

Construction of College Students' English Autonomous Platform based on Virtual Cloud Terminal System

Heng Wang

GuangXi Normal University, Li Jiang College, GuiLin, GuangXi, 541001, China
 ngehwang4255@126.com

ABSTRACT

Aiming at the low initiative of students in traditional offline teaching and online MOOC teaching in programming course teaching, this paper analyzes the function of virtual English platform, summarizes the experience of using virtual English platform, constructs hybrid classroom teaching based on virtual English platform, and studies the advantages of virtual English platform in hybrid classroom teaching. Taking Python language as an example, this paper first introduces the functions and uses of virtual English platform, and combined with my own teaching experience, puts forward a hybrid classroom teaching method combined with virtual English platform, analyzes the role of virtual English platform in hybrid classroom teaching, and puts forward the prospect of teaching methods of programming course in the future.

Keywords: Python, virtual, simulation

1 INTRODUCTION

The traditional online classroom is mainly taught face to face by teachers with the help of multimedia tools. Students often just listen passively. In order to enhance students' attention, teachers will set up communication and interaction, random questions, classroom tests and other links, which do improve some effects, but students often participate passively. In order to improve students' learning effect, the most important thing is to improve students' learning initiative. In addition, due to the limited classroom time, there are often more theoretical explanations and less practice hours, which results in the emphasis on theory rather than practice, which is not conducive to the improvement of students' programming ability. The advantage of MOOC is that students can learn the course in real time, and then can choose the topic of MOOC. However, MOOC courses rely heavily on students' learning initiative. Most students have poor learning initiative. There may be online classes, copying students' homework and completing tests. Students' scores lack fairness and it is difficult to reflect the real situation of mastering knowledge. In addition, due to the lack of face-to-face communication environment with teachers, students can not solve problems in learning in time [1-3]. Improve the curriculum system, "the difficulty of classroom gradually increases" and combine lectures:

the difficulties of textbook knowledge, words and reading courses need to be gradual. Figure 1 below shows how to improve the English curriculum system.

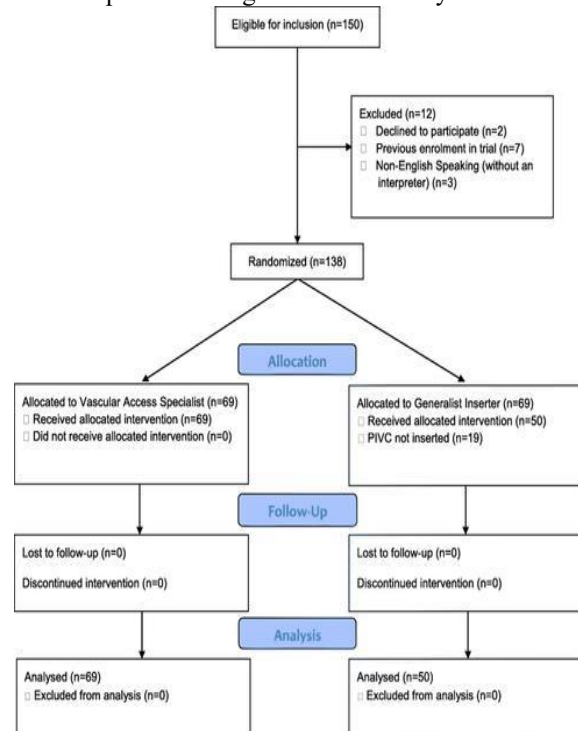


Fig. 1. Improve the English curriculum system

Word assault camp "100% synchronous textbooks, scientific memory and anti forgetting" 100% simultaneous textbooks.

