International Journal of Science and Engineering Applications
Volume 12-Issue 03, 75 – 78, 2023, ISSN:- 2319 - 7560
DOI: 10.7753/IJSEA1203.1027

Multi-Terminal Platform for Blended Training of English Micro-Lectures Under the Trend of Smart Guiding Data and Online Integration

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Abstract:This paper proposes a software development system and method for multi-terminal embedded platform, which effectively integrates the development environment of each terminal embedded platform into a unified platform. The emergence of a large number of micro-lectures has provided a large number of high-quality resources for the classroom teaching practice of the blended teaching mode. Taking the teaching of industrial English courses as an example, this paper conducts practical research on the blended teaching mode based on micro-course resources. Users can easily develop applications based on various platforms without installing various cumbersome development environments and configuring terminal platforms on the local computer. A hybrid teaching mode framework is designed, and an evaluation method is proposed. Teaching practice shows that the use of blended teaching mode enhances the teaching effect, and it is worth popularizing in the basic computer courses of colleges and universities.

Keywords: Multi-Terminal Platform, Blended Teaching, English Micro-Lectures, Smart Education Data and Online Integration

1. INTRODUCTION

With the continuous development of today's terminals, there are various terminal platforms currently on the market, and application development environments based on various terminal platforms are different, which causes great trouble for developers [1]. Therefore, it has advantages and characteristics that go beyond other single teaching and learning methods. Blended teaching is also leading the way in education.

The micro-course resources endow the blended English classroom with a large number of high-quality resources and a rich teaching environment [2]. The inorganic and analytical chemistry course group that the author belongs to has started from the autumn semester of 2018-2019 [3]. The "computer basic course" in colleges and universities is responsible for the computer system, The important tasks of knowledge education such as commonly used operating systems, office automation, computer networks and applications, multimedia technology and software engineering, lay a solid foundation for the study of subsequent basic computer courses [4]. It tried to adopt the "five-in-one" blended teaching mode that organically integrates "online, offline, theory, practice, ideology and politics", and adopted this teaching mode for students from three majors in our school, including environmental science and engineering [5].

The application of micro-lectures in English teaching and the development of online and offline mixed teaching will help to expand and improve the existing higher vocational English teaching system [6], and also help to stimulate students' learning motivation, enhance their enthusiasm for learning, and achieve good teaching results. In this way, a new blueprint of "5G + smart education" is outlined [7], which not only provides a feasible path for solving the current dilemma of online learning, but also injects strong vitality into the road of education informatization with Chinese characteristics; big data-related technologies have been extremely effective. big development. Google's big data processing and storage technology Map Reduce [8] and GFS (go091e file system) L 2.

The industry-respected top-level Apache project Hadoop, the rapidly emerging NoSQL database technology, and the deep learning proposed by Professor Hinton [9] have all become current research hotspots. The existing research literature on smart education pays more attention to the concept of traceability, mining content, extracting features and creating models [10]. There are few researches on new information technology in smart education system and technology integration, and the technological drive of smart features. The "12015" plan launched by Singapore, relying on the smart education system, enables its citizens to carry out high-quality personalized learning, maintains the competitiveness of individuals and even the entire country through lifelong learning, and raises smart education to the height of national competition [11].

It can be developed for different terminals at the same time, which simplifies the steps that developers need to build a development environment in the early stage of development [12]. On the basis of a new teaching method, micro-lectures need to rely on information network technology, which can give students a new teaching enjoyment in teaching. On the other hand, it can realize centralized development on the development platform [13], which is convenient for collaborative development Meet the needs of the existing Devops development model. Inorganic and analytical chemistry is a compulsory basic course offered by the three majors of environmental science and engineering, environmental equipment engineering and materials science and engineering in our college [14].

The single traditional teaching mode of "teacher tells students to listen" certainly has its own advantages. With the rapid development of information technology, the combination of traditional teaching and MOOC micro-lecture teaching enables them to complement each other's advantages, that is, to play the leading role of teachers , and fully reflect the main

body status of students [15]. Reading and other resources are lacking, and students do not have enough practice in speaking and writing, and the learning effect cannot achieve the desired effect. Many college students have studied general English for at least one year in college [16].

It can better mobilize students' initiative, enthusiasm and initiative in learning, and further improve students' self-learning ability and innovation ability. This is because the function and role of teachers for students cannot be replaced by technology [17]. Teachers are always the first resource of the education system and the only source for students to receive education with "warm". However, how to organically integrate multi-source scattered data and effectively realize data sharing and fusion of different data sources has not been truly solved.

2. THE PROPOSED METHODOLOGY

2.1 The Smart Education Data And Online Integration Trend

Blended teaching is a compromise that combines the advantages of traditional classroom teaching and pure e-teaching. The teaching content is fragmented, and each unit is divided into several knowledge points, and each knowledge point has been optimized in detail whether it is placed in online student self-learning or offline flipped classroom teaching. Blended teaching is inseparable from abundant learning resources. The author has compiled a large number of online and offline test questions for each knowledge point. The definition of blended teaching is currently based on the opinion of a famous domestic scholar, Professor He Kekang of Beijing Normal University. The teaching content cannot be updated in a timely manner, and the main teaching method in the classroom is "teacher lectures", which lacks teacher-student interaction.

