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Discussion and Practice on Classroom Teaching Reform of Next Generation Internet Technology

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Abstract: "The Next generation of Internet Technology" is a professional course of network engineering, covering the emerging network technology and the development trend of the Internet. The traditional classroom teaching mode has some limitations in this subject, such as disconnection between theory and practice, slow updating of knowledge and so on. Therefore, this paper aims to explore the necessity of classroom teaching reform of "Next Generation Internet Technology" and put forward relevant practical strategies.

Keywords: Networking technology; Classroom teaching; Discussion and practice

1. First, the limitations of traditional classroom teaching mode

The limitations of the traditional classroom teaching mode of "Next Generation Internet Technology" mainly focus on the limitations of teacher-centered, attaching importance to memory and test taking, disconnection between theory and practice, slow updating of knowledge, and lack of innovation consciousness.

1.1 Teacher-centered

The traditional teaching mode is teacher-centered. Teachers play the leading role and impart knowledge in class, while students passively accept knowledge. This one-way way of teaching limits students' active participation and development of thinking skills.

1.2 Pay attention to memorization and test-taking

Traditional teaching mode emphasizes students' memorization of knowledge and training of test-taking skills. Students are required to recite and memorize a lot of information by repetition, and lack of in-depth understanding of knowledge and practical application ability.

1.3 Disconnection between theory and practice

Traditional teaching mode focuses on the imparting of theoretical knowledge, but often ignores the cultivation of students' practical operation ability and problem-solving ability, which cannot truly reflect the practical application of Internet technology.

1.4 Slow update of knowledge

With the extremely fast development of Internet technology, traditional teaching materials and teaching contents cannot be followed up in time, resulting in a disconnect between students' knowledge and actual needs.

1.5 Lack of innovative consciousness cultivation

Traditional teaching mode emphasizes knowledge indoctrination and test-taking training, and lacks opportunities to cultivate students' innovative consciousness and ability.

2. "Next generation Internet Technology" classroom teaching reform strategy

2.1 Increase practical teaching links and practice oriented teaching

Practice runs through the whole teaching process, from theory to practice, guiding students to participate in the actual network construction and application development. Through practical projects, students can better understand and master the practical application of Internet technology, and cultivate their practical ability and problem solving ability.

2.2 The use of digital teaching means, multimedia teaching to carry out the whole process

Multimedia technology and Internet resources are used to enrich the teaching content, which is presented in various forms such as pictures, audio and video to provide a more interactive and visual impact teaching experience. Multimedia teaching can stimulate students' interest in learning and increase their understanding and practical application of Internet technology.

2.3 Cultivate innovative awareness and ability, and encourage students to participate in innovative projects and competitions

Focus on cultivating students' innovative consciousness and ability in the classroom. Students are encouraged to come up with new ideas and solutions through innovative projects and case studies that solve real problems, fostering their innovative thinking and creativity. Encourage students to participate in innovative projects and competitions, stimulate students' innovative potential and independent thinking ability, and enhance students' competitiveness in the field of Internet technology.

2.4 Personalized learning and differentiated teaching, reflecting "student-centered"

Take full account of students' individual differences and learning needs, adopt personalized teaching methods and strategies. Through stratified teaching, group cooperative learning and other ways, according to the learning level and interests of students to provide different levels and content of learning tasks, stimulate students' learning motivation and participation.

2.5 Strengthen practical practice and establish a platform for practice and industrial docking

Cooperate with the Internet industry to establish a platform for practice and industry docking, such as cooperating with enterprises to carry out practical training projects, organizing students to visit practices, etc., so that students can contact the real Internet technology application scenarios, understand the development trend of the industry, and cultivate practical operation ability and professional literacy.

2.6 Enrich classroom teaching and stimulate students' interest in learning

Design fun and challenging classroom activities, such as interactive games, competitions, discussions, etc., to stimulate students' interest in learning and active participation. At the same time, students are encouraged to study and explore independently, and resources and guidance are provided to cultivate their independent learning ability and awareness of continuous learning.