It uses intelligent English tutor + real teacher double teacher online consultation, accurate evaluation, personalized customized learning methods, large class price, ultra-high learning efficiency and other ways. Many parents and students learn again many times. Children can not only easily improve their English performance, but also successfully spread to all disciplines through English learning. In order to meet the dual needs of students for the transformation of knowledge into skills and personalized services, the theory supports the "European language common reference framework: learning, teaching evaluation" CEFR, and the EU language joint reference framework is a set of suggested standards for foreign language research adopted in November 2004[4]. CLT The core content of "communicative language education and communicative teaching method" is to teach students to use language and realize communication in language. The course is graded based on the common language standard of CEFR Europe. For example, the difficulty of the course is A2.1, which is suitable for people above CET-4 who can't understand it. They insist on learning for 90 days, improve one level and master basic English communication skills. Let students cultivate their English thinking, independence and critical thinking through "situational dialogue" close to life, vivid and interesting "learning tasks" and free and innovative "group creation"[5]. Easily and naturally realize the improvement of pronunciation, vocabulary, grammar, reading and listening skills: situational setting, specific applications, real and interesting on-site teaching, and enhance the ability of English communication and communication. Efficient internalization of vocabulary / grammar = sentence type: transform knowledge into skills, systematically improve word / English writing, and complete English keynote speeches. Zaodao education is committed to becoming a global language school facing the world. It always adheres to the idea of allowing users to obtain a better learning experience at a lower learning cost. It is hoped that the early language school can be realized no matter where students are and what language they want to learn.

Sequoia intelligent English online teaching uses Sequoia intelligent English learning platform: word king learning system, grammar learning system, score winning King learning system to improve students' English vocabulary memory ability, oral ability and listening ability.

2 RELATED WORK

2.1 Introduction of virtual English platform

Virtual English platform is an auxiliary teaching platform for computer basic courses. It supports automatic evaluation of programs in multiple languages. It has rich item bank resources, supports phased tests and test simulation, and is convenient for teachers to teach and students to learn[6]. The platform provides teaching resources and online programming tools, supports the needs of course teaching management, student management, practice, notice, teaching research, and provides data visualization analysis of homework, which can provide data support for the teaching and research of basic computer courses [4-5].

$$\bar{p}^k = \|\Delta u_1(t)\|_\lambda + \frac{1-\bar{p}^k}{1-\bar{p}} m_1 d \quad (1)$$

$$\sup_{0 \leq t \leq T} \|I - L(t)C(t)P^{-1}(t)B(t)\| \leq \rho_1 < 1 \quad (2)$$

2.2 Using virtual platform to build rich online question bank

Practice is an important link in learning programming language. In the platform, we can not only build traditional multiple choice questions, judgment questions, multiple choice questions, etc., but also build online practice questions through Python virtual environment. Taking Python as an example, the shared question bank in the python123 platform provides a large number of practical questions shared by other teachers, especially the python computing ecological teaching case provided by Songtian teacher, which is close to the actual computing needs and can be copied into the personal question bank and then used in the teaching of self built courses.

According to the needs of the course, the question bank resources are constructed

The virtual English platform provides the resources of shared question bank from which teachers can choose questions[7]. However, different courses have different needs, and the topics on the platform are lack of personalization, which makes it difficult to meet the needs of all courses. Teachers can build their own question bank according to their own curriculum needs, classify them according to the knowledge points involved, and set the difficulty of the questions. In the teaching practice, the author uses the shared program design questions of Python language foundation, graphics drawing, file and data formatting in the platform. In order to better support

the course teaching, the course group has built its own question bank (84 questions have been built), supplemented the exercises of object-oriented, database and other advanced and application parts, and developed a question bank scheme suitable for its own course teaching. The distribution of knowledge points in the self built question bank is shown in Table 1.

Summary of the experience of building a question bank: using the virtual online English platform, teachers need to spend a lot of time designing and inputting questions in the platform, especially practical questions, and teachers need to design multiple groups of test cases. In the process of using it, I have summed up the following experiences for teachers to learn from:

Table 1 the distribution of knowledge points in the question bank of language design

category	Knowledge point description	number
Familiar with platform environment	Platform input and output	2
Language foundation	rule of grammar	36
Advanced language	Listen, speak, read and write	12
Language application	writing	24

3 DATA ANALYSIS

3.1 "Online + offline" hybrid classroom teaching method based on virtual English platform

Through the combination of online virtual English platform, setting up the "Online + offline" mixed classroom teaching mode of speaking and practicing, students' learning initiative can be improved. Virtual English platform through online virtual experiment, combined with quality evaluation mechanism, to enhance students' learning initiative. The learning method of speaking while practicing can help students understand and consolidate what they have learned in time, change from passive listening to active doing, and improve their interest in learning[8].

