Research on the Experimental Teaching Mode of Poetry Recitation Based on Virtual Simulation

Jiaodi Yao[1]

[1]*College of Literature and Media, Xi'an Fanyi University, Xi'an, Shaanxi, China*
yaojiaodi@xafy.edu.cn

Abstract
Virtual simulation, as a newly arisen technology, serves as an essential part of the course of teaching in colleges and universities. This paper attempts to propose a teaching mode combining virtual simulation with ancient poetry. Virtual situations, created on the strength of the immersion, interactivity, and conceptualization of virtual technology, allow for classes beyond the limits of time and space. The intimate access to the time-honored poetry stimulates students' interest in learning, facilitates their genuine understanding of the profound connotation of ancient poetry, and improves their own learning ability, to the extent that they commit to being the inheritors of traditional Chinese culture.

Keywords: *Poetry Recitation; Virtual Simulation; Teaching Mode*

1 INTRODUCTION

With the continuous development and progress of modern information technology, it is an inevitable trend to promote the application of such technology in college curriculum design and teaching with national education reform concept as guidance. It is not only a real need for teaching method reform but also an integral part to further enhance the application-oriented undergraduate universities to convert the traditional teaching mode. The country, therefore, has been more urgent in creating new liberal arts and first-class courses [1]. The application of virtual simulation in courses is growing more common, while virtual experimental teaching for traditional humanities is still under active exploration.

With the introduction to Chinese culture as the center, it is necessary for this experimental poetry teaching research to develop the immersive poetry recitation of Chinese excellent traditional culture. Relying on its professionalism and regional characteristics, it gives full play to the interactivity and immersion of virtual simulation teaching experiment in order to cultivate students' emotion, aesthetic education, and ideological and moral sentiment and facilitates their inheritance of national culture spirit.

2 THE IDEA OF VIRTUAL SIMULATION EXPERIMENT CONSTRUCTION OF POETRY RECITATION

Classical poems, as the treasure of human culture and art, not only have beautiful words and harmonious rhythm, but also possess rich connotations and high artistic influence and aesthetic value [2]. The virtual simulation experiment of poetry recitation combines technologies of virtual simulation, network, and database to realize human-computer interaction and break through the teaching mode of the traditional classroom.

2.1 Emotional Beauty in Real-life Recitation

As a category of literature with a wide range of expressions, poetry itself is a true reflection of ancient life. Due to the limits of teaching time and conditions, there is not enough class time to meet the repeated recitation opportunities of many students in the classroom, and individual differences cannot be taken into account. This experiment, by adopting virtual simulation, provides visual scenes and beautiful music to help students empathize with the ancient poems and improve their understanding of the deeper emotional meaning of poems. Besides, the established recitation assessment standards contribute to standardizing and improving the students' reading of poems as well as promoting mandarin teaching.

2.2   Contextual Beauty in Immersion

Multimedia, as one of the teaching tools, invigorates and is closely related to contextual teaching [3]. The immersion experience of poetry recitation is a combination of virtual technology and contextual teaching, where students are immersed in the original context of each poem, more engaging than they are in traditional contextual teaching. Taking the ancient poem "Little Pond" as an example, a green lotus, a vivid dragonfly, a clear spring, etc. match a colourful ink painting of flowers, plants, insects, and birds as the background. The situation created by virtual technology goes beyond time and space, and changes the traditional two-dimensional plane world into a three-dimensional one, as if travelling back to ancient times, making students enjoy an immersive experience, further increasing students' participation and better arousing students' interest in learning.

2.3   Expressive Beauty in Innovative Imagination

The vivid and realistic scenarios enable students to explore and learn independently in the virtual world, which not only puts students in infinite reverie but also prevents students' thinking from being limited by external factors. Students interact and communicate with different people in the scenarios, which enriches learning resources and contents [5]. The poetry recitation module sets advanced training, where students are allowed to select poems for appreciation and active expression, and demonstrate their unique language charm. This allows the meaning, imagery, and emotion of the poems to act directly on the students' sense organs and also examines their accumulation of cultural knowledge through their expressions. In this way, students perceive the beauty, emotion, and expression in the realm of poetry, which largely enhances the effectiveness of poetry teaching.

3   THE RECONSTRUCTION OF VIRTUAL SIMULATION EXPERIMENTAL TEACHING SYSTEM OF POETRY RECITATION

The virtual simulation teaching platform of "Poetry Transcends Time and Space" adopts 3D simulation technology to show the inside and outside of the schoolhouse of Zhongnan, and constructs a virtual place as a simulation experiment space for ancient poetry recitation by simulating the layout of the ancient house [4]. Based on computer simulation technology, multimedia technology and network technology, the seamless docking of data interfaces and the recording and tracking of the whole experimental process are realized. The service-oriented software architecture development concept has integrated physical simulation, innovative design, intelligent guidance, automatic correction of

virtual experiment results and teaching management into this platform.

