Research on the Design of Pre-module for Photography Practice Courses in Universities Against the Background of Big Data

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ABSTRACT

At present, the photography practice courses in universities are mainly guided by the teaching syllabus of the university, and the experimental teaching center lacks corresponding pre-learning modules, which leads to the problem of adaptability and understanding between the use of teachers and students and the management of the center when the course enters the field practice of the experimental teaching center, resulting in a long running-in period. In order to shorten the running-in period, improve the efficiency of photography practical teaching, and improve the construction of experimental teaching center in universities, this study adopts the methods of literature research and experience summary to propose the creation of a pre-module for photography practice courses from the perspective of university experimental teaching centers, providing new dimensions and solutions for the practical teaching of photography courses and the construction of experimental teaching centers.

Keywords: *Big data, Pre-module, Photography practice course, University experimental teaching center.*

1. INTRODUCTION

As a way of creating images, photography has been unprecedentedly popular since its birth nearly two hundred years ago.[1] Nowadays, with the flourishing and transformation of image culture on the Internet, higher education related to photography also needs to keep up with the times and lay the foundation for talent guidance. How to keep up with the times and how to cooperate with experimental teaching management departments to improve teaching quality in photography practical teaching in universities is an urgent problem that needs to be solved. The pre-module of the photography practice course is established for students to create self-learning tasks and construct course knowledge in advance, and is a self-learning process that takes place before entering the practice area, emphasizing the student's main role in this process, and the role of the pre-module is to guide students to actively think [2]. Its main content includes the basic background, content, and form of photography, as well as the specific usage process and operating standards of the photography practice area in the experimental teaching center. The development of the pre-module for the photography practice course is based on the background of big data, with the experimental teaching center as the field and starting point, to lay a solid foundation for the specific practice of photography courses, and also to promote the system construction of university experimental teaching centers. It is not only the starting point for pre-course learning but also a data platform for learning feedback.

2. OBJECTIVES AND SIGNIFICANCE

At present, there is a lack of pre-module for photography practice courses developed from the perspective of experimental teaching centers in universities. Therefore, this article conducts research on the development of this module to consolidate the practical foundation, improve teaching quality, and improve the construction of experimental teaching centers in universities.

It explores the development of pre-guidance modules for photography practice courses in

universities, which are mainly developed from the perspective of experimental teaching centers, fills the gap in this area and provides new dimensions and solutions for the practical teaching of photography courses and the construction of experimental teaching centers.

3. RESEARCH PERSPECTIVE

The construction of a pre-guidance module for photography practice courses developed from the perspective of experimental teaching centers is aimed at solving problems such as further improving the quality of photography practice courses, mastering the latest photography information, standardizing practical operation processes, and collaborating with universities in their own practical fields. The pre-module not only provides teaching resources based on big data, but also focuses on collecting students' learning situation before specific practice. Through two-way feedback on learning situation and teaching objectives, it helps students master the early concepts of this photography course and stimulate their interest in learning. The pre-module of the photography practice course from the perspective of the experimental teaching center needs to focus on the management and construction of the center. While meeting the requirements of pilot teaching, it also allows students to understand the operating procedures and standards of the experimental teaching center in advance, which not only cultivates students' safety awareness but also lays a solid foundation for later practical teaching. This module is developed as the leading link of the experimental teaching center module system, matching the management of the experimental teaching center while also providing strong support for practice courses.

Therefore, the construction of this pre-guidance module will be discussed from two perspectives: the management perspective of the experimental teaching center as the main perspective and the student learning perspective as the supplementary perspective.

3.1 Experimental Teaching Center Perspective

The pre-module of photography courses arranged from the perspective of experimental teaching center needs to be based on the needs of the department, in addition to meeting the syllabus. As a specific venue for practice courses, the experimental teaching center differs from the management of departments, with its requirements mainly reflected in the management of venues, equipment, and safety. In the photography practice course, the experimental teaching center needs to meet the field requirements in practical teaching, hardware services in shooting practice, and specific shooting solutions. Therefore, before students enter the experimental teaching center, they need to understand and pay attention to the usage regulations of the experimental teaching center. On the one hand, this can help students prepare and understand specific practices before entering unfamiliar environments, so as not to be at a loss and cause low teaching efficiency. At the same time, it also facilitates the management of the experimental teaching center, such as reducing the damage rate of the venue and equipment, and making communication between management personnel and students smoother. This is both a need to improve teaching efficiency and a need for the protection and safe use of state-owned assets.