Combined with the virtual English platform, the hybrid classroom teaching mode of "Online + offline" and "speaking while practicing" is as follows: teachers choose to teach in the computer room, and organize the teaching content with knowledge points as the center. In the process of teaching, we can interact with students. After teaching a certain knowledge point, we can use the

online virtual platform for test practice. Teachers can check students' answers in real time, find students' problems in time, and give targeted guidance to help them catch up with the progress of the classroom. In the process of practice, for the common problems of students, unified guidance and explanation. After ensuring that 90% of the students complete the exercise, they will summarize and introduce the next knowledge point to explain and practice.

3.2 The role of virtual English platform in blended classroom teaching

(1) Through the virtual English platform, the mastery of knowledge points can be tested in real time. In classroom teaching, teachers can test by asking questions, but this way focuses on the understanding of knowledge points, and the lack of students' hands-on practice, and can only ask individual students, the coverage is small, can not grasp the situation of most students. Through the virtual English platform, teachers can see all the students' answers to the knowledge point test questions, covering a wide range, especially the students who can track the progress backward, and give appropriate help and guidance.

(2) Through the virtual English platform, we can fully understand the students' mastery of knowledge points. The traditional teaching mode of "speaking while practicing" is mainly for students to complete programming exercises in the development environment of personal computer. Teachers can see the answers of each student through the display of each student in the computer room. This way is not intuitive, teachers are not easy to read the screen, and it is easy to interfere with students' thinking, and can not see all students' answers. In the virtual English platform, teachers can see each student's program, and the data analysis is visualized, which can directly see the completion of different difficulty questions. Teachers can make supplementary explanation of knowledge points according to students' answers in real time[9].

(3) Through the virtual English platform, students' assessment results can be quantified, which provides a basis for students' process assessment results. It not only greatly reduces the workload of teachers' batch work, but also improves students' initiative. The virtual English platform supports automatic code evaluation. By setting multiple test cases, it can guide students to correct errors in the code, enhance students' ability to analyze and solve problems independently, and help students turn passive learning into active learning. And teachers are also free from the heavy task of reading code, can have more time to prepare lessons and tutor students[10].

(4) Teachers can organize competitions on their own. The platform provides the competition organization function, teachers can select the appropriate topic from the question bank resources, organize group competition, class competition, school competition and so on, improve students' learning enthusiasm. For excellent students, they can be recommended to participate in national or international informatics competitions. In order to effectively manage and motivate the competition team, improve the management mechanism of the discipline competition team, and give spiritual and material rewards to the winning students according to the award-winning level[11].

Mobile phone mobile phone (5) virtual English platform provides corresponding APP or official account. It can install and run logon access on mobile phones, and online practice on mobile phones, which improves students' convenience to learn by fragmentation time. As shown in Fig 2-4.



Fig.2.virtual simulation platform (a)



Fig.3. virtual simulation platform (c)

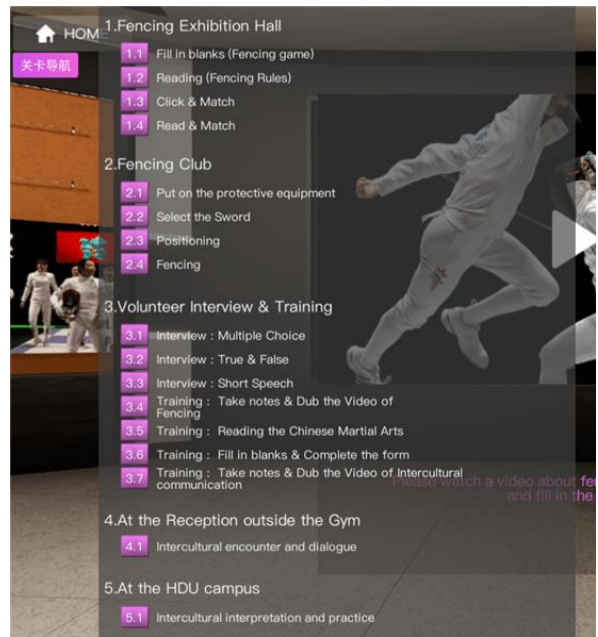


Fig.4. virtual simulation platform (b)

