Based on Internet Plus the Material Mechanics
Teaching Research and Practice

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Abstract. Teaching reform is a comprehensive process, the Internet plus strategic concepts and ideas based on the application in material mechanics course teaching, teaching content, study the Internet plus teaching methods, learning methods, teaching evaluation and other aspects, to change "teaching mode in teaching" to "learning oriented" the value orientation of teaching, improve teaching quality; cultivating students' innovation ability provides a guarantee.

Introduction
In the premise of quality education and the application type undergraduate education, students play the subjective initiative is particularly important; Internet plus education era has opened, the students' autonomous learning and teachers' teaching quality higher requirements. Therefore, how to combine the local undergraduate colleges will Internet plus strategic concepts and ideas used in teaching material mechanics, the study of teaching contents and teaching methods, the theoretical teaching content specific, visualize, situational, and fully mobilize the enthusiasm of students, change from passive learning to active exploration for boring and to improve the quality of teaching, has become an urgent problem.[1][2]

"Material mechanics" is one of the important basic courses of local undergraduate colleges and universities, material forming and control engineering, mechanical design and manufacturing automation, automobile service engineering, is an important part of the overall structure of the knowledge structure and ability to cultivate applied talents, for the subsequent "mechanical principle" and "mechanical design" course of study pave the way for and played an irreplaceable role in other courses; learn the mechanics of materials for students learning methods, the formation of the concept of engineering has an important role. With the rapid development of science and technology and the rich content of the course teaching, the teaching requirements are also getting higher and higher. But at present, the mechanics of materials teaching content, teaching methods, teaching methods and experimental skills are difficult to meet the requirements of teaching reform and innovative talents training objectives. Therefore, in the limited time to complete the teaching task needs to fully stimulate students' autonomous learning interest and improve the teaching quality of teachers, so as to provide a guarantee for the students' innovation ability.

The Optimization of Teaching Content
In the Internet plus era, new technologies and new applications of mechanics of materials is very easy to enter the line of sight of people, therefore, in the course of setting more emphasis on the basic knowledge of mechanics of materials, and highlight the characteristics of needs of each professional; joined the real cases of ANSYS in micro class video, deformation of solid circular shaft, stress distribution of solid circular shaft as shown in Figure 1, 2 shows, overhanging beam as shown in Figure 3, analysis model of the overhanging beam as shown in Figure 4, the overhanging beam shear as shown in Figure 5, the overhang beam bending moment as shown in Figure 6; ANSYS powerful postprocessing function allows more abstract stress image[1], make students have a perceptual knowledge of stress abstract, to a great role in promoting the students on the mechanical essence of the understanding of the connotation, and the application of finite element for the development of students later provided based on a good numerical analysis; in addition,
combined with the specific contents of the chapters, with the application of many real life and engineering practice thinking questions; previous teaching usually requires detailed summary of all Face, focused, but the micro teaching is summarized to play a role in the past, to pave the way for the following contents, causing the enthusiasm of the students to think deeply. Set thinking is a good solution to the form, the difficulty and the key is the content of the design. It is necessary to cover the knowledge points, but also to expand the new content, the level of ability to reflect the level of teachers. Through this course, good convergence and transition between basic courses and related follow-up and mechanical professional courses, to lay the foundation for future learning professional courses; share cutting-edge science of polymer materials through online course platform, stimulate students' interest in learning, learning content through extracurricular time extension, to solve the contradiction between the limited class hours.

Figure 1. Deformation of solid circular shaft.

Figure 2. Stress distribution of solid circular shaft.

Figure 3. Overhanging beam.
Teaching main line is the classroom teaching form which is constructed after the interaction between each teaching point and the effective integration. It is in the main line of the teaching act as a go-between, mutual connection, harmony between teaching, composition teaching the meaning of the complete chain, is the main clue of variable interaction in teaching activities. Because the micro class is limited to 10 to 15 long minutes, so the main teaching must be clear, teaching information cannot be refined compact.

The Reform of Teaching Methods
Once it is determined to select the form of micro class teaching, the traditional teaching methods of reform will become inevitable. In the classroom teaching, the reform of teaching method and teaching means is carried out. Pay attention to the heuristic and discussion teaching method, study style, idea and teaching method will flip the classroom, micro courses, Mu class and other advanced teaching combined with the typical teaching case design, abandon Tangguan thought, fully mobilize
the enthusiasm of the students "initiative", with students as the main teaching work, and take the method step by step in guided learning. In the teaching process, and strive to highlight, clear logic, classroom interaction between teachers and students, emphasizing the heuristic, implement the "teaching" and "guide" and "thinking", "induction" and "development" teaching and learning mode; in the process of classroom teaching, the new field of mechanical multi application examples and teachers the research example, using "case analysis", "inquiry" and other open teaching, guide students reading thinking, inspire and cultivate students' innovation consciousness, innovation spirit and innovation ability.

In the teaching, try to tell the reason that first phenomenon, the essence of IT teaching method. By citing the common phenomena and events to arouse students' interest in learning, and then follow the teaching ideas step by step to explore reasons; also can adopt the method of teaching, teachers guide, students focus on the practice of combining in the classroom teaching, give students' play learning enthusiasm, initiative and consciousness of space.

Students Learning Style

Stimulate students' autonomous learning initiative, the combination of classroom learning and Internet learning. In exchange with students, to promote equality between teachers and students to discuss, mutual understanding, mutual inspiration, so as to achieve the purpose of common improvement. The goal of course teaching is not only to make students master the basic theoretical knowledge, but also to cultivate students' ability to analyze problems and solve problems with theoretical knowledge. In the course of teaching, we can use the discussion, the way of teaching, from "single classroom teaching" to "multi form interactive communication", strengthen the interaction between teachers and students, expand the student's learning time and space. For example, in the end of each chapter, combined with the basic knowledge and related problems of concise several topics, students through online access to information, they are interested in the project PPT, class and students to share experiences, finished by teachers and students to comment, to play the initiative of students, at the same time the expression of training students' logical thinking ability and language ability. Students can also be in online courses and other public platform learning and curriculum related videos, web pages, broaden their horizons, to stimulate interest in autonomous learning.

Summary

The Internet plus strategic concepts and ideas used in material mechanics teaching, can improve their teaching quality and stimulate students' autonomous learning ability, so that "to teach" teaching mode is gradually changing into "learning oriented" teaching value orientation, promote the improvement of teaching quality; follow-up courses lay a solid foundation for students' learning, form the good habit of thinking, and with sustainable development, but also can provide a good way of thinking for the students in the senior stage of learning professional courses, and ultimately the formation of professional ability. At the same time, to provide a certain reference value for the application of Internet plus in other courses in philosophy.

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