

Innovative exploration and practice of internet plus's blended teaching mode based on blue ink cloud class platform in the course of Mechanical Drawing and Computer Drawing CAD

Wen Hubin, Zhang Caiyan

Technician College, Huizhou City, 516003, Guangdong Province, China

Abstract: *Internet plus's hybrid teaching mode based on blue ink cloud class platform is a teaching mode supported by big data technology and relying on mobile terminals such as PC and smart phones, which can build a real-time interactive, instant and comprehensive feedback platform for teachers and students and improve teaching efficiency. Therefore, this paper briefly expounds the concept of internet plus's blended teaching mode based on the blue ink cloud class platform, and discusses the practical process and effect of this mode in the course innovation exploration of Mechanical Drawing and Computer Drawing CAD, hoping to provide some reference for the innovative practice of similar courses in mechanical specialty.*

Keywords: *blue ink cloud class platform, Internet plus, Mixed teaching mode, Mechanical drawing and computer drawing CAD*

1. Introduction

Mechanical Drawing and Computer Drawing CAD is a basic course for mechanical majors, and its main purpose is to cultivate students' drawing and reading ability. At present, the teaching plan of "Mechanical Drawing and Computer Drawing CAD" is mainly divided into offline two semesters, most of which are theoretical courses, after students have a preliminary understanding of the basic knowledge of mechanical drawing, they will be trained in computer drawing practice for several weeks. In the whole process of traditional teaching, the teacher-led declarative teaching mode of chapter structure is widely used, which restricts students' self-improvement space and affects teaching effectiveness. The internet plus blended teaching mode based on the blue ink cloud class platform is a mode that pays attention to the combination of theoretical module knowledge and practical operation, online self-study and offline guidance, which can effectively improve teaching efficiency. Therefore, it is very important to explore the application of this model in the teaching of Mechanical Drawing and Computer Drawing CAD.

2. Overview of internet plus's Blended Teaching Mode Based on Blue Ink Cloud Class Platform

Based on the blue ink cloud class platform, the mixed teaching mode of internet plus mainly analyzes the students' learning foundation and teaching requirements, and packages and sends the learning tasks, learning objectives and learning difficulties to the students with the help of the blue ink cloud class platform, and gives preview tasks by using the message push function of the platform. According to the task content, students can learn knowledge points and discuss difficult knowledge points online in advance, so as to lay the foundation for offline learning. In the online learning stage, teachers can learn about students' pre-learning, determine targeted guidance programs and eliminate students' knowledge blind spots with the help of the blue ink cloud class platform test function. In the whole teaching process, students are the main body and teachers are the guides, which can realize online real-time interactive guidance and improve teaching efficiency.

3. Based on the blue ink cloud class platform, internet plus's blended teaching mode explores the practice process in the course of Mechanical Drawing and Computer Drawing CAD

3.1 Before class, prepare resources

Pre-class is the main link of imparting curriculum knowledge under the mixed teaching mode of internet plus based on the blue ink cloud class platform, Teachers need to package and send teaching tasks, objectives and important and difficult contents to students, so as to provide learning resources for students to preview in advance. Compared with the independent operation of Mechanical Drawing and Computer Drawing CAD under the previous teaching mode, the mixed teaching mode of internet plus based on Blue Ink Cloud class platform needs to combine the two, regard the former as the foundation of the latter and the latter as an extension of the former, and explore the mutual promotion relationship between the knowledge points such as sheet and model drawing, arc connection and plan drawing practice, dimension marking and marking style, so as to encourage students to master the method of drawing standard mechanical drawings on the premise of mastering drawing principles and national standards. For example, students can use CAD three-dimensional modeling and flexible transformation of two-dimensional views to shorten the manual drawing time and provide sufficient time for in-depth exploration. Before the release of each class task, teachers can also use the experience value design function of each task in the blue ink cloud platform to check the completion of each student regularly, which lays the foundation for increasing teacher-student interaction, and promotes every student to get higher experience value.

It should be noted that in the preparation of materials before class, teachers should pay attention to the implementation of sufficient and practical knowledge, and cut down the course knowledge points appropriately. For example, in the teaching stage of "Part Drawing", teachers can dilute the theoretical teaching contents such as basic regulations, intersecting lines and intersecting lines, strengthen the drawing of part drawings based on CAD, and mark some basic parameters, and finally cultivate proficiency in drawing three views and full sectional views, semi-sectional views, partial sectional views and sectional views, and understand directional views, oblique views, partial enlarged views and dimensional benchmarks, as well as limit and fit, heat treatment, and so on

3.2 In class, guide internalization

Knowledge internalization is the ultimate guidance of the implementation of the teaching process under the mixed teaching mode in internet plus based on the blue ink cloud class platform. In the mixed teaching mode of internet plus, teachers can use the online test function of the blue ink cloud class platform to test students' mastery of preview knowledge in advance. By systematically evaluating students' answers to questions after logging in to the software, we can know the weak links of students' learning objectively and provide basis for improving the quality of classroom teaching. After the test results are counted, teachers can present difficult problems on the blue ink cloud class platform, and help students solve their doubts in the learning stage purposefully. After initially solving the students' doubts in the learning stage, teachers can design difficult problems again and present them completely in the blue ink cloud class platform, explain them in a targeted way, urge students to study and discuss each other, and provide basis for effectively eliminating students' knowledge blind spots.

