

# Research on Teaching Reform of University Photography Courses Under the Digital Era

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**Abstract:** Dramatic advances in digital technology and comprehensive restructuring of all-media ecosystems have thoroughly reshaped the creation forms, dissemination channels and application scenarios of visual images, pushing university photography teaching into a critical stage of transformation and upgrading. Taking teaching innovation for college photography courses amid digitalization as the research object, this paper combines the intelligent and diversified development trends of today's imaging industry to thoroughly analyze favorable opportunities and prominent deficiencies existing in photography teaching. It systematically sorts out core drawbacks covering curriculum framework, classroom delivery modes, practical training arrangements and assessment standards. Supported by digital-intelligent technology empowerment and the integration of school education and industrial practice, this paper constructs a complete logical framework for educational reform, and puts forward four innovative improvement strategies: updating core curriculum content, reconstructing classroom teaching modes, building multi-functional practical training platforms, and optimizing multi-dimensional evaluation mechanisms. This study intends to resolve the long-standing disconnect between classroom knowledge and professional practice as well as rigid teaching frameworks within traditional photography education. It aims to build a modern teaching system compatible with the digital creative industry, steadily improve the cultivation quality of visual communication talents in higher education, and provide operable practical references for the innovative progress of photography education in the new era.

**Keywords:** Digital era; Transformation of university photography teaching; Integration of industry and education

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## 1. Introduction

The widespread application of artificial intelligence, virtual reality and other digital technologies has expanded image creation from professional artistic fields to new media, cultural creativity, cultural tourism and numerous other social sectors. Competence in visual production has become a fundamental skill required for digital content creation. As a core discipline cultivating students' aesthetic judgment, shooting capabilities and visual narrative logic, university photography courses occupy a pivotal position in talent training systems

for media and art majors. Innovations within the digital imaging industry have raised brand-new standards for teaching content, delivery approaches and talent cultivation objectives in college photography education. Revamping photography teaching in response to emerging industrial trends effectively bridges classroom learning and real occupational demands. Relevant explorations carry substantial theoretical and practical significance for perfecting higher art education systems, filling talent gaps in digital cultural industries, and advancing high-quality development of university photography instruction.

## **2. Opportunities for transformative development of university photography teaching in the digital age**

### **2.1. Renewed creation tools enrich multi-dimensional teaching content**

Popular digital tools have revolutionized photography's production carriers and underlying creative logic, removing the hardware limitations, complicated workflows and restrictive shooting conditions inherent to traditional film photography. Conventional photography training heavily relied on analog film cameras and darkroom developing equipment, which brought high operational costs, complicated procedures and low error tolerance. Early teaching systems centered on hardware operation rules, film exposure principles and darkroom processing techniques. In contrast, the digital era has popularized a full spectrum of image devices including DSLRs, mirrorless cameras, smartphones, aerial drones and action cameras. Maturing auxiliary technologies such as AI post-production, intelligent color grading, virtual scene shooting and digital image compositing further break spatial and hardware restrictions for creators. Diversified shooting equipment and digital processing tools greatly broaden the boundary of teaching content in photography courses.

### **2.2. Transformed communication scenarios expand employment scope for graduates**

The formation of all-media communication frameworks has brought fundamental changes to how photographic works are circulated, distributed and utilized. Traditional photographic pieces were mainly exhibited in art galleries, printed in newspapers, and collected in professional albums, where evaluation priorities lay in basic aesthetic indicators including resolution, composition, and light control; talent training back then mainly focused on professional artistic creation capacities. Nowadays, short-video platforms, social media accounts, self-media matrices and digital cultural creation websites dominate image communication. Visual products have taken on lightweight, fragmented, scenario-oriented and interactive features. Modern creators are expected to master not only basic photographic aesthetics and shooting skills, but also cross-disciplinary capabilities such as narrative design for new media, content planning, traffic-oriented creation and multi-platform content adaptation.

### **2.3. Technological empowerment optimizes classroom teaching conditions**

Digitized teaching aids and smart learning platforms provide solid technical support for innovating photography teaching modes. Traditional photography education mostly depended on offline lectures, computer lab operations, and outdoor field shooting, suffering from limited teaching resources, delayed teacher-student interaction, and low efficiency of work reviews. In the digital context, online learning systems, virtual simulation labs, AI tutoring tools and cloud-based material libraries have been widely deployed. Instructors can release pre-class learning materials, organize independent preview and conduct real-time question answering via online portals. Virtual simulation technology recreates complicated shooting

environments to compensate for insufficient field shooting opportunities on campus.

### **3. Predicaments restricting current university photography teaching**

#### **3.1. Rigid curriculum systems fail to keep pace with industrial updates**

Most higher education institutions still adopt outdated curriculum frameworks inherited from traditional photography education, resulting in severe disconnection between teaching content and real industrial demands under digitalization. Syllabus focus remains concentrated on classic modules such as traditional composition, light application, film exposure and basic single-lens reflex camera operation. Emerging digital photography modules, such as mobile phone videography, short-video montage, AI image optimization, digital composite production and new media visual storytelling, only receive superficial coverage or are completely omitted.

