Retraction

Retraction: Study on the Mixed English Teaching Model in Higher Vocational Colleges Under the Background of Big Data (J. Phys.: Conf. Ser. 1852 032013)

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This article has been retracted by IOP Publishing following an allegation that raises concerns this article may have been created, manipulated, and/or sold by a commercial entity. In addition, IOP Publishing has seen no evidence that reliable peer review was conducted on this article, despite the clear standards expected of and communicated to conference organisers.

The authors of the article have been given opportunity to present evidence that they were the original and genuine creators of the work, however at the time of publication of this notice, IOP Publishing has not received any response. IOP Publishing has analysed the article and agrees there are enough indicators to cause serious doubts over the legitimacy of the work and agree this article should be retracted. The authors are encouraged to contact IOP Publishing Limited if they have any comments on this retraction.

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Study on the Mixed English Teaching Model in Higher Vocational Colleges Under the Background of Big Data

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Abstract. This paper selects the reform of English course teaching mode in higher vocational colleges (HVC) as the research object, and studies how to make full use of big data (BD) technology to build a teaching platform to integrate teaching resources. In addition, we analyze the learning behavior of students and predict student learning effects. On this basis, a diversified and mixed English teaching mode in HVC is constructed, which enriches the theory of higher vocational English teaching and promotes the continuous improvement of the quality of higher vocational English teaching. What’s more, it ensures that students’ English ability is fully exercised and better adapted to the future society.

Keywords: Big Data, Teaching Platform, Mixed English Teaching Mode

1. Introduction

The society is constantly developing and progressing, and the data generated in various fields of society has also increased exponentially. This has also promoted the progress of various information technology methods. In order to meet the needs of storage, management and analysis of information data, network technology, internet of Things technology, mobile self-media and other technical means have emerged one by one. Human society has now entered the era of BD. People have gradually realized the importance of BD management and have widely used BD technology in all aspects of life. With the deeper and deeper influence of BD on human life, the education field has gradually begun to accept this technology and try to innovate the education model with the support of BD technology to meet the needs of talent training in modern society. At this stage, many colleges have carried out teaching reform and innovation and adjusted the original teaching plan according to the characteristics of the cited technology. It continuously enriched the level and connotation of the original curriculum system and explored the construction of more teaching practical experience. Some achievements have been made in the innovation of teaching mode, and the modes of school-enterprise cooperation, MOOC, and online course center have been generally recognized by domestic universities. However, these models still have certain deficiencies and need to be further supplemented and improved. The school-enterprise cooperation model has insufficient coupling between the school training system and enterprise training channels, and the construction of the network course system is not perfect. English subject is an important part of the higher vocational curriculum system, and its teaching reform effect directly affects the quality of talent training in HVC.

Based on the above background, this research takes the innovation of English teaching...
mode in HVC as the research object, uses BD technology to try to solve various problems in English teaching. In addition, we try to make full use of the existing research results and educational theories at home and abroad to construct a multi-mixed teaching model(TM) of higher vocational English based on the background of BD technology. So it reflects the leading role of teachers in higher vocational English teaching and it cultivate students' independent learning ability and the ability of modern learning technology. What's more, it solves the problems existing in the existing TM and provide conditions for continuously improving the effect of higher vocational English teaching.

2. Research Status at Home and Abroad

Internet technology is one of the fast-developing technical fields in modern society. In recent years, the education field has begun to apply Internet technology on a large scale. How to use modern Internet technology and information technology to create an efficient TM has always been research content in the academic research field. Many researchers at home and abroad have studied the integration of multiple teaching modes under the background of Internet technology from different perspectives. Li Haisheng and others have made a systematic analysis of the current implementation status and development direction of program design courses at home and abroad, and pointed out that it is necessary to use the Internet environment to carry out teaching reforms and improve the course content system and course evaluation system. To mobilize students' interest in learning, project teaching methods can be combined with course content. Cheng Geping made a analysis of the current teaching status of program design majors in universities in my country, pointed out the existing problems and the ways to solve the problems. He believed that it is necessary to use the advantages of Internet technology to optimize the existing teaching mode and build a comprehensive mixed TM. Starting from the teaching status of programming courses, Chen Jianwen summarized the teaching practice of specific content such as MOOC teaching, SPOC teaching, flipped classroom, logic organization and code teaching, and pointed out that the above teaching practical can help us design thinking training goals and improve college students thinking ability. Many domestic researchers have conducted research on the teaching mode of programming courses. Xu Chao and others selected the subject of "C# Programming" in the programming curriculum as the research object, and discussed how to implement the teacher-led and student-oriented teaching concept in programming courses. They proposed to build a program that can be used for the entire course of class. And build the learning resource platform in China to support students to carry out learning independently. Han Daojun and others have focused on TMs such as ASP.NET and MVC programs, and pointed out that such courses should adopt a TM that can integrate knowledge points to support students to better complete learning tasks, such as website development or web design.