3.2 Students' Learning Perspective

To be student-centered, the pre-guidance module requires advance knowledge of students' pre-course learning and corresponding practical course pre-placement based on that pre-course learning.

3.2.1 Pre-class Learning Situation: Being Based on Analysis and Feedback of Students' Pre-class Learning Situation

The teaching model of "determining the starting point, methods, and strategies of teaching based on the learning situation" is based on the concept of "guidance on learning"[3]. The personalized teaching method with students as the main body has been increasingly valued in the process of teaching reform, and "learning situation", as a key element, should be given attention in teaching activities. Mastering sufficient and accurate learning situation information can help teachers conduct more precise teaching and help students engage in meaningful learning. However, in actual teaching, factors such as insufficient attention to learning situation, difficulty in datamation learning situation and scientific analysis of learning situation, and insufficient exploration of pre-class learning situation all lead to teachers being unable to fully and accurately refer to pre-class learning situation data in teaching. At the same time, it remains to be studied what kind of teaching effect can be

achieved through the use of learning situation in teaching. Therefore, this paper studies the use of information technology to collect and analyze pre-class learning situation, and applies this data to teaching activities [4]. American teaching psychologist Ausubel believes that "The most important factor affecting learning is what students already know, and we should teach based on their existing knowledge".

3.2.2 Practice Preset

From the perspective of the entire learning process, students' learning generally consists of three parts: pre-class preview, in-class learning, and after-class review. These three parts, as the three stages of student learning, are both relatively independent and have a sequential dependency relationship, and all have an impact on students' learning outcomes, which should all be given sufficient attention in the teaching process. Among them, preview is the first step in the entire learning process and plays an important role in learning. With the transformation of teaching theory in China from "teaching-centered" to "student-centered" and then to "learning-centered", education is increasingly focusing on students' autonomous learning ability. Preview is an independent learning behavior of students that precedes classroom learning, which is a concrete manifestation of autonomous learning actions, and it can be said that preview is the cornerstone of autonomous learning. As a practice course, before formally entering the practical area to use equipment, students should fully understand the various elements of practical operation and be prepared for potential problems. When entering the experimental area to start practice, they can practice with certain purposes, thereby greatly improving classroom efficiency. Through the delivery of big data resources, students can gain an early understanding of the cutting-edge trends, equipment, and operational steps related to photography, enter photography thinking and understand technical standards, in order to form a metacognition of the curriculum.

4. IMPLEMENTATION PLAN

In photography teaching in universities, photography teaching, apart from pure theoretical scope, is inevitably inseparable from the practical process. How can students gain necessary knowledge of photography before truly hands-on practice? How should the specific method be arranged? What aspects should be included in the specific content?

4.1 Pre-class Learning Situation Survey

"Learning situation" is a relatively broad concept, and this study positions it in aspects such as students' starting behavior, learning motivation, general learning preferences, existing knowledge in the curriculum field, and group characteristics. The entire pre-class learning situation is an important reference for experimental teaching. The database of the experimental teaching center will be adjusted and updated in real-time based on students' pre-class learning situation data, fully meeting students' preferences and needs while ensuring the compatibility between teaching and management.

The pre-class learning situation survey is a complete form of feedback:

- Collection of learning situation:

This can be done through pre-class online surveys. The specific Q&A mainly focuses on the following aspects: How much do you like photography? What photography skills do you currently possess? What photographers do you know? How do you understand photography? What image formats do you like? What's your understanding of photography equipment and venue requirements? etc.

- Learning situation organization:

The system analyzes and processes students' answers to the above questions and generates a pre information database for photography practice courses. The database will keep the pushed preview resources updated based on changes, providing intuitive first-hand information for teaching.

