



Hybrid Learning and Exploration of Artificial Intelligence Technology Courses in Higher Vocational College

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ABSTRACT:

Mixed learning is a student-centered, mixed online and offline teaching resources, optimize learning experience, and pays attention to practice and innovation. Engineering majors in higher vocational colleges pay attention to the cultivation of students' practical skills and innovation ability. How to cultivate students' practical innovation ability in the teaching of professional courses is one of the key problems studied by teachers in higher vocational colleges. This paper aims to explore how to hybrid learning mode into the artificial intelligence technology course, through the detailed implementation strategy and the implementation of specific case, show the training students' innovation ability, solve practical problems ability, improve the comprehensive ability, for higher vocational colleges engineering other course teaching to provide reference.

Keywords: Mixed learning; higher vocational education; artificial intelligence technology; and teaching strategy

INTRODUCTION

Mixed learning is a kind of typical student-centered teaching method, the teaching method to learning in complex, meaningful problem situation, mixed online and offline teaching resources, optimize learning experience, let the students in the form of group cooperation to solve the problems found in the process of learning, and learning hidden in the problem behind the scientific knowledge, in order to promote the development of their autonomous learning and lifelong learning ability. Higher vocational colleges generally offer artificial intelligence technology courses, which pay attention to the cultivation of students' practical ability and innovation ability. The mixed learning and teaching mode can effectively promote the development of students' active learning and innovation ability. This paper will systematically discuss the teaching mode of AI technology course based on hybrid learning from the aspects of teaching objectives, teaching design, implementation process and effect evaluation.

Teaching status quo

The teaching status of artificial intelligence technology courses in higher vocational colleges can be summarized as the following points: (1) the textbook usually lags behind the development of artificial intelligence technology, and the same textbook may be used for several academic years, thus learning the latest AI technology and framework; (2) the teaching method is the traditional teaching mode. First explain the theoretical knowledge points and then conduct targeted practice, Of course, this teaching model has some effect, Most students who listen carefully can master some AI skills, But this model makes students lack the process of active practical innovation, It is not conducive to the cultivation of students' independent learning ability and innovation ability; (3) The course learning objectives are not clear, After taking the course, Many students do not know why they took the course, What can I do after learning, What are the corresponding positions in the workplace, These problems directly lead to some students' learning enthusiasm is not high; (4) Full-time teachers have rich theoretical knowledge, But the lack of real corporate project experience related to AI, As a result, in the teaching process, real practical training projects cannot be designed to allow students to practice. In view of the above problems existing in the course, the author adopts the problem-oriented learning mode to study and practice the exploration in the teaching process of the artificial intelligence technology course.

Reconstruction of teaching content

Artificial intelligence technology courses are generally offered in the sophomore year, with 64 class hours, including 16 hours of theory time and 48 hours of practice class. In the freshman year, students have taken Python programming, which has a certain programming foundation. Combined with the characteristics of higher vocational students' "emphasizing practice and neglecting theory", the course content of artificial intelligence technology is reconstructed by project based on Python language. In the form of loose-leaf textbook, following the principle of "from easy to difficult, step by step", adhering to the concept of "sufficient theory, practice first", the course content of artificial intelligence technology is divided into seven projects for

reconstruction. Item 1: Python Foundation, Python Basic grammar, combined data types, functions, etc.; Item 2: Data analysis and visualization, The pip tool is used for use, Data visualization by using the Matplotlib library function; Item 3: Natural language processing, The NLP interface use of web crawler and Baidu AI, and data visualization; Item 4: Digital image processing, Anaconda Install the configuration, and use OpenCV to process the pictures; Item 5: Face detection and face recognition, Using Baidu AI, OpenCV to achieve face detection and recognition in images; Item 6: Mask wearing test, Use Baidu PaddleHub calling model to achieve mask wearing classification; Item 7: Iris Classification, Classification of the iris using common machine learning algorithms

Compared with the study of theoretical knowledge, most of the students in higher vocational colleges are more inclined to practical operation and active thinking. On the basis of students' existing Python programming, the reconstructed course content pays more attention to the application ability of ai third-party library, mature AI framework and platform, and pays more attention to the cultivation of students' document reading ability, coding and debugging ability, team cooperation ability and innovation ability. In the course teaching, the mixed learning teaching mode puts forward higher requirements for teachers. First, it is necessary to design the problems of stimulate students' learning interest and active thinking and innovation; the second is to guide the whole teaching process; the third is necessary to participate in the course and introduce feedback mechanism to continuously improve the course content.

Teaching implementation

Refining the important knowledge points and skills contained in the project, and designing the problems closely related with artificial intelligence technology in combination with Baidu AI platform. These questions need to be challenging and practical, aimed at stimulating students' interest and desire to explore. Taking the natural language processing project as an example, the design question: "How to use visualization tools to show customers' comments and tendencies of the Huawei smart bracelet?" Classroom teaching is implemented in the following procedures:

- (1) Group and role assignment. Based on the class number and the situation of each student's learning, students are divided into several study groups. Roles are assigned according to personal interests and expertise, such as product manager, project manager, algorithm engineer, software development, software testing, data analysis, project assistant, etc. This way of division of labor and cooperation not only exercises the students' teamwork ability, but also enables them to more deeply understand and apply the knowledge they have learned.
- (2) Independent learning and cooperative inquiry. The teacher first tells the theoretical knowledge points of the project. After each group clarifies the problems, the students begin to learn relevant knowledge independently, and constantly enrich their knowledge reserve through teaching materials, network resources and teacher guidance. Subsequently, the group members communicate and discuss according to their respective learning results, and then design the solutions together.
- (3) Program implementation and test, students use the knowledge learned, combined with practical problems, and start to implement the program. During the implementation process, they constantly test and optimize until the desired results are achieved. In the process of implementation and testing, teachers should give targeted guidance for common problems.
- (4) Achievement display and evaluation. After the completion of the project, each group will display the results. Teachers and other groups will evaluate the display results and make suggestions for improvement. This process not only exercises the students' expression ability, but also enables them to examine their own works from different perspectives.

Assessment and evaluation mechanism

Course comprehensive result by the usual grades and final result according to the proportion of 6:4, usually grades in the form of the project from knowledge skills, teamwork, innovative thinking, problem solving ability in four aspects according to the proportion of 4:2:2:2 quantitative evaluation, teachers according to the project record, the final assessment adopts the way of "theory + field". At the same time, the course evaluation mechanism is introduced, and the questionnaire survey is regularly used to obtain students' feedback on the course, listen to the opinions of teachers listening to the class, learn and study new teaching skills and methods, and improve the quality of classroom teaching through multiple channels and ways.

Summary

With the rapid development of artificial intelligence technology, artificial intelligence-based products have been widely used in all walks of life to promote economic development and affect people's lives. As the cradle of cultivating skilled talents, higher vocational colleges should adapt to the trend of The Times and cultivate innovative practical talents with artificial intelligence thinking and skills for national construction. In the teaching process of artificial intelligence technology course, problem-oriented learning is adopted, student-centered, and in the form of project, students' team ability and innovation ability are improved through team cooperation, independent learning, induction and summary in the process of continuous practice. Of course, in the implementation process, there are also some students who do not actively participate in the project, and the practical training content needs to be improved, which is also the continuous improvement in the follow-up teaching process, and also the driving force of the teaching reform.

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