

Reform of the Photoshop Curriculum System under the Background of Industry-Education Integration

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Abstract: As the most important tool course for design majors, the current Photoshop curriculum system has problems such as inadequate connection with post requirements, failure to implement practical projects, and insufficient school-enterprise collaboration. This paper systematically sorts out the evolution of the "integration of industry and education" and the structural logic of the Photoshop curriculum system, and proposes reform strategies for the Photoshop course practice system from four dimensions: "post-demand-oriented content reconstruction, innovation of diversified teaching methods, expansion of practical links, and in-depth school-enterprise collaboration."

Keywords: Integration of Industry and Education; Photoshop; School-Enterprise Cooperation; Curriculum Reform

1. Introduction

The integration of industry and education is a key path for the development of design education, playing an irreplaceable and important role in improving teaching quality and talent cultivation [1]. This integration breaks the disconnection between traditional education and enterprises, enabling colleges and universities to cultivate talents that meet the actual needs of the market and connect with enterprises. It also integrates the latest technologies and developments into classroom teaching, allowing students to be exposed to real projects directly in class [2].

The reform of the Photoshop course plays a significant role in enhancing students' practical abilities and professional literacy, while also helping them better adapt to market demands. For colleges and universities, it improves the quality of school teaching, strengthens school-enterprise cooperation, and accordingly expands the schools' influence. For enterprises, it

reduces talent cultivation costs, as graduates can be directly transformed into high-quality talents that meet enterprise requirements [3]. The reform of the Photoshop course enriches the theoretical system of curriculum reform under the integration of industry and education, and at the same time can provide reference for the reform of other related courses.

2. Overview of the Integration of Industry and Education and the Photoshop Curriculum System

2.1 The Connotation and Development of the Integration of Industry and Education

In the 1950s, China put forward the policy of "integrating education with productive labor". At that time, students were mainly engaged in productive labor through schools running factories and farms, or farm cooperatives running schools, thus realizing the initial integration of education and production. China formally proposed the concept of "combination of industry and education" in 1991, and officially put forward the concept of "industry-education integration and school-enterprise cooperation" in 2013 [4]. In 2019, the "National Vocational Education Reform Implementation Plan" emphasized promoting the integration of industry and education and the "dual-subject" education model of schools and enterprises. These policy documents have provided top-level design and policy support for the in-depth development of the integration of industry and education, and promoted the wide application of the integration of industry and education in practice.

The integration of industry and education refers to a school-running model and talent cultivation mechanism in which industry and education cooperate closely and penetrate each other [5]. From a macro perspective, it is reflected in the coordination between

industrial development and educational development: schools adjust their professional settings and curriculum content according to the needs of enterprises, while industries provide practical platforms, technical support and capital investment for education to promote the reform of education and teaching. From a micro perspective, it emphasizes the connection between teaching and the actual work content of enterprises, and introduces real projects into teaching to improve students' problem-solving ability and practical operation ability. Schools and enterprises establish cooperation to jointly customize talent cultivation plans, carry out teaching activities and evaluate students' learning outcomes. The curriculum content is matched with the employment requirements of enterprises to ensure that the content taught covers the knowledge and skills required by employment positions, allowing students to be exposed to the production process of enterprises during their study. In terms of the connection between schools and enterprises, schools and enterprises establish a close cooperative relationship to jointly formulate talent cultivation plans, carry out teaching activities and evaluate students' learning outcomes [6]. The connection between curriculum content and enterprises requires schools to set up curriculum links according to the needs of enterprises to ensure that the curriculum setting matches the needs of enterprises. The connection between the teaching process and the production process enables students to be exposed to the actual production process during their study, improving their practical ability and professional literacy. The integration of industry and education can closely combine the knowledge and skills learned by students with the actual needs of enterprises, shorten the post-adaptation period after graduation, help promote industrial upgrading, realize the sharing and optimal allocation of educational resources and industrial resources, improve resource utilization efficiency, and promote the common development of education and industry.

At present, many enterprises believe that participating in the integration of industry and education is difficult to achieve results in the short term and will increase enterprise

costs. The communication and coordination between schools and enterprises are also insufficient in addressing issues such as information symmetry and cooperation cohesion. In addition, the national policies need to be further deepened in terms of incentive and guarantee measures, which is also one of the obstacles to promoting the integration of industry and education.

2.2 The Composition and Objectives of the Photoshop Curriculum System

Photoshop is one of the essential basic tools that students majoring in design-related disciplines must master. By learning Photoshop, students can proficiently acquire skills such as image processing, compositing, and creative design, enabling them to undertake design work including posters, logos, and brochures. This lays a solid foundation for their subsequent study and practice of other professional courses. For e-commerce majors, Photoshop is also an indispensable skill: mastering techniques like product image processing and retouching helps highlight the features and advantages of products, optimize e-commerce store webpages, and enhance the competitiveness of products.