#### **3.2. Single teaching modes lack in-depth integration with digital tools**

Classroom delivery methods for photography courses remain inflexible in most colleges and universities. A majority of teachers still stick to the conventional model combining theoretical lectures with simple mechanical practice, while digital auxiliary tools are only used superficially. Teaching activities mainly involve one-way knowledge output by instructors, leaving limited room for students to engage in independent creation and creative exploration. Even where smart teaching platforms are introduced, they are merely used for material distribution and homework submission. Institutions rarely develop advanced hybrid teaching forms such as virtual simulation shooting training, AI-assisted creative design, integrated online-offline creation tasks and immersive scene teaching, failing to realize deep fusion between digital technology and photography instruction.

#### **3.3. Deficient practical training lacks professional scenario matching**

Photography is a highly practice-oriented discipline, and hands-on training serves as the core link to improve students' creative competence. Nevertheless, practical teaching links in current university photography programs have obvious shortcomings. On one hand, training scenarios remain monotonous, confined to campus grounds and ordinary indoor and outdoor shooting. Students rarely access professional environments for commercial photography, documentary journalism, short-video production and aerial shooting, so they cannot accumulate experience matching real industry workflows. On the other hand, practical assignments show serious homogenization. Most tasks only require repetitive basic composition and lighting exercises without targeted, innovative project-based training, which suppresses students' personalized creative expression.

#### **3.4. One-sided evaluation systems mislead talent cultivation orientation**

Existing assessment mechanisms for photography courses cannot comprehensively measure students' integrated digital image literacy. Evaluation mostly adopts a summative model based on routine homework and a final portfolio, with scoring criteria overly dependent on technical indicators including picture clarity, composition and light arrangement. The current evaluation system neglects comprehensive assessment of creative thinking, narrative logic, digital technology application, new media adaptability and teamwork capacity. Meanwhile, it lacks process-oriented evaluation tracking students' learning progress, creative

brainstorming and iterative revision throughout the semester.

## **4. Innovative reform paths for university photography teaching in the digital era**

### **4.1. Update core teaching content to build an integrated digital-intelligent curriculum system**

Dynamic renewal of curriculum content and construction of a digitally integrated knowledge framework act as core solutions to break traditional teaching limitations and bridge gaps between classroom learning and occupational requirements, catering to diversified and intelligent trends in the digital imaging industry. Digital image production has evolved beyond simple artistic shooting, becoming a comprehensive content creation practice integrating intelligent technology, media communication and creative design. Higher education institutions must abandon stagnant, unadjusted syllabus structures and upgrade teaching content according to actual post demands<sup>[1]</sup>. Based on skill standards required by new media, digital cultural creation, commercial media and documentary industries, colleges should systematically add practical digital modules including high-definition mobile shooting, short-video lens scheduling, AI intelligent color correction and retouching, digital image synthesis and restoration, aerial drone framing, new media cover design and dynamic video editing. These additions make up for missing digital content in traditional courses<sup>[2]</sup>. In terms of interdisciplinary integration, single artistic teaching boundaries should be broken. Cross-field knowledge such as digital image copyright protection, narrative logic for new media content, regional cultural tourism image design and commercial visual marketing will be incorporated to establish a three-dimensional curriculum framework covering fundamental aesthetics, digital technology and industrial practice. Teachers need to continuously track creative trends on Douyin, Xiaohongshu, WeChat Channels and other social platforms, as well as cutting-edge technologies and excellent cases in commercial photography and cultural creation industries. By integrating innovative shooting techniques, mainstream visual styles and industrial operational standards into classroom cases, teaching content can stay aligned with technological iterations, equipping students with solid basic photography skills plus modern digital creation capabilities and fundamentally resolving the problem of students' outdated professional competencies.

### **4.2. Restructure classroom delivery modes to develop hybrid virtual-physical teaching systems**

Conventional one-way lecturing and field-restricted teaching models cannot satisfy the innovative, diversified characteristics of digital image creation. Restructuring teaching frameworks with digital technology to create hybrid virtual-and-real classroom systems becomes a key measure to activate classroom vitality and lift teaching quality. Past photography teaching overly relied on offline on-location shooting, whose outcomes were easily restricted by objective factors including weather, venue, light and equipment. Key teaching segments such as night shooting, backlight color adjustment, low-light atmosphere shaping and rain/snow scene framing could not be practiced regularly, leaving students incompetent at handling complex shooting environments<sup>[3]</sup>. The popularization of digital virtual simulation technology effectively addresses this teaching bottleneck and provides technical support for diversified classroom design. Relying on smart campus platforms, universities can build exclusive online photography teaching zones integrating micro-lessons on digital photography, post-production tutorials, high-definition material resources and industrial practice cases to form round-the-clock open online learning libraries. Before class, instructors assign targeted

