

The Teaching Status of "Engineering Fluid Mechanics" in Colleges and Universities and the Study of Cross-school Study Practice

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Abstract: "Engineering Fluid Mechanics" is a basic subject of power and mechanics, civil engineering, architecture and other professional technologies. In order to ensure the realization of high-quality teaching goals, the modern education and teaching mode of "inter-school study" is adopted under the deepening reform of curriculum teaching. It is imminent. Compared with traditional distance education or MOOC education teaching mode, "inter-school study" not only breaks the limitations of traditional education and teaching, but also plays an important role in expanding students' horizons and meeting their knowledge needs. Therefore, this article is mainly based on the teaching status of "Engineering Fluid Mechanics", and the effective teaching strategy of "inter-school study" is discussed in depth, so as to promote the comprehensive development of students.

Keywords: Engineering Fluid Mechanics; Teaching Status; Cross-school Study; Effectiveness Strategy

Compared with other courses in the subject, rigor, close integration of theory and practice, and extensive content are the salient features of the "Engineering Fluid Mechanics" course. With the continuous deepening of the education system reform and the current strategic background of "sustainable development", the teaching effectiveness of "Engineering Fluid Mechanics" has attracted great attention from all walks of life. In order to ensure the achievement of high-quality teaching goals. The continuous optimization and adjustment of the teaching model is now imminent.

1. Analysis of the status quo of the implementation of the "cross-school study" mode of "Engineering Fluid Mechanics"

Compared with the basic courses of other majors, "Engineering Fluid Mechanics" mainly studies the balance of objects, the laws of motion, and practical applications. It covers many disciplines, especially in the field of environmental engineering. As a bridge to communicate with other discipline systems, "Engineering Fluid Mechanics" has there is no substitute, ensuring the efficient development of curriculum teaching is an effective channel to comprehensively improve students' innovative ability and problem analysis ability. However, at present, in the implementation of the "inter-school study" teaching model, due to the existence of the following problems. The overall teaching status of the course is not optimistic:

1.1 The mode of implementation is too single

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Compared with MOOC and distance education, although "inter-school study" has shown significant advantages in terms of teaching time and space, students can study this school (using the course side) and other universities (the course building side) through the bridge built by the platform. Shared courses, thereby expanding their horizons on the basis of meeting their own learning needs. However, it can be seen that the implementation of this teaching mode is to a large extent similar to the traditional teaching mode of "speaking-listening-practice", but the way students listen to lectures has changed from face-to-face to a system-oriented platform. During the learning process, students can use pause, retreat and other functions to study the content repeatedly and learn flexibly. However, due to the lack of good classroom interaction or the teacher just talks about the course knowledge during the interaction, the students still passively accept the content of the course. While it is difficult to mobilize students' learning interests, it is also difficult to effectively improve their own comprehensive abilities.

1.2 It is difficult to combine theory and practice in the teaching process

"Practicality" is also one of the salient features of "Engineering Fluid Mechanics", but due to the "cross-school study" mode in the implementation process, the biggest application advantage is to supplement the reserves of students' theoretical knowledge, but it is relatively difficult for students to achieve hands-on practice or direct practice and other needs, in the face of abstract theoretical knowledge and excessive equations, while students' interest in learning is constantly being reduced, their understanding and mastery of theoretical knowledge will inevitably be affected. The prerequisite for the construction of "efficient classroom" is to ensure the organic combination of theory and practice teaching. However, because "inter-school study" can only briefly introduce some cases, it is impossible to conduct on-site drills or practical operations, and students' interest and efficiency in learning are also it is bound to be greatly reduced.

1.3 The problem of unreasonable online resource setting is prominent

"Cross-school study" is a modern education and teaching mode. In the process of specific application, students can build a complete knowledge system through supplementary curriculum teaching resources, thereby comprehensively improving students' knowledge reserves while promoting their comprehensive development. For the "Engineering Fluid Mechanics" course, the problem of unreasonable online resource settings during the implementation of the "cross-school study" model is more serious. It is difficult to effectively mobilize students' subjective initiative while increasing the workload of students. The earth has affected the effectiveness of the application of this modern teaching model. Specifically, in terms of the current course content arrangement, some majors (such as management) not only have online videos far exceeding the set hours, but also cause students to pay attention due to the excessively long video playing time. It is difficult to concentrate on high levels, so to a certain extent, it also affects the quality of course teaching and student learning efficiency.