- Resource adjustment:

The adjustment of resources is mainly based on two aspects of data. On the one hand, it is about preview test data. The experimental teaching center system completes the pre-class test questions by selecting topics in the learning situation analysis system and sends them to the student account. After completing the self-study preview, students enter their own account and password in the student end of the system to complete the test questions online and submit them. The system collects and stores answer data based on the pre-class test questions completed by students. On the other hand, it involves analyzing, adjusting, and pushing data. The database is integrated and analyzed again based on the processed information, and on this basis, the

pre-module content of photography practice courses is adjusted and updated in a timely manner based on big data resources. This ensures that the pushed preview resources are updated in real time while also meeting the needs of all teaching parties, thereby forming a complete process of learning situation feedback.

4.2 Preview Resource Content

Preview refers to the independent self-learning of new lesson content by students before attending a lecture, in order to listen with questions, keep up with the teacher's ideas, and achieve better learning outcomes. Preview is to reduce overall learning time and improve learning efficiency. Before entering specific photography practice, the purpose of promoting preview resources is to enable students to understand the basic knowledge of photography in advance, including theoretical knowledge and practical knowledge. One part of it is to preview the knowledge points that are more basic and conceptual in photography, and the difficult knowledge points should not be too many. The other part is the specific practical operation process after entering the experimental teaching center field, which is convenient for the management of the center.

- Photography professional resources:

Photography literacy is the foundation for understanding photography, and photography professional resources are a prerequisite for ensuring the teaching of photography, as well as a theoretical resource for cultivating photography literacy. The cultivation of photography literacy should not be limited to understanding formal features, but should include three aspects: background, content, and form.[5] Background: It mainly includes general industry dynamics (commercial photography forms), latest and conventional technical requirements, and artistic dynamics (photography history and current art forms, etc.). Content: It takes specific representative artists such as Ansel Adams, Bresson, Cindy Sherman and others in the history of photography for example, to introduce the descriptive features (subject matters, symbols, stories, themes) and expressive features (feelings and meanings) of their works. Form: The formal structure and technical form of a photographic work.

- Experimental teaching center resources:

The "experimental teaching center" is one of the most important carriers in the teaching process of art universities. In addition to theoretical courses, all processes such as teaching demonstration, student creation, and hands-on operations carried out in teaching occur on the experimental platform.[6] The experimental teaching center is the specific teaching field for practice courses, which not only serves the specific implementation of practice courses, but also requires close cooperation from the users. In this process, the two coordinate with each other to improve and develop practical teaching. In order to ensure the smooth progress of practical teaching, in addition to the experimental teaching center's fulfilling its own responsibilities and actively coordinating and cooperating with practical teaching, it is also necessary for teachers and students who enter the field for teaching to use the center's resources in a safe, orderly, and standardized manner according to the center's regulations. So before teachers and students enter the center field, the resources pushed by the system include: "Management Measures for the Art Experimental Teaching Management Center", "Management Measures for Experimental Teaching Work", "Safety Management Measures for the Art Experimental Teaching Management Center Laboratory", "Emergency Plan for Laboratory Safety Accidents", "Borrowing and Returning System for Equipment Use", "Image Laboratory Site and Equipment Use Process", etc. After the teachers and students read them, the college will confirm it through the corresponding questions and answers and sign online.

5. CONCLUSION

With the rapid iteration of the Internet and technology, the visual presentation of photography in the field of art is also rapidly changing. The continuous updates in the form and application fields of photography have also put forward higher requirements for practical teaching of photography in universities. Improving the quality of photography practice courses, mastering the latest photography information, standardizing practical operation processes, and collaborating with universities in their own practice fields are important issues that urgently need to be addressed. The pre-guidance module for creating photography practice courses from the perspective of university experimental teaching centers is developed based on big data as the background, and has the ability to cope with massive data changes, achieve real-time update of resource supply adjustment, and ensure the volume and vitality of teaching resources. At the same time, it compensates for the lack of pre-

photography learning modules developed by universities from the perspective of experimental teaching centers, providing new dimensions and solutions for the practical teaching of photography courses and the construction of experimental teaching centers.

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