3.1   Experiment Objective

Students log in to the virtual simulation experiment platform through the Internet with their personal accounts and realize the evolution from experience and knowledge to ability mainly through the assessment of three major links. The first is that after reading the experimental operation instructions, students freely choose the character role and enter the virtual space of the real scene in substitution mode. The second link relates to knowledge acquisition, to strengthen knowledge accumulation by poetry assessment. The third is about the application, completing the tasks of poetry listening, recitation, and viewing works appreciation and participating in the higher-level poetry improvisation appreciation commentary, which eventually determines the rating and generates the e-certificate of the finish of the apprenticeship.

3.2   Function Module

Virtual scenarios with guided and hierarchical use of resources allow students to learn ancient poetry appreciation on their own. Everyone has the opportunity to learn about the ancient path of learning in an immersive and time-travelling manner. The virtual simulation platform for ancient poetry recitation has been constructed to form a multi-level experimental teaching system. The platform specifically includes six functional modules.

3.2.1   Experience Module: Exterior of Zhongnan House

Manual roaming, fixed path roaming, and viewpoint selection allow users to experience the architectural appearance and environment of Zhongnan House. People immerse themselves in the ancient school and touch the hidden secrets of Zhongnan Mountain;

3.2.2   Virtual Display Module: Poetry Library

The poetry library allows you to view detailed descriptions of all the poems in the experiment. Users learn poems on their own and increase their knowledge base;

3.2.3   Virtual Experiment Module: School House

The virtual Zhongnan learning path is in the courtyard of the schoolhouse. Only by following experimental steps including finding the screen, painting scroll, folding fan, and other six clues, the test can be completed and the apprenticeship finished;

3.2.4 Innovative Q&A Module: Audio Recording Collection

The audios of students' recitations are included in the recording collection, which gives students a platform for creation, facilitates students' collaboration on activities, and also provides opportunities for students to learn from each other;

3.2.5 Material Collection Module: My Achievements

Students can organize and integrate the audio materials and appreciation materials related to poems of interest by author, era or genre, etc., to build a database of their own interests;

3.2.6 Community Communication Module: Comments

A platform for teachers and professionals to communicate and discuss is provided. This platform is informal as a communication area, mainly used for teachers and students to exchange opinions as the seminar area provided for the continuous improvement of the platform.

3.3 Platform Structure

The open virtual simulation experiment teaching management platform is based on computer simulation technology, multimedia technology and network technology. Relying on service-oriented software architecture, it integrates physical simulation, innovative design, intelligent guidance, automatic correction of virtual experiment results and teaching management. This virtual experiment teaching platform features good autonomy, interactivity and extensibility. The platform is divided into five layers from bottom to top, including data layer, support layer, general service layer, simulation layer and application layer. Each layer provides services for its upper layer to form a complete experimental teaching environment.

3.4 Assessment System

The learning assessment is mainly "progressive", and the machine test can be scored directly. For "challenge training", students randomly select poetry for recitation and impromptu appreciation, and the teacher will give the score. The experimental process not only assesses students' knowledge and their organization of ideas but also examines the comprehensive quality of students' expression ability, thinking ability, and adaptability; it also corrects the irregularities of students' speech and realizes the purpose of multiple assessments.

4 RESULTS CASE AND ANALYSIS OF POETRY RECITATION VIRTUAL SIMULATION EXPERIMENTAL TEACHING

In order to verify the implementability and innovation of the virtual simulation experiment of poetry recitation, a sample of 2020 undergraduate students of Chinese language and literature majors in our university were followed up and specific cases of teaching results were given. A total of 220 students, including 96 males and 124 females, participated in this follow-up teaching, which lasted for 3 months. The teaching results were tested once a month and a survey on the approval of the teaching program was conducted.

As shown in Tables 1 and 2, the results of the mapping test before the virtual simulation experiment teaching and the results of the survey on the approval of the teaching scheme by the sampled students are given, respectively. It can be found that the excellent rate of sampled students under the traditional teaching program is less than one-fifth, while the number of failed students accounts for nearly one-fourth of the proportion. Since the virtual simulation, the experimental teaching program was only promoted and explained in the early stage, and no practical operation was carried out, more than half of the students maintained a wait-and-see attitude toward the experimental teaching program, and nearly one-fifth of the students did not look forward to the prospect of the new program.