4 EXAMPLE ANALYSIS

Virtual online English platform stimulates students' learning initiative through online testing, effectively helps teachers master students' learning situation, and reduces teachers' heavy burden of homework correction. At present, python virtual online English platforms are widely used in domestic colleges and universities, such as Python 123, educator, octopus big data experimental training platform, etc., but each virtual online English platform also has shortcomings and needs further improvement. The virtual online English platform is shown in Figure 5 below.

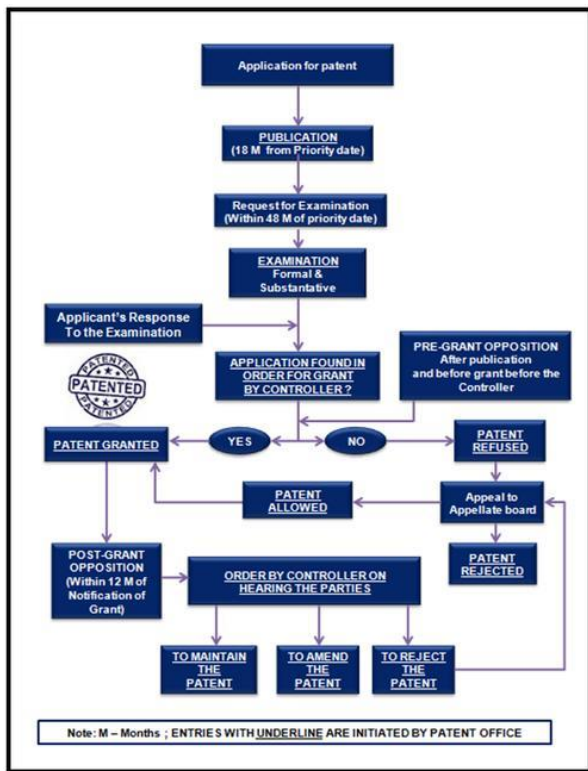


Fig.5. Virtual online English platform

The advantage of python123 platform is that it supports test simulation, and has rich cases of graph rendering[12]. The disadvantages are: Although there are abundant resources of shared question bank in the platform, the classification of questions is disordered, and teachers can not quickly find the resources they need; there is a lack of network programming, object-oriented and other application topics in the question bank of the platform. Educoder English platform improves students' interest through the form of "breakthrough", and provides code duplicate checking function, but does not provide multi-dimensional English task viewing function. Teachers can view the completion of each English task, but there is no visual data for all students to complete the task, so teachers can not view all students' English completion in this semester. Rich courses and case resources are built in the big data experiment platform, so students can complete the experiment independently and submit the experiment report according to the experiment content. But the main drawback of the platform is that it does not support automatic evaluation[13]. Teachers mainly grasp the students' screens and submit experimental reports to check the students' completion. In addition, the evaluation mechanism of each English platform needs to be improved. At present, the evaluation of students on

each platform is mainly composed of the scores of students' homework. Because students may copy homework, it is obvious that this evaluation mechanism lacks fairness. The python123 platform counts the students' online time, the time to complete the current topic, the number of reviews and other information, but it does not integrate these information into the students' performance evaluation[14].

5 CONCLUSION

- (1) Using virtual simulation experiment can effectively solve the problems of high cost and difficult to repeat operation of conventional experiment, reduce the learning cost and shorten the teaching time.
- (2) The introduction of virtual simulation experiment into the course teaching not only makes up for the lack of teaching practice, but also makes the teaching content more closely related to the actual project.
- (3) The virtual simulation experiment is introduced into the course teaching, which makes some difficult to describe construction process from static to dynamic, from boring to vivid, stimulates students' interest in learning, enhances students' learning initiative and innovation consciousness, and improves students' practical ability.

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