With the rapid development of information technology, the combination of traditional teaching and MOOC micro-lecture teaching enables them to complement each other's advantages, that is, to play the leading role of teachers. The application of micro-lectures to workplace English blended teaching has the following advantages: First, micro-lectures It is applied to workplace English teaching to create a more authentic language learning environment for English learners. The traditional higher vocational English teaching cannot guarantee the real language environment, so researchers carry out research from the perspective of teacher literacy. The teaching activities in the smart education environment generate massive data, and the ability to transform different types of data into teaching strategies that meet the individual needs of students is the data literacy of teachers.

In recent years, informatization education has made great progress. Under the influence of cloud computing, Internet of Things, artificial intelligence, virtual reality, augmented reality and other technologies, intelligent information technology and education interact and gradually integrate, gradually giving birth to intelligence and perception. As an important part of blended teaching, micro-course resource participation in teaching has its advantages over traditional classroom teaching, but teachers should correctly view and handle micro-course resources. A MOOC may have only a few teachers but tens of thousands of learners. The large-scale characteristics of MOOCs make it impossible for teachers to mark homework and test questions by themselves. For objective questions, you can use the automatic evaluation system, and for subjective questions, you can use the student-student evaluation system

2.2 The Mixed Teaching of English Micro-Courses Under the Trend of Online Integration

Language is constantly evolving, and there may be differences between the knowledge points covered in textbooks and the application of language in real environments. Teachers create a language environment and atmosphere according to the characteristics of learners through online and offline hybrid teaching, so as to truly achieve spatial education; and more comprehensively and extensively collect the learning data of teachers and students in the learning process, including classroom learning data, class Offline learning records, online learning data, and offline learning traces. The idea of the Semantic Web proposed in the literature [5] is a vision for the future Internet, which realizes the Web of data by providing a unified data description on the Internet. The W3C describes the Semantic Web as allowing people to create and store data on the web.

Processes and functional technology modules together form a complex ecosystem with mutual feedback. The ecosystem consists of smart learning with learners as the main body, smart teaching with teachers as the main body, and smart education resources and technical environment from the perspective of developers (smart education cloud). The "subject-object-subject" of educational activities In the structure, the educator and the educated, as two subjects, are their own in educational activities, but the objects are acted by intermediaries other than education, such as language, media, and environment. These intermediaries are indispensable in educational activities and realize certain way of education. Smart education resources and technical environment from the perspective of developers (Smart Education Cloud). It can be decomposed into three modules: learning resource module, tool platform and environment module, and intelligent service module. First of all, students' willingness to take classes is not strong.

Many students come to class because they are afraid of being called by the teacher. Teachers will deduct the corresponding grades for students who skip class and are late to ensure class attendance. Second, the course content is monotonous. Before class, teachers design the online teaching tasks of the unit according to the teaching content of the unit, make micro-class videos and related online learning resources in advance, and upload them to the public teaching resource library platform of the college. Students learn through the computer or mobile phone APP "Deshi E-learning". Teacher support service is also the epitome of social support in the field of education, which is reflected in teachers providing appropriate explanations in the teaching process, making constructive responses to mistakes, and helping teachers and students Care and respect for students in the process of interaction. Data publishers in Linked Data publish data just like building ordinary websites. Each publisher is responsible for data maintenance, data connection and data access control.

2.3 The Research And Development of Multi-Terminal Platform for Micro-Course Blended Teaching

In view of the current situation that the teaching effect of basic computer courses is not ideal, it is necessary to develop a hybrid teaching reform based on MOOCs and micro-courses for basic computer courses. First of all, blended teaching

emphasizes the student-centered teaching concept. Students learn independently through the network platform and plan their learning time according to their own situation. In the information age, the society requires students to master book knowledge, but also Master more extracurricular knowledge. The participation of modern educational technology helps to expand classroom teaching capacity and improve teaching efficiency.

The demonstration of modern media in the classroom can quickly and intuitively present the teaching content, and the reasonable arrangement of PPT makes the teaching ideas clearly displayed. In modern society, science and technology follow the path of rationalism, and the development is like a broken bamboo. Following rationalism's own logical deduction, it can promote the progress of technology itself to the greatest extent, but outside the technology itself, for the analysis of the connotation of teacher support services, Tardy believes that teacher support includes information support, tool support, emotional support based on social support theory.

3. CONCLUSIONS

The industry English blended teaching based on micro-course resources is not an alternative to traditional teaching, but is constantly colliding with traditional teaching and gradually integrating, and constantly supplementing and improving the teaching method system under the environment of information technology that is effective and feasible in practice. This model is a teaching model suitable for higher vocational students. The blended teaching mode is an effective supplement to the traditional English classroom teaching mode. In addition, the platform can also assist users to analyze the problems existing in the program and manage the source code version during the development process, which greatly improves the efficiency of software development.

4. ACKNOWLEDGEMENT

This article is the research result of the school-level key education reform project (Project No.: 2021005) of Jincheng College of Nanjing University of Aeronautics and Astronautics; the research result of the Philosophy and Society Fund Project of Jiangsu Provincial Department of Education (Project No.: 2021007).

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