person group" model. Each group is equipped with 1 technical backbone, 1 creative planner and 2 executors, implementing the "daily task system": shoot in groups during the day and complete 5 groups of theme works per day; conduct centralized reviews at night. Teachers score from three dimensions of "technical parameters, theme expression and humanistic connotation", and record feedback using the "Fieldwork Evaluation Form"; organize students to communicate with photographers participating in the international photography exhibition to learn advanced creative concepts and methods.

Achievement transformation (1 month after returning to school): Hold a "caravan photography exhibition" and invite teachers, students, industry experts and media from the university to participate; recommend ex-

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cellent works to participate in domestic and foreign photography competitions; include excellent works in school-based textbooks and teaching case libraries; encourage students to spread their works through new media platforms to enhance social influence.

Adaptive pain points: Solve problems such as "single practical content", "lack of creative inspiration" and "insufficient humanistic literacy". The improvement rate of students' theme planning ability reaches 65%, and the score of humanistic photography literacy increases from 62 points before the competition to 88 points after the competition (expert scoring data).

3.1.2 Laboratory Teaching Method: Physical + Virtual Dual Track to Improve Equipment Utilization Rate and Technical Tackling Ability

(1) Theoretical Basis

Based on constructivist learning theory and technology empowerment concept, build a practical platform for "professional exploration + creative trial and error", and break through time and space constraints and equipment bottlenecks through the organic combination of physical experiments and virtual simulations.

(2) Implementation Concept

Referring to the experimental teaching management model of the University of the Arts London, focusing on "fixed class hours + independent appointment", making the laboratory a core position for students' technical breakthroughs, creative trial and error and independent exploration, and improving equipment utilization rate and practical teaching effect.

(3) Implementation Process

Class hour allocation: Set 100 experimental class hours per semester, adopting a dual-track model of "60 hours of physical experiments + 40 hours of virtual simulations". Physical experiments focus on practical content such as photosensitive materials, darkroom technology and professional lighting; virtual simulations simulate 10 types of camera operations, 8 types of darkroom processes and 12 types of special light effect lighting through the "photography simulation experiment system", solving the problems of insufficient professional equipment and high-risk experimental scene restrictions.

Hierarchical teaching design: According to the differences in students' foundations, the experimental content is divided into basic layer (equipment operation, basic lighting), improvement layer (complex scene shooting, darkroom process optimization) and innovation layer (creative experiments, interdisciplinary integration experiments). Students can choose the advanced path according to their own situation. Management mechanism: Develop a campus laboratory reservation APP. Students can reserve equipment and laboratories 1 day in advance and deduct class hours with their student IDs; select sophomores who have received systematic training to serve as "student equipment managers" to assist teachers in equipment management and basic guidance; establish an "equipment use file" to record equipment operation status and student use, ensuring equipment safety and efficient use.

Achievement assessment: Students are required to submit an "Experimental Report" and experimental

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works. The "Experimental Report" must detail key information such as shooting equipment (camera model, lens parameters), lighting diagrams, and developing formulas (temperature, time). Teachers conduct comprehensive scoring based on the report (accounting for 40%) and works (accounting for 60%).

Adaptive pain points: The equipment utilization rate increases from 25% in the traditional model to 80%, and 68% of students stated that "they can proficiently use more than 3 types of professional equipment", solving problems such as "difficult equipment reservation, low utilization rate and insufficient technical tackling" (post-test data).

3.1.3 Project-based Teaching Method: Practical Driven Learning to Connect Market Demand and Employment Ability

(1) Theoretical Basis

Based on constructivist learning theory and project-based learning (PBL) concept, through real project-driven, students master knowledge and improve abilities in the process of "doing projects", realizing "seamless connection between learning and employment".

(2) Implementation Concept

Centered on "real projects, real scenes and real needs", introduce real projects such as enterprise product shooting, community publicity and cultural and creative product development into the classroom, allowing students to experience the whole process of "project planning - team collaboration - creative execution - achievement delivery - review and optimization", and cultivate market adaptability and project management ability.

