



Research on the Design of Cross-cultural Business Communication Virtual Simulation Experiment Teaching Platform Based on SPSS Data Analysis

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Abstract

Based on SPSS data analysis, this paper studies the cross-cultural business communication virtual simulation experimental teaching platform, which combined virtual simulation technology with web page effect to guide students to experience the style of world cultural heritage culture, simulate the specific processes of business reception such as pick-up service, check-in service, banquet service, scenic spot introduction, delivery service, etc. The research findings show that this platform can build and integrate information-based experimental teaching resources, and build an open, interactive intelligent virtual simulation experiment teaching platform. The construction of cross-cultural business communication virtual simulation experiment platform is an effective means of educational informatization, which builds a common platform between theoretical teaching and cross-cultural business communication application simulation experiment, makes students feel realistic experimental scenes and carries out independent experiments in the virtual experimental environment so as to greatly improve the effect of experimental teaching.

Keywords: *cross-cultural business communication; virtual simulation experiment teaching platform; SPSS data analysis*

1 INTRODUCTION

In recent years, the construction of virtual simulation experiment teaching platform based on big data has been paid more and more attention by colleges and universities in China. Especially affected by the COVID-19, many colleges and universities can only carry out online teaching. The virtual simulation experiment teaching platform can effectively solve the problem that experimental teaching cannot be carried out on the spot without being limited by time and space, and ensure the normal development of experimental teaching to the greatest extent [1].

After one year's course research and industry research, the results show that many universities in China have built virtual simulation laboratories for intercultural communication related courses, introduced advanced virtual simulation projects for teaching reform, and improved experimental training projects by improving teaching environment, reforming teaching methods so as to ensure that students majoring in Business English can adapt to social needs after graduation, and more and more domestic colleges and universities have used virtual

simulation training as campus training resources, which are widely used in experimental training teaching [3].

2 OBJECTIVES OF THE EXPERIMENT

The specific objectives of the experiment are as follows:

- To fully understand the Qilu cultural knowledge such as San Kong, Mount Tai and the Yellow River, learn Chinese cultural knowledge, local conditions and customs, improve the knowledge structure, enhance cultural self-confidence and national pride and become disseminators of Chinese traditional culture [8].
- To roam human and natural scenes without leaving home. Through human-computer interaction, students' cross-cultural communication ability can be improved, so that college students can communicate and exchange with others freely in the cross-cultural background.
- To correctly understand the cultural differences, so that college students can better understand their own

culture as well as other people's culture, respect other people's customs, establish a correct view of learning and values, and enhance the depth of cultural communication of the Chinese nation.

- To better master business etiquette knowledge, continuously enhance students' ability of critical thinking. Through the implementation of the virtual simulation experiment teaching project, students' ability to deal with cultural conflicts can be improved, various puzzles caused by cultural differences in cross-cultural business communication can be solved, and thus cross-cultural business communication ability can be improved eventually.

3 EXPERIMENTAL PROCESS

The experimental operation is divided into four stages. Firstly, log in to the web page to browse the contents of

the home page and understand the basic information of the experiment; Secondly, click "start experiment" to enter the knowledge ocean interface and learn relevant knowledge points of cross-cultural business communication; Then, click "enter VR" to enter