The Photoshop course consists of teaching content, teaching methods, practical links, and evaluation methods. With teaching content as the core, it covers basic knowledge of Photoshop software—such as basic operations, tool usage, layers, masks, channels, and filters—as well as applied skills including image processing, compositing, and creative design. Teaching methods are crucial means to achieve teaching objectives, and a variety of methods are often adopted, such as case-based teaching, project-driven teaching, and task-driven teaching. Practical links may include in-class exercises, after-class assignments, course design, and internships. In-class exercises and after-class assignments help students transform and internalize classroom knowledge, fostering their comprehensive application abilities and innovative capabilities. The evaluation method, which serves to assess and provide feedback on students' learning outcomes, consists of regular grades and final exam grades.

2.3 Current Situation of the Photoshop Course Practice System and Analysis of the Demand for the Integration of Industry and Education

Currently, the teaching content of the Photoshop course is disconnected from the actual post requirements. Many teachers focus on explaining software tools and commands in their teaching, with little coverage of application scenarios and design thinking in real projects. For example, in the teaching of image compositing, the content may only include simple image stitching operations—aimed at helping students master basic layer operations and the use of selection tools. However, in actual work, image compositing often requires much more complex creativity and techniques [7]. The expression of specific advertising information and emotional messages requires the compositing of various elements, which not only demands students to be proficient in tool operation but also requires them to have good aesthetic ability, creative conception ability, and the ability to coordinate different elements. A prominent issue with the traditional classroom teaching method—centered on teacher lectures and demonstrations—is the disconnection between theory and practice. Students lack understanding of and exposure to real projects; mere mechanical imitation of teachers' operations makes it difficult for them to truly comprehend and master the application of knowledge. For example, teachers may elaborate on the parameter settings and effect presentations of various layer styles in class, and students can create corresponding layer style effects by following the teacher's guidance. However, once they need to select appropriate layer styles and make flexible adjustments based on different design requirements, students often feel at a loss. Practical teaching still mainly relies on in-class exercises and course assignments, which are usually simple operational drills targeting a specific knowledge point or skill. While course assignments are relatively more complex, they are completed in a virtual context—students do not need to consider factors such as actual printing requirements, cost control, or client needs. Since students have no first-hand experience of project processes and requirements in real work, it is hard for them to improve their practical abilities and skills in solving real-world problems. Additionally, the cooperation between schools and enterprises is not close enough. Currently, the assessment and evaluation method for the Photoshop course mainly consists of 40% process assessment and

60% final work assessment. Although the work assessment tests students' practical abilities to a certain extent, the proportion of students' thinking and innovation during the creation process is still relatively low in the overall evaluation. Moreover, there is insufficient assessment of students' professional literacy and teamwork skills—there are no relevant indicators in the assessment to evaluate professional qualities such as students' sense of responsibility, communication skills, and teamwork spirit.

2.4 New Requirements of the Integration of Industry and Education for the Photoshop Course Practice System

Under the background of the integration of industry and education, the content of the Photoshop course must align with enterprise development trends and meet enterprises' skill requirements for talents. Over the past five years, the demand for Photoshop talents in the e-commerce industry has been on a growing trend, which requires students to proficiently master the basic tools and operation skills of Photoshop, as well as possess certain e-commerce visual design knowledge and marketing thinking. They should be able to design attractive product detail pages and store homepages based on product characteristics and target audiences, and use techniques such as color matching and layout arrangement to enhance the visual effect and user experience of the pages.

In the graphic design industry, the requirements for creative design are increasingly high. Students also need to master skills such as 3D modeling and animation production, and use these functions to create innovative designs that meet customers' unique design needs. The course content should also be updated in a timely manner to incorporate the latest technologies and concepts in the industry. Currently, Photoshop has gradually integrated artificial intelligence elements, such as functions like intelligent recognition and automatic repair. The course content should keep up with the development of these technologies in a timely manner, allowing students to understand and master these new technologies. Additionally, the course content should guide students to establish an understanding of and attach importance to concepts such as sustainable design and user

experience design, so as to cultivate their comprehensive quality.

The integration of industry and education provides a favorable platform for cultivating students' professional literacy and comprehensive abilities. During the project implementation process, students need to cooperate closely with team members to complete project tasks together. In real projects, various unexpected problems often arise, such as changes in client requirements and the emergence of technical difficulties. Students need to learn to analyze problems, find solutions to them, improve their problem-solving and adaptability skills, and cultivate their professional sense of responsibility and dedication.

The integration of industry and education enables the integration of resources from enterprises and schools, realizing the complementary advantages of teaching resources. Enterprises possess abundant real project resources, advanced equipment and technologies, as well as experienced professionals, while schools have complete teaching facilities, systematic teaching theories, and a large number of student resources.