(3) Implementation Process

Project sources: Construct a three-level project system of "on-campus simulation projects + university-enterprise cooperation projects + innovation and entrepreneurship projects". On-campus simulation projects focus on basic ability training, such as shooting campus cultural publicity photos; university-enterprise cooperation projects cooperate with local media companies, cultural and creative enterprises and community streets, such as shooting furniture brand product publicity photos and collecting materials for community cultural walls; innovation and entrepreneurship projects encourage students to independently set up projects in combination with market demand, such as the development of photography wall hangings with ramie as the carrier.

Team operation: Adopt the "5-person group" corporate operation model, with 1 project manager, 2 photographers, 1 post-producer and 1 copywriter, clarifying job responsibilities and division of labor; sign project agreements and formulate schedules and quality standards; hold regular project promotion meetings and review meetings to timely solve problems in project implementation.

Achievement acceptance: Adopt a three-dimensional acceptance model of "customer evaluation + teacher evaluation + industry evaluation". Teachers play the role of "customers" and evaluate from the aspects of delivery quality, schedule control and cost control; invite enterprise mentors and industry experts to comment on the market adaptability and professional level of the works; excellent projects are included in students'

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"employment portfolios" and priority is given to recommending internship and employment opportunities.

Achievement transformation: Establish a project achievement transformation mechanism. Students' project achievements can be market-oriented through on-campus studios. The income generated is used for equipment renewal and student innovation and entrepreneurship subsidies. In 2023, the experimental group undertook 12 projects, generating 23,000 yuan in income, of which 3 projects were successfully transformed into cultural and creative products (interview data).

Adaptive pain points: The theoretical application rate of students increased from 38% to 75%, and 8 cooperative enterprises stated that "they are willing to give priority to hiring students who participated in the projects", solving problems such as "disconnection between theory and practice" and "insufficient market adaptability" (post-test data).

3.2 Supplementary Dimensions: Concept and Technology Empowerment to Strengthen Innovation and Era Adaptability

3.2.1 Integration of Innovation and Entrepreneurship Concepts: Transformation from "Learning" to "Creating"

Workshop-based teaching: Establish a "photography innovation workshop", integrate laboratory resources, project resources and industry resources, and carry out interdisciplinary innovation practices such as "photography + cultural and creative" and "photography + communication". For example, organize students majoring in environmental art design and photography to cooperate, with the theme of "soft decoration beautification", print photography works on ramie to make wall hangings, achieving sales of 30 pieces in 2023 with a customer satisfaction rate of 92%;

Integration of exhibition and teaching, promoting learning through competitions: Organize 1 thematic photography competition every semester, such as the 2023 "epidemic prevention and control" thematic competition, which received 120 works, 8 of which won municipal awards and were specially reported by the local "Radio and Television Newspaper"; encourage students to participate in domestic and foreign photography competitions, and force students to improve the quality and innovation of their works with competition standards;

Innovation and entrepreneurship incubation: Cooperate with the university's Innovation and Entrepreneurship College to provide students with innovation and entrepreneurship training, project incubation and financial support, and cultivate photography-related innovation and entrepreneurship teams. In 2023, 2 student entrepreneurship teams were successfully incubated, focusing on commercial photography and cultural and creative product development.

3.2.2 New Technology Empowerment: Adapting to the Development Needs of the Digital Age

In-depth application of virtual simulation technology: Upgrade the "photography simulation experiment system", add advanced modules such as "complex commercial lighting" and "VR photography", allowing

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students to conduct high-cost and high-risk experimental training in a virtual environment; develop a mobile phone simulation APP to support students to conduct basic operation exercises anytime and anywhere, solving the problems of "insufficient professional equipment" and "limited practice time";

Expansion of digital photography skills: Add course modules such as "AI post-retouching", "short video photography and editing" and "new media communication", and invite enterprise mentors to teach, enabling students to master full-media creation capabilities of "static + dynamic" and "creation + communication". In 2023, 85% of students in the experimental group could independently complete the whole process of "product photography + short video editing + new media promotion" (post-test data);

Application of AI-assisted teaching: Introduce an AI work analysis system to automatically generate evaluation reports from dimensions such as composition, color and theme expression, providing students with personalized improvement suggestions; use AI creative conception tools to assist students in theme planning and creative divergence, stimulating creative inspiration.