3. "Next generation Internet Technology" classroom teaching practice case

3.1 Increase practical teaching by designing experiments and demonstrations for emerging Internet technologies. For example, when dealing with IPv4 and IPv6 in the next generation of Internet technologies, students are asked to calculate how many times the capacity of IPv6 addresses is that of IPv4, so as to deepen their understanding of technical principles and applications through hands-on operation and practice. For example, through software-defined networking (SDN) experiments, students can configure virtual networks, perform traffic management and network optimization operations, thereby deepening their understanding of the principles and applications of SDN.

3.2 Using digital teaching means, the course of Next Generation Internet Technology uses online teaching resources to preview before class. Meanwhile, multimedia courseware, rain class and super star teaching platforms are adopted to strengthen classroom teaching control. By means of digital means, the space limitation of traditional classrooms is broken by publishing homework through Super Star Learning, adding online tests and reviews. At the same time, it will help teachers to carry out curriculum construction and control.

3.3 Cultivate innovative awareness and ability, and encourage students to participate in innovative projects and competitions. Students are encouraged to participate in innovative competitions and research projects in Internet technology. Students can form teams and choose topics of interest for in-depth research and development, such as the Internet of Things, artificial intelligence, big data and other fields. Such competitions and projects can stimulate students' innovative potential and independent thinking skills, and provide opportunities to showcase their results. For example, through the study of "Next Generation Internet Technology", students have organized a team to carry out the innovation and technical realization of "Making clean by moving-Internet of Things Intelligent Robot", and participated in a number of innovation and entrepreneurship competitions, and achieved excellent results.

3.4 Lead students in project development and instruct students to participate in specific project development, such as designing and developing a web application or building an experimental network environment. Students can choose projects according to their interests and research direction and work together in a team to complete them. Such project development activities can cultivate students' practical ability, problem solving ability and teamwork ability.

3.5 Actively participate in online community discussion and sharing, and encourage students to participate in Internet technology-

related community discussion and sharing, such as technical forums, blogs, social media, etc. Students can exchange experiences and ideas with other technology enthusiasts in the community, share their own project experiences and research results, expand their horizons and get feedback. Such activities can cultivate students' cooperative spirit, critical thinking and cross-cultural communication skills.

3.6. Add flipped classroom links to reflect "student-centered"; "Flipped classroom" will be added to the usual grades, and students will introduce and demonstrate the next generation Internet technologies according to the content learned in "Next Generation Internet Technology", such as: Internet of Things, 6G, lifi, etc. Through the implementation of "flipped classroom", students' participation will be improved: In the traditional classroom, students usually passively receive knowledge, while in the flipped classroom, students need to learn the course content by preview videos, reading materials and other ways before class. Flipped classroom can improve students' active learning ability, cooperation ability and practical ability, and promote deep learning and personalized development. At the same time, it also provides more opportunities for interaction and practice, and enhances interaction and collaboration between teachers and students.

3.7 Field trips and industry cooperation, organizing students to conduct field trips and cooperation with the Internet industry. Students can visit Internet companies or research and development centers, learn about the latest technology trends and industry applications, and exchange and discuss with industry experts. In addition, students can also cooperate with enterprises to conduct practical training projects, solve practical network problems, apply the knowledge in practical projects, and improve their practical ability and professional literacy.

Conclusion:

The classroom teaching reform of "Next Generation Internet Technology" is of great significance for cultivating students' innovation ability and ability to cope with future technological development. Through the implementation of practice-oriented teaching, multimedia teaching methods, social learning and teamwork, as well as innovative projects and competitions, students' practical ability, innovation ability and cooperation ability can be effectively improved. In practice, teachers can carry out classroom teaching reform practice through experiments and demonstrations, project development and community discussion, so as to promote students' all-round development in the subject of Next Generation Internet Technology.

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