Enterprises can introduce real projects into schools to provide practical opportunities for students, and schools can invite enterprise professionals to work as part-time teachers to impart practical work experience and skills to students. Enterprises can also assist schools in introducing equipment and providing technical support, help schools build training bases, and improve teaching quality.

Schools can use their own teaching resources to provide talent cultivation and technological R&D support for enterprises: adjust professional settings and curriculum content according to enterprise needs to cultivate high-quality talents that meet requirements, and cooperate with enterprises to carry out technological R&D projects. By leveraging the school's scientific research capabilities and students' innovative thinking, they can help enterprises solve technical problems and promote enterprise development. Through the integration of industry and education, the optimization and sharing of resources between enterprises and schools are accelerated, which promotes the improvement of teaching quality and the development of enterprises.

3. Reform Strategies for the Photoshop Course Practice System Under the Background of the Integration of Industry and Education

3.1 Reconstruction of Teaching Content Based on Post Requirements

In the e-commerce industry, Photoshop is widely used in product image processing, store page design, and promotional poster creation. In the advertising industry, Photoshop serves as a core tool for creative design, mainly applied in advertising posters, brochures, and packaging design. In the film and television industry, it is primarily used for pre-production concept design, storyboard drawing, and post-production special effects creation. In-depth research into these industries can clarify the core competencies required for Photoshop-related positions, providing important basis for the subsequent optimization and update of teaching content.

Based on post requirements, the teaching content of the Photoshop course should be comprehensively optimized and updated: streamline some overly basic and low-practicality content in traditional teaching to prevent students from spending excessive time on simple and repetitive operations; increase teaching efforts and allocate more class hours to content that is widely applied in practical work and has high technical value. It is also necessary to pay attention to the latest development trends of the industry and integrate cutting-edge technologies and concepts into the teaching content. Specifically, more explanations and practical training on these AI functions should be added in teaching, enabling students to understand and master new technologies and enhance their competitiveness. To enhance students' practical abilities and skills in solving real-world problems, teaching content oriented by real projects should be designed. Taking an e-commerce store decoration project as an example, students need to complete the entire process from defining the overall style of the store to designing the page layout. Before the project starts, students are guided to conduct market research to understand the preferences and needs of the target customer group, as well as the styles and characteristics of competitors' stores. In the product image processing phase, students use various tools and techniques of Photoshop to

process product images—such as cropping, color grading, image matting, and adding special effects—to optimize the product images. In the page layout design phase, based on the store's style positioning and product characteristics, students use Photoshop to design and typeset page elements, creating an attractive e-commerce store page with good user experience.

3.2 Application of Diversified Teaching Methods

The case-based teaching method can effectively improve students' learning outcomes in Photoshop course teaching. It allows students to intuitively understand the specific applications of Photoshop in different fields. Teachers guide students to think actively, encourage them to put forward their own insights and questions, stimulate their thinking, and help them gain an in-depth understanding of the design ideas and operation skills in the cases. Students are organized to conduct group discussions. During the discussion process, students can analyze cases from different perspectives, broadening their horizons. Through the case-based teaching method, students can not only master the operation skills of Photoshop, but also cultivate their aesthetic ability, innovative thinking and practical application ability, thereby enhancing their comprehensive quality.

The task-driven teaching method enables students to conduct independent learning and exploration in the process of completing specific tasks assigned to them, which can effectively enhance students' enthusiasm and initiative for learning. Tasks with targeted and challenging characteristics are designed based on teaching objectives and content. Students learn with these tasks in mind to acquire relevant knowledge and skills. During this process, students may encounter various problems; teachers should encourage them to try solving the problems on their own, and only provide appropriate guidance and hints to help students find solutions when they are truly unable to proceed. After the task is completed, teachers should promptly conduct evaluation and feedback—acknowledging students' progress, pointing out existing problems and shortcomings, and putting forward improvement suggestions. Through the task-driven teaching method, students can continuously improve their independent

learning ability and problem-solving ability in practice, while also better mastering the knowledge and skills of Photoshop.

The group cooperative learning method enables students to learn from each other and make progress together through collaboration. In teaching, teachers divide students into groups to complete tasks. During this process, students need to learn to communicate and collaborate with others, share their own ideas and experiences, and respect the opinions and suggestions of others. Teachers should regularly check and guide the group cooperation process, help students solve problems arising in cooperation, and promote the smooth progress of group collaboration. This method not only improves students' teamwork and communication abilities, cultivates their team spirit and sense of responsibility, but also allows them to broaden their horizons, learn from others' strengths, and enhance their comprehensive quality through cooperation.