Taking the teaching of "projection theory and projection system" as an example, in order to cultivate students' thinking and imagination ability in three-dimensional space and help students master the three-projection system and orthographic projection method, teachers can break the traditional way of orderly guidance according to the contents of teaching materials. Instead, it uses the online test function of Blue Ink Cloud Class Platform to develop test questions according to the idea of progressive ability [3]. Then, taking "drawing part drawing" as a module, comparing mechanical drawing to engineering language, integrating spatial structure expression based on CAD 3D modeling technology, marking and reading of part size, understanding technical requirements of shape and position tolerance and surface roughness, mastering title bar of proportional materials, etc., putting knowledge points in guiding language, taking "drawing part drawing" as guiding carrier, and overcoming the phenomenon of "broken chain" without subsequent contents.

3.3 After class, consolidate and extend

The hybrid teaching module of internet plus based on the blue ink cloud class platform includes online and offline modules, and the teaching tasks they need to undertake are quite different. Therefore,

the traditional mode of consolidation and extension after class cannot meet the needs of mixed teaching in internet plus [4]. Therefore, in order to promote students' online autonomous learning activities to adapt to the operation requirements of the learning mode on an objective level, teachers can comprehensively utilize the functions of activity participation, attendance statistics and task completion collection of the blue ink cloud class platform to estimate students' learning process and test students' mastery of professional knowledge, that is, classroom teaching effect. On this basis, proportional design can help students make up for their own shortcomings and consolidate homework problems. For consolidating homework after class, in addition to asking for help from classmates and teachers, we can also make use of the supplementary materials in the platform to further consolidate, so as to effectively enhance students' learning enthusiasm and cultivate students' autonomous learning habits.

Generally, internet plus's hybrid after-school consolidation and extension work based on the blue ink cloud class platform needs to integrate theory and practice. For example, after the teaching of "Drawing Method of Standard Parts and Common Parts", teachers can rely on the blue ink cloud class platform to integrate ToolBox use in Solidworks, drawing gear meshing engineering drawings by AutoCAD, and generating threaded connectors by Solidworks, requiring students to complete independently or cooperatively online after class to avoid the phenomenon of "polarization between theory and practice".

4. Based on the blue ink cloud class platform, internet plus's mixed teaching mode explores the practical effect in the course of Mechanical Drawing and Computer Drawing CAD

4.1 Real-time interaction to stimulate learning initiative

Internet plus's hybrid teaching mode based on the blue ink cloud class platform is a service learning position compatible with mobile phone login, cloud recording and downloading, etc., which meets the professional learning needs of students in different regions, school locations and even different ages. At the same time, each student can choose different learning ports according to their own conditions and environment, laying the foundation for online self-improvement [5]. At the same time, in the application process of internet plus's hybrid teaching mode based on the blue ink cloud platform, teachers and students are all in a consistent educational interactive platform. According to their own identities, combined with the curriculum requirements and progress, the important and difficult courses, related teaching plans and even pictures, videos and document resources are submitted to the platform, which can guide students to fully and timely understand knowledge and interact with students in real time. In the process of real-time interaction with students, it stimulates students' enthusiasm, expands students' thinking, and lays a foundation for students to establish self-confidence in knowledge learning.

4.2 Accurate tracking to achieve targeted teaching

Accurate and scientific tracking teaching is one of the unique functions of the class platform based on blue ink and cloud. With this function, teachers can track the implementation process of each link of teaching accurately and in real time, and have a more comprehensive and in-depth understanding of the educational guidance of teaching content [6]. In the tracking teaching process, teachers can not only grasp the preview, check and task completion of Mechanical Drawing and Computer Drawing CAD by liberal arts students at the first time through the management function on the teacher side of the cloud platform, but also check the students' participation in various activities by searching, so as to know the accuracy of students' homework completion at the first time, give appropriate reminders to students who have not completed their learning tasks in time, and adjust the teaching progress and content in a targeted manner, thus providing a basis for students to improve their autonomous learning effect.

5. Conclusion

To sum up, introducing the internet plus blended teaching mode based on the blue ink cloud class platform into the course teaching of Mechanical Drawing and Computer Drawing CAD can not only stimulate students' learning initiative through real-time interaction, but also build a targeted and efficient teaching classroom through accurate tracking. Therefore, according to the teaching situation of "Mechanical Drawing and Computer Drawing CAD", teachers can implement the mixed teaching concept of teacher-led and student-centered in three stages before, during and after class, and properly

explore the advantages of blue ink cloud platform, which has a significant effect on improving the practical ability of mechanical students.

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