learning materials matching teaching priorities to guide students in independent preview of basic equipment operation and parameter adjustment, saving valuable in-class time. During classroom sessions, teachers deliver targeted explanations focusing on difficult preview points and practical weaknesses, while introducing photography virtual simulation platforms. Digital tools recreate various complex shooting scenarios, allowing students to repeatedly practice shooting skills under special light and environmental conditions and intuitively observe how parameter adjustments alter screen effects, offsetting the drawbacks of monotonous real-scene training with low error tolerance. After class, uniform standardized mechanical assignments are replaced with personalized creative tasks designed according to students' interests and proficiency levels. Learners are encouraged to utilize AI tools and digital post-production technology for creative exploration, breaking rigid mindsets inherited from traditional photography. Meanwhile, classroom forms are fully upgraded to discard the outdated "theory plus simple practice" model. Theme-driven and project-based teaching are widely promoted, with practical projects designed around real scenarios such as campus cultural construction, campus landscape promotion, urban cultural tourism publicity and public welfare visual communication. Students complete full-cycle creative work covering theme conception, script drafting, framing shooting, intelligent optimization, post-production and media adaptation either independently or in groups. Such training accumulates project experience and improves problem-solving abilities, realizing a fundamental shift from passive technical learning to active creative production.

#### **4.3. Deepen school-industry cooperation to build all-round practical training platforms**

Photography as a discipline bears strong practical and applied attributes. Learning all digital technologies and shooting skills ultimately needs to be applied in real projects. Relying merely on basic campus training fails to expose students to standardized industrial workflows, creative logic and operational norms, resulting in a disconnect between hands-on ability and occupational requirements. To tackle this teaching difficulty, universities should take the initiative to connect industrial resources and build a comprehensive practical training system combining on-campus foundational training and off-campus professional practice. For external practice construction, colleges may cooperate with local cultural industries and media sectors, establishing long-term stable off-campus photography training bases through formal school-enterprise cooperation agreements with integrated media centers, cultural media companies, new media operation agencies, cultural creation design studios and cultural tourism publicity departments <sup>[4]</sup>. Based on occupational skill requirements and university talent cultivation objectives, schools and enterprises jointly develop systematic practical projects. Students regularly participate in real commercial tasks including product photography, short-video production for new media, documentary image collection, brand visual packaging and cultural tourism promotional film production at enterprise sites. Direct exposure to industrial workflows helps learners master digital image production standards, aesthetic trends and landing specifications while accumulating authentic project experience. In terms of internal supporting facilities, universities shall upgrade digital photography laboratory hardware and operate permanent photography creative workshops fully equipped with high-end mirrorless cameras, aerial drones, professional fill light equipment and intelligent post-production workstations, providing sufficient venues and hardware support for students' daily creative polishing and technical exploration.

#### **4.4. Optimize assessment mechanisms to establish multi-dimensional comprehensive evaluation systems**

Traditional photography assessment centers on summative evaluation, measuring academic performance solely through final single-frame works and routine assignments with narrow scoring criteria overly focused on screen resolution, composition and light control. To correct this biased talent cultivation orientation, universities need to thoroughly reconstruct photography assessment frameworks and implement integrated evaluation mechanisms combining process tracking and final evaluation with multi-participant input and multi-angle indicators. In terms of weight distribution, process assessment accounts for a significantly larger proportion, covering students' full-semester learning trajectories including completion status of online independent study, in-class practical performance, creative idea records, iterative revisions of phased works, group project collaboration results and accumulation of daily creative exercises. This approach fully tracks learning attitudes, progress and competency improvements and eliminates unfair judgment based only on final works <sup>[5]</sup>. For artwork evaluation dimensions, single technical scoring standards are replaced with diversified indicators. While retaining basic technical scoring items, new evaluation dimensions are added covering innovative digital technology application, integrity of visual narration, adaptability to new media scenarios, uniqueness of creative conception and expression of cultural connotations. The updated system balances technical standardization and creative originality, conforming to industrial evaluation standards for digital visual works.

### **5. Conclusion**

Combined with the development features of the digital imaging industry, this paper sorts out development opportunities and existing defects of photography teaching, and constructs a complete reform roadmap covering curriculum content, teaching modes, practical platforms, and assessment mechanisms, forming an integrated talent cultivation system coordinating technology training, practical operation, and comprehensive literacy development. In the future, university photography teaching should keep pace with digital technological advances, dynamically optimize curriculum content and classroom delivery models, deepen collaborative education mechanisms between schools and enterprises, and continuously refine training modes for interdisciplinary visual talents. Such measures ensure photography education in higher education consistently meets the developmental demands of the digital cultural industry and supports sustained high-quality progress of art and media education.

### **Disclosure statement**

The author declares no conflict of interest.

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