2. Analysis of the effective teaching strategy of the "inter-school study" model of "Engineering Fluid Mechanics"

2.1 Constructing a "student-centered" teaching system

Under the teaching reform of the "Engineering Fluid Mechanics" course, first educators need to clarify that the subject of teaching under the new curriculum reform is the "student", and then to ensure the full play of the role of the student body and comprehensively improve their own basic abilities and professional qualities. Teachers can also use questionnaire surveys and group students according to their actual situation. After that, different groups can collaborate and communicate with each other, thereby continuously improving students' professional abilities while enhancing their core literacy. In addition, in the process of concrete application of the "inter-school study" teaching model, in order to fully mobilize students' interest in learning and stimulate their subjective initiative, teachers also need to use Piaget's constructivist learning theory as an example when implementing the teaching model. Foundation, practice, creation, and student-centered, through the rational use of various modern education and teaching resources, to construct a teaching situation that fits the students' actual situation, thereby helping them understand and absorb the curriculum while ensuring the achievement of the teaching goal of "learning by learning" knowledge.

2.2 Taking "mobile phone and other smart teaching terminals" as the basic realization condition

In the process of the concrete application of the "cross-school study" model, although this modern model has shown

significant advantages in some aspects, it is similar to traditional teaching to a large extent in its implementation, so students learn while interest is difficult to be effectively stimulated, it is also not conducive to the overall improvement of their comprehensive ability. At this stage, in order to improve the current situation of education and teaching, educators need to use "mobile phones and other smart teaching terminals" as the basic realization conditions in the process of concrete application of the model, and pass the cooperation with teachers, teachers, and teachers on the basis of breaking the limitations of traditional teaching time and space. Other students conduct real-time interactive communication, so as to ensure the realization of high-quality teaching goals on the basis of fully mobilizing students' learning participation. In addition, in order to build an efficient classroom, educators also need to clarify that the basic prerequisites for achieving the goal of maximizing the benefits of the "cross-school study" teaching model are smart learning environment, smart learning resources, smart learning technology, etc. In the teaching reform, educators also need to capture all kinds of information in time to analyze the academic situation to formulate a suitable teaching plan. At the same time, various educational institutions also need to invest a lot of funds to build smart classrooms and smart learning platforms, which are used as cross-school training. The new mode of reading provides the support of a smart teaching environment.

2.3 Continuously optimize and adjust the process of "inter-school study"

Under the new curriculum reform, in order to maximize the application benefits of the "inter-school study" teaching model and promote the comprehensive development of students, it is urgent to continuously optimize and adjust the process of "inter-school study". Compared with the traditional "cross-school study" teaching design, in order to build an efficient classroom, first of all, in the pre-class teaching link, educators need to select materials and resources that fit their physical and mental development characteristics according to the actual situation and learning needs of students. Students are required to watch online at the same time, strictly control the length of online viewing. At the same time, teachers must carefully prepare pre-study test exercises according to the teaching requirements and content and assign them to students. Students can communicate with teachers online about doubts; In the classroom teaching process, education work students can use the flipped classroom format to group students scientifically, and then ask students to discuss problems in groups. After the discussion, they will feed back the unsolvable problems to the teacher. At the same time, teachers can also rationally use modern technology. , To strengthen the interaction with students and help students build a complete knowledge system.

3. Conclusion

In a nutshell, as a basic technical course with abstract concepts, many equations, strong theory, and wide practical application, "Engineering Fluid Mechanics" is the main course of some disciplines, but it has always been the focus and teaching reform of the course. Difficulties are the widespread existence of students' weak subjective initiative and low interest in learning, which affects the overall teaching effectiveness of the curriculum and is also not conducive to the comprehensive development of students. Therefore, continuous optimization and adjustment of the education and teaching model is now imminent.

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