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Research on "mixed" teaching results based on OBE concept and BOPPPS teaching mode

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Abstract: In order to solve the core problem of how to improve the teaching quality of university courses, this achievement takes the OBE teaching concept as the guide, adopts the "student-centered" BOPPPS teaching mode, and adapts to the new requirements of the new era and new engineering subjects by reforming the teaching mode, teaching design, teaching content, teaching methods, and teaching means, improves the teaching quality of the courses, and achieves remarkable teaching and educating effects.

Keywords: OBE; BOPPPS; Mixed; Teaching results.

1. Introduction to achievements

In order to solve the core problem of how to improve the teaching quality of university courses, this achievement takes the OBE teaching concept as the guide, adopts the "student-centered" BOPPPS teaching mode, adapts to the new requirements of the new era and new engineering subjects by reforming the teaching mode, teaching design, teaching content, teaching methods and teaching means, improves the teaching quality of the course "Mechanical Manufacturing Technology Foundation", and achieves good teaching and educating effects.

(1) Reform the teaching mode: take the OBE concept as the guide, form the matrix curriculum syllabus, carry out the "mixed" curriculum teaching design with the BOPPPS teaching mode, and build a new online and offline mixed teaching mode.

(2) Reform teaching content: integrate scientific research results, teaching and research results and textbook compilation into the course teaching, reflect the cutting-edge and application-oriented content of the course teaching, strengthen the excavation of ideological and political elements of the course and the construction of online teaching resources, stimulate students' interest in learning, and highlight the teaching and learning effect.

(3) Innovative teaching methods: adopt the BOPPPS teaching model, which is guided by teaching objectives and student-centered, to design teaching activities. According to the characteristics of the teaching content, use case elicitation, group discussion, report and other methods. Teachers are responsible for organizing and controlling the classroom, returning the classroom to students, highlighting the "student's dominant position" in classroom teaching, and gradually forming new theories and methods of education and teaching, which guide practice, Applied to the curriculum teaching reform.

2. Main teaching problems to be solved

(1) The problem of the disjunction between curriculum objectives and talent training objectives. The formulation of curriculum objectives depends on talent training objectives, and forms a reasonable matrix curriculum syllabus under the guidance of OBE teaching philosophy to adapt to talent training objectives, thus completing accurate curriculum teaching tasks.

(2) The teaching content design of "teaching material as the center". Some teachers have two main tendencies in the teaching process: one is that they cannot leave the textbooks and read them according to the book, and the other is that they completely leave the textbooks and play freely. Textbooks are the main bibliography in the teaching process. They should not be "textbooks as the center", but should be "targeted" at talent training objectives and curriculum objectives. They should be reasonably selected and knowledge modules determined to achieve the curriculum training objectives.

(3) The imbalance between the single teaching supply and the diverse needs of students. The teaching content is rich, the teaching time and space are limited, the students' thinking is active and the teaching mode is rigid, which is the bottleneck affecting the teaching quality and effectiveness. The "student-centered" BOPPPS teaching model fully reflects the "student's subjectivity" in classroom teaching in the teaching design, learning and enriching the construction of teaching resources, and effectively solves the contradiction between the single teaching supply and the needs of students.

(4) The teaching concept is backward, and there is a lack of teaching reflection. Relying on curriculum construction and teaching reform projects, it actively participated in various teaching reform training, received new teaching concepts, published relevant teaching research papers, improved teachers' educational theory level, and solved the problems of teachers' backward teaching concepts and lack of teaching reflection.

3. Methods of solving teaching problems by achievements

(1) Constantly reform teaching methods and update teaching contents. Relying on the research of the relevant teaching reform projects of "Fundamentals of Mechanical Manufacturing Technology", taking the OBE concept as the guide, the matrix curriculum syllabus was formed, the "hybrid" curriculum teaching design was carried out with the BOPPPS teaching mode, and the new online and offline hybrid teaching mode was constructed. Integrate scientific research results, teaching and research results and textbook

compilation into the course teaching, reflect the cutting-edge and application-oriented content of the course teaching, strengthen the excavation of ideological and political elements of the course and the construction of online teaching resources, stimulate students' interest in learning, and highlight the teaching effect.

(2) Reverse teaching of scientific research and innovative talent training methods. Utilize scientific research projects to actively provide students with scientific research platforms and conditions, teaching and scientific research complement each other, and innovate talent training methods. Actively organize students to participate in the application of mechanical college students' teaching and research projects and related competitions, and have won many national and autonomous regional awards.

4. Promotion and application effect of achievements

After teaching reform and exploration, the reform has achieved remarkable results and had a broad impact. Through the practical teaching test of undergraduate students, the attendance rate and satisfaction rate in class have been significantly improved, and the rate of practical teaching and promotion has been significantly improved, which has been unanimously praised by students and peers.

(1) Promotion and application of BOPPPS teaching mode

Use teaching and research activities to gradually promote the application method of BOPPPS teaching mode, and some teachers are currently using this teaching method, and have successfully applied for relevant teaching and research projects.