Table1 Test Results Before Virtual Simulation Experimental Teaching

Achievement (out of 100 points)	Excellent (≥ 90 points)	Good (80-89 points)	Qualified (60-79 points)	Failed (<60 points)
Number of people	40	45	83	52
Percentage	18.2%	20.5%	37.7%	23.6%

Table 2 Results of the Approval of the Teaching Program by the Students Sampled Before the Virtual Simulation Experiment Teaching

Recognition (out of 10 points)	Satisfied (8-10 points)	General (6-8points)	Unsatisfactory (below6points)
Number of people	56	122	42
Percentage	25.5%	55.4%	19.1%

After three months of follow-up teaching, the results of three teaching outcome tests were obtained and the teaching program recognition survey was updated. Table 3 gives the three teaching result tests after adopting the virtual simulation experimental teaching program, where the change rate refers to the comparison with the change of the previous test results, the positive value indicates the increase rate, and the negative value indicates the decrease rate. It can be found that after one month of adopting the virtual simulation experimental teaching program, both the excellent rate and good rate of students' performance have been significantly improved, and the number of students failing has been significantly reduced. Two months after the adoption of the program, the number of excellent students further increased, and the excellent rate exceeded 50%, while the percentage of failed students has been reduced to 5%. The good rate has decreased as some of the good students have improved to the ranks of the excellent students, which also shows that the program has a significant effect on the progress of the high achievers. Three months after adopting the program, the student excellent rate has reached 60%, with 95% of the total number of good and above students, while the failure rate has dropped to 1.4%. Compared with the results, the student excellence rate has increased by 41.8% and the overall passing rate has increased by 22.2%. This sample follow-up teaching also verifies the practical innovation of virtual simulation experiment teaching.

Table 3 Results of the Three Tests After Virtual Simulation Experimental Teaching

Achievement (out of 100 points)		Excellent (≥ 90 points)	Good (80-89 points)	Qualified (60-79 points)	Failed (<60 points)
Test I	Number of people	88	97	14	21
	Percentage	40%	44.1%	6.4%	9.5%
	Change rate	21.8%	23.6%	-31.3%	-14.1%
Test II	Number of people	124	73	12	11
	Percentage	56.4%	33.2%	5.4%	5%
	Changerate	16.4%	-10.9%	-1%	-4.5%
Test III	Number of people	132	77	8	3
	Percentage	60%	35%	3.6%	1.4%
	Change rate	3.6%	1.8%	-1.8%	-3.6%

Table 4 gives the results of the three surveys on students' recognition of the program after the adoption of the virtual simulation experiment teaching program, where the change rate refers to the comparison of the change with the previous recognition survey results, positive values indicate the increase rate, and negative values indicate the decrease rate. It can be found that most of the students' performance has improved significantly after adopting the virtual simulation teaching program for one month. They have actually experienced the advantages of the program, the overall recognition has increased significantly, and nearly 90% of the students are satisfied with the implementation of the program. After three months of adopting the virtual simulation experimental teaching program, the satisfaction rate of students increased to 98.6%, while the number of dissatisfied students decreased to 0, which further illustrates the high recognition of the teaching program in the minds of the majority of students.

Table 4 Results of the Three Recognition Surveys After Virtual Simulation Experiment Teaching

Recognition (out of 10 points)		Satisfied (8-10 points)	General (6-8 points)	Unsatisfactory (below 6 points)
Test I	Number of people	192	20	8
	Percentage	87.3%	9.1%	3.6%
	Change rate	61.8%	-46.3%	-15.5%
Test II	Number of people	211	7	2
	Percentage	95.9%	3.2%	0.9%
	Changerate	8.6%	-5.9%	-2.7%
Test III	Number of people	217	3	0
	Percentage	98.6%	1.4%	0%
	Changerate	2.7%	-1.8%	-0.9%

5   CONCLUSION

Through the exploration of the model of virtual simulation experimental teaching of poetry recitation in the context of new liberal arts, it is needed to encourage students' independent inquiry learning and enable them to play innovatively and flexibly on their own. Besides, this new teaching mode combining virtuality and reality can effectively integrate high-quality teaching resources, serve multiple majors, schools, and regions, and play an important role in meeting the development direction of the new liberal arts and achieving the goal of training applied undergraduate talents. It is believed that in the near future, more people will enter the rich world of poetry and the splendid culture over 5,000 years of China through improved virtual technology. The excellent Chinese traditional culture deserves to be inherited and carried forward.

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