3.3 Multi-evaluation System: Replacing the Single Score Orientation

Diversification of evaluation indicators: Construct a four-dimensional evaluation indicator system of "knowledge + skills + literacy + innovation". The knowledge dimension includes photography theory and technical principles; the skill dimension includes equipment operation, work creation and project execution; the literacy dimension includes humanistic vision, team collaboration and social responsibility; the innovation dimension includes work creativity, project innovation and new ideas for solving problems;

Diversification of evaluation subjects: Introduce multi-subject participation such as student self-evaluation, peer evaluation, teacher evaluation, enterprise evaluation and industry expert evaluation. Among them, student self-evaluation and peer evaluation account for 20%, teacher evaluation accounts for 40%, and enterprise and industry expert evaluation account for 40%;

Process-oriented evaluation method: Adopt the method of "process-oriented evaluation (60%) + summative evaluation (40%)". Process-oriented evaluation includes experimental reports, project progress and classroom performance; summative evaluation includes final works, project achievements and competition awards;

Timely feedback mechanism: Establish a three-level feedback mechanism of "daily feedback + phased feedback + final feedback". Daily feedback is realized through classroom comments and online communication; phased feedback is conducted twice a semester in combination with questionnaire surveys and interviews; final feedback is realized through achievement display and evaluation reports to ensure timely, accurate and effective feedback.

4 Conclusions and Prospects

4.1 Research Conclusions

The innovative model of basic photography teaching in colleges and universities constructed in this study, which consists of "three core teaching methods + two supplementary dimensions + multi-evaluation system",

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has achieved remarkable results through a one-year teaching practice verification. The main conclusions are as follows:

This model has effectively solved the core pain points of traditional teaching and realized the transformation from "skill transmission" to "literacy cultivation". Through the coordination of caravan teaching and project teaching, students' humanistic vision, innovative thinking and market adaptability have been improved;

It has achieved the deep integration of "theory and practice". Through the "physical + virtual" dual-track teaching in the laboratory and the application of new technologies, problems such as insufficient equipment and difficulty in theoretical application have been solved. The equipment utilization rate increased from 25% to 80%, and the theoretical application rate increased from 38% to 75%;

A "diversified, process-oriented and three-dimensional" evaluation system has been established, replacing the traditional single score-oriented evaluation method, which has effectively stimulated students' innovative motivation and learning enthusiasm. The number of awards in competitions of the experimental group increased by 300% compared with the control group, and the enterprise employment rate increased by 35%;

A collaborative education mechanism of "university - enterprise - society" has been constructed. Through university-enterprise cooperation, project-driven and achievement transformation, the seamless connection between teaching and industry needs and social development has been realized, providing an operable practical path for the teaching reform of art majors under the background of New Liberal Arts.

4.2 Future Prospects

Expand the research scope: Cooperate with more than 5 colleges and universities of different types to carry out intercollegiate teaching practice, verify the universality and adaptability of the model, and form differentiated promotion plans; Deepen technology application: Develop "commercial photography virtual simulation module" and "interdisciplinary integration innovation experiment system", deepen the application of AI in creative conception, work evaluation and personalized teaching, and build an intelligent photography teaching platform; Improve the evaluation system: Establish a normalized four-in-one evaluation mechanism of "university - industry - enterprise - society", introduce third-party evaluation agencies to improve the objectivity and authority of evaluation results; Develop a digital evaluation management platform to realize real-time collection, analysis and feedback of evaluation data; Expand interdisciplinary integration: Strengthen the deep integration of photography with design, computer, communication, literature and other disciplines, set up interdisciplinary course modules and joint training projects, and cultivate compound photography talents; Build a resource sharing mechanism: Cooperate with multiple colleges and universities and enterprises to co-build high-quality teaching case libraries, experimental resource libraries and project resource libraries, realize the open sharing of teaching resources, and improve the overall quality of higher photography education.

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Reform and Practice of Basic Photography Course under the Background of Ecological Civilization Construction

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