(2) Research and practice of OBE teaching concept

Combine professional talent training program with OBE teaching concept to form talent training matrix, combine training objectives with graduation requirements, and improve the rationality of training program; Part of the curriculum syllabus and curriculum objectives are matrixed to more effectively update the teaching content and teaching methods, and accurately complete the curriculum teaching tasks.

(3) Construction of curriculum ideological and political database

When adopting the BOPPPS teaching mode for teaching design, the curriculum ideological and political objectives were added, and many teachers were organized to design the curriculum ideological and political teaching cases, fully excavate the ideological and political elements of the curriculum, and form the ideological and political database of the engineering professional curriculum, laying the foundation for comprehensively implementing the fundamental task of "building morality and cultivating people" and highlighting the ideological and political education of the curriculum.

(4) Significant achievements in teaching reform

The teaching method of "promoting learning by competition" can mobilize students' learning enthusiasm and initiative, cultivate students' professional awareness, unity and cooperation and innovation spirit. The competition is a combination of the most advanced technology in the field, and with the development of science and technology, each competition is still changing. This requires teachers not only to read and understand the textbooks themselves, but also to constantly absorb the current advanced teaching concepts and master the latest scientific and technological trends, which is conducive to the cultivation of dual-qualified teachers and improve the cultivation of students' comprehensive abilities.

5. Innovation points of achievements

Teaching reform is a systematic project that covers teaching models, teaching methods, and teaching content, covering all mechanical students. At the same time, it utilizes national quality courses, national resource sharing courses, national video open courses, and national Mu Ke course platforms to broaden teaching methods and update teaching content, and fully leverage the application, universality, and cutting-edge nature of the courses to achieve the curriculum development goals. The main innovation points of this achievement include:

(1) Innovation in teaching mode: Using a reasonable teaching team and rich online teaching resources, we have gradually constructed four stable mixed teaching modes: MOOC+in class exercises, MOOC+skill practice, MOOC+case study, and MOOC+group project. Through continuous reform and innovation, the traditional single teaching mode has been transformed into a new multiple mixed teaching mode, realizing the organic integration of online and offline teaching, effectively improving the quality of college mathematics teaching.

(2) Optimization and update of teaching content. Based on the OBE teaching concept and the BOPPPS teaching model, carry out mixed teaching reform. Combining professional talent training objectives, form a matrix curriculum syllabus, optimize and update teaching content, form stable knowledge modules, and focus on reflecting the cutting-edge and application-oriented nature of knowledge to meet the requirements of the transformation and development of our application-oriented college.

(3) Innovation in talent cultivation methods. Emphasize the cultivation of abilities and the application of courses, actively organize students to participate in applying for teaching and research projects and related mechanical competitions, provide students with scientific research platforms and create open laboratories, innovate talent cultivation models, and highlight the effect of application-oriented transformation and development talent cultivation.

(4) Innovation in education and teaching theory. Consolidate teaching reform experience into educational and teaching theories, and guide teaching accordingly. The person who completed the achievement condensed the research and practice of teaching reform to produce new theories and methods of education and teaching, and published a teaching research paper.

6. Promotion and application effect of achievements

After four years of teaching reform exploration, the reform has achieved significant results and had a broad impact. After the practical testing of 151 undergraduate students in the 4th session, the classroom attendance rate and satisfaction rate have significantly improved, and the practical teaching and promotion rate have significantly improved, which has been unanimously praised by students and peers.

(1) Significant impact of educational reform achievements

a. Promotion and application of BOPPPS teaching mode

Utilize teaching and research activities to gradually promote the application method of the BOPPPS teaching

model, and some teachers are currently using this teaching method, and have successfully applied for relevant teaching and research projects.

b. Research and practice of OBE teaching concepts

The Department of Mechanical and Electrical Engineering gradually combines professional talent training programs with OBE teaching concepts to form a talent training matrix, combining training objectives with graduation requirements, and improving the rationality of the training program; Part of the curriculum syllabus and curriculum objectives are matrixed to more effectively update teaching content and methods, and accurately complete curriculum teaching tasks.

c. Construction of curriculum ideological and political database

When using the BOPPPS teaching model for teaching design, we added curriculum ideological and political objectives, organized multiple teachers to design curriculum ideological and political teaching cases, fully explored curriculum ideological and political elements, and formed an engineering professional curriculum ideological and political database laying a foundation for comprehensively implementing the fundamental task of "cultivating morality and cultivating people" and highlighting the ideological and political education of the curriculum.

(2) Remarkable achievements in teaching reform

The teaching method of "promoting learning through competition" can mobilize students' learning enthusiasm and initiative, cultivate students' professional awareness, unity and cooperation, and innovative spirit. The competition project integrates the most advanced technology in the field, and with the development of technology, each competition project is still changing. This requires teachers not only to read and understand the textbooks themselves, but also to continuously absorb current advanced teaching concepts and master the latest technological trends, which is conducive to the cultivation of dual qualified teachers and the cultivation of students' comprehensive abilities.

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