Online and offline teaching is carried out using online platforms, which enriches students' learning resources and provides more flexible ways to acquire knowledge. Teachers upload teaching resources such as instructional videos, electronic textbooks, case materials, and practice exercises for students to conduct independent learning. Online teaching resources facilitate students to access relevant knowledge at any time, enhancing their understanding of the course content. Students can select appropriate learning content based on their own learning progress and needs: they can watch instructional videos after class to review the knowledge learned in class, and when encountering problems, they can also refer to electronic textbooks or online tutorials to find solutions. Offline teaching, on the other hand, focuses on practical operations and face-to-face communication and guidance. Teachers conduct on-site demonstrations and operational guidance, allowing students to gain a more intuitive understanding of Photoshop's operation process. They also provide key explanations and tutoring for problems and difficulties encountered in online learning to help students solve them. Through the online-offline blended teaching model, the advantages of both online and offline teaching can be fully utilized, improving teaching effectiveness and meeting students' learning needs.

3.3 Strengthening and Expansion of Practical Teaching Links

Build on-campus practical training bases with complete functions and advanced equipment, equipped with high-performance computers, professional graphic design software, and related hardware equipment. These bases provide students with a high-quality practical environment to ensure the smooth operation of software and the efficiency of image processing. The layout and facilities of the practical training bases should simulate real work scenarios to create a strong professional atmosphere, and set up different functional areas such as design studios, project discussion areas, and work display areas. Develop a comprehensive management system for practical training bases, clarifying the responsibilities and norms of students and teachers during the practical training process. Specify the operating procedures that students should abide by during the training period. Through a sound management system, the normal operation of the practical training bases and the smooth development of practical teaching are ensured.

Cooperating with enterprises to arrange internships for students and allowing them to participate in the development of real projects is an important way to enhance students' practical abilities and professional literacy.

Schools should actively expand off-campus internship bases, establish cooperative relationships with enterprises in industries such as e-commerce, advertising, and film and television, and provide students with abundant internship opportunities [8].

Introducing real enterprise projects while designing diversified practical projects can meet the interests and needs of different students, and enhance their practical enthusiasm and innovative abilities. Enterprise internships allow students to practice their practical application abilities and problem-solving abilities in real-world settings. In addition to real enterprise projects, schools should also design a variety of practical projects to cater to the diverse interests and needs of students. For example, projects related to students' daily lives and interests can be developed, such as post-processing of photography works and design of promotional posters for campus cultural activities—these projects enable students to exert their creativity and strengths in practice. Furthermore, interdisciplinary practical projects

can be designed, such as integrating Photoshop with disciplines like animation design and interaction design. This allows students to create animated works or web interfaces with interactive functions, thereby broadening their knowledge scope and horizons.

During the implementation of practical projects, emphasis should be placed on guiding and evaluating students, encouraging them to innovate actively and improve the quality of practical projects. Teachers should guide students to think about problems from different perspectives and propose innovative design ideas and solutions. When evaluating students' practical projects, various factors of the project should be considered comprehensively to provide students with objective and fair evaluation and feedback [9].

The order-based talent cultivation model is a targeted talent development approach. Schools formulate talent cultivation plans based on the specific needs of enterprises and sign "employment orders" with enterprises when students enroll [10]. Enterprises deeply participate in the talent cultivation process, providing guidance and support in all aspects from curriculum design and teaching content to practical training links. They put forward specific requirements for students' knowledge and skills according to their own post needs, and colleges then adjust the teaching content of the Photoshop course accordingly, adding cases and projects related to the actual work of enterprises. After graduation, students directly work in the enterprises that signed the orders, realizing a close connection between talent cultivation and enterprise needs.

4. Conclusion

Reform of the Photoshop Curriculum System under the Background of Industry-Education Integration under the background of industry-education integration, the reform of the Photoshop curriculum system requires that curriculum design be closely aligned with industry needs. It is necessary to conduct in-depth research on the competency requirements of relevant positions, update teaching content in a timely manner, and ensure the practicality and foresight of the curriculum content. Teaching content should be continuously adjusted and optimized in response to industrial development and changes, enabling students to master the latest knowledge and skills. Diversified

teaching methods should be adopted based on the characteristics of the curriculum and students' needs to stimulate students' interest in learning and their initiative. Efforts should be made to strengthen the construction of on-campus practical training bases, expand off-campus internship channels, and introduce real projects. This will improve the quality and diversity of practical projects and provide students with more practical opportunities. School-enterprise cooperation is a crucial approach to realizing industry-education integration. Schools and enterprises should establish stable cooperative relationships and jointly carry out work such as talent cultivation, curriculum development, and practical teaching to achieve mutual benefit and win-win results. Ultimately, this will foster more high-quality technical and skilled talents who can meet market demands.

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