Compared with domestic researchers, foreign related research started earlier, and the research perspective is broader. Armando fox pointed out that we should establish an online course mode suitable for students' individual learning, referred to as SPOC. Under the guidance of this theory, researchers try to build Berkeley software engineering MOOCS and apply it to teaching practice. After a period of follow-up investigation, it is found that the leading role of teachers in this teaching mode has been fully played, and the teaching effect is also relatively obvious. This research also proves that the traditional teaching mode can not meet the learning needs of modern students, and MOOC mode is a very effective supplementary teaching mode, which has significant application and promotion value. Poonam kharb and others applied the mixed teaching mode to the teaching practice of anatomy course. The research found that after adopting the teaching mode of combining multiple modes, students' learning autonomy was stimulated, and the teaching effect was relatively obvious. Kate O'Connor analyzed the effect and influence of the introduction of MOOCS in universities, and pointed out that the implementation of MOOC teaching mode in university campus can promote the network process of the University. It can promote the continuous updating of teaching mode and extend to the outside of campus, which has impact on education policy.

To sum up, how to construct a new TM and increase the degree of compatibility between
university teaching and social technology development, and better accomplish the goal of talent training is the common problem in the current domestic and foreign academic research field. HVC are education departments with the goal of cultivating technical talents. They should be based on contemporary society and build efficient TMs with advanced technical means. While improving the quality of course teaching, they should constantly improve the talent training system of HVC.

3. Construction of Mixed English TM Based on BD analysis

English courses in this school have been offered for many years. Although they have effect on talent training, the innovation of such courses is obviously insufficient and the teaching methods are relatively backward in the context of the new situation of national teaching reform, which affects the effectiveness of talent training. In response to this problem, this research takes the English course TM in HVC as the object, and explores how to use BD technology to construct a diversified TM of English. We can use the system to analyze the teaching data and find out the existence of teaching behavior. At the same time, use the Internet to expand teaching resources and build a resource platform with data storage, data statistics and data analysis functions to support higher vocational English teaching. On the basis of the common teaching mode of higher vocational English, integrate the original higher vocational English teaching mode and teaching resources, enrich the higher vocational English subject teaching theory. What’s more, accumulate higher vocational English subject teaching experience and provide more channels for students' professional learning, which helps students master the practical ability to solve problems. This study attempts to construct a multiple mixed TM with three main components: the analysis model of teaching behavior based on educational BD, the construction of a mixed teaching platform for vocational English courses, and a multiple mixed TM based on the background of BD. The overall structure of this design is shown in figure 1.
3.1. Teaching Behavior Analysis Model Based on Education BD
With the influence of the Internet on the teaching field, various kinds of data generated in course teaching are rapidly increasing. These data contains a lot of important information, which can record the learning process, learning behavior and related materials of students,
and analyze these data to find out the important information. It can provide a strong basis for teaching reform. And how to manage and analyze these data is an important problem to be solved in this design. After sorting out and summarizing relevant research results at home and abroad, this study selected the open data set edXedX2014 of the edX MOOC platform to establish a student learning behavior analysis model. Use this model to record various learning behavior data generated by students during the learning process, mainly including course code, course name, registration time, start time, end time, course days, number of registered students, and students who have passed exams to obtain certificates. Record information such as number, pass rate, etc. The recorded learning behavior information of students can be used as a reference to evaluate the learning effect of students. The evaluation basis of learning effect selected in this study mainly includes learning time, learning times, sampling statistics learning times, viewing videos, learning chapters, and posting Times etc. In order to accurately reflect the learning effect report, this model also needs to collect basic information such as the age, gender, and educational background of the learners. The method to evaluate the learning effect is the vector machine regression algorithm (SVR). In the specific calculation of the model, \( f(x) \) is used to express the learning effect, and the calculation process can be expressed by the following formula.

\[
f(x) = w_1 x_1 + w_2 x_2 + \ldots + w_n x_n + b
\]

3.2. Construction of Mixed English Teaching Platform Based on Learning Analysis

Blended teaching theory believes that teaching is a process of bilateral interaction, in which both the teacher's leading role and the student's main role, and the main role is the most important. Therefore, in order to improve teaching effects, it is necessary to ensure that students maintain sufficient interest in learning during the learning process. The mixed TM emphasizes the importance of the teacher's leading role in the process of the main role of the students, and believes that the teacher must provide effective supervision and control for the students. Before students study, teachers should prepare sufficient learning materials for students, including text materials, video materials, etc. After start learning, students should follow the teaching schedule designated by the teacher and the learning materials provided for autonomous learning, mainly using the Internet to watch text materials and video materials independently and discuss and communicate with the help of the network platform. In the process of learning to use the network platform to complete English learning, the network has recorded a lot of information about students, such as login time, number of learning times, learning time, posting time, number of postings, etc. Statistical analysis of these data can analyze the learning behavior of students and predict their learning effects. What means should be adopted to manage and analyze the above-mentioned information, and establish a prediction and analysis model. On this basis, real-time monitoring of students’ learning behavior and provide a basis for teachers to complete higher vocational English teaching tasks and managers to better manage courses is a problem that this design needs to solve.

In response to the above system functional requirements, this research has constructed a hybrid teaching platform that can analyze students' learning behavior. This teaching platform mainly includes the following functional modules.

1) Teacher module

The main function of this module is to support higher vocational English teachers to complete teaching management, such as managing student information, issuing teaching announcements, providing teaching resources, summarizing course knowledge points, test management, etc.

2) Student module

The main function of this module is to support students to complete higher vocational English course content learning, such as managing personal information, completing course learning, discussing and communicating on the network platform, completing tests, receiving announcements, etc.

3) Learning analysis module

The main function of this module is to collect all kinds of information generated by students' online learning, and to summarize and sort the information, and use this as a basis to
analyze students' learning behavior and predict their learning effects.

The three modules and their functions of this design are shown in Figure 2.

3.3. Construction of Mixed English TM in HVC Based on Data Analysis

This research aims to build a vocational English multi-mixed TM supported by BD technology. This model uses the student's English learning behavior analysis teaching platform as a means and English subject teaching practice as a carrier to integrate course learning, professional training, and graduation. The design is integrated, following the principle of combining online and offline, real-time monitoring and guidance of the entire process of students' English learning, analyzing the quality and effect of students' learning, and comprehensively improving the quality of vocational English teaching. This research uses BD technology to collect and analyze the data generated during the whole process of students' online learning, transforming students' learning behaviors into concrete and quantifiable data, and making teaching effect evaluation more intuitive. It provides a basis for teachers to adjust curriculum plans and improve teaching strategies, and provide timely feedback on teaching effects. The structural framework of this TM is shown in Figure 1.

The multi-mixed teaching mode of English designed in this research includes the following parts:

1) Project-oriented mixed teaching mode

Based on the curriculum knowledge system and practical projects based on the higher vocational English subject teaching theory, we establish a multiple mixed teaching mode for school-enterprise cooperation, project practice, comprehensive practice, social practice, etc. Using the established teaching platform, online teaching is appropriately supplemented on the basis of offline teaching to increase students' English knowledge and exercise students' English ability. In addition, it can effectively improve students' English proficiency.

2) Data analysis-oriented multiple mixed evaluation mode

We use the completed teaching platform to collect and record various data generated in the process of students' English learning in time, and gradually improve the bilateral evaluation
mechanism for English learning. We use the evaluation results generated by the teaching platform to establish teaching evaluation and learning evaluation models to further improve the scientific and objectivity of higher vocational English teaching quality evaluation.

4. Conclusion
This article takes the innovation of higher vocational English teaching mode as the research content, and discusses how to use BD technology to predict students' English learning behavior, how to use network platforms to integrate higher vocational English learning resources, and how to build a vocational English multi-mixed teaching under the background of BD technology. These several issues of the model are discussed. Research has confirmed that the teaching practice of English courses offered by our school is used to establish a teaching platform for integrating course resources and predicting students' learning in the department. On this basis, a multi-mixed TM of higher vocational English has been constructed. The organic combination of learning and practical exercise promotes the continuous improvement of students' English ability and ensures the quality of higher vocational English teaching.

References
[1] Xiong Yu, Chu Wen, Cai Ting, Yu Longjia, Tian Hang (2020). The design and practice of the supporting system for the application of BD in college education. Modern Educational Technology, vol. 30, no.11, pp: 91-97.
[2] Xiong Yu, Chu Wen, Cai Ting, Yu Longjia, Tian Hang (2020). The design and practice of the support system for the application of BD in college education. Modern Educational Technology, vol. 30, no. 11, pp: 91-97.
[3] Li Haisheng (2017). The application of project teaching method in programming course teaching under the background of "Internet+". Fujian Computer, vol. 33, no. 12, pp: 71-72.
[4] Cheng Geping, Wang Xinxin, Xiong Qijun (2017). Research on mixed practice teaching reform of programming courses in local colleges and universities. Modern Computer, vol. 13, pp: 11-15.
[5] Chen Jianwen (2017). Practice and thinking on the training of thinking ability in programming courses[1]. Computer Education, vol. 12, pp:106-108.
[6] Xu Chao, Ge Hongmei (2013). Based on the "C# Programming" course hybrid Learning.Education and Vocation, vol. 29, pp:154-155.
[7] Han Daojun, Jia Peiyan (2018). Application of Neo-Constructivism in ASP.NET MVC Web Programming Course. Software Guide, vol. 17, no.2, pp:224-226.
[8] Armando Fox (2013). From MOOCs to SPOCs. Communications of theACM, vol.56, no. 12, pp:38-40.
[9] Poonam Kharb Prajna, P.Samantha (2016). Blended learning approach for teaching and learning anatomy: Students'and teachers’perspective. Journal of the Anatomical Society of India, vol.65, no.1, pp:43-47.
[10] Kate O’Connor (2014). MOOCs, institutional policy and change dynamics in higher education. Higher Education, vol.68, no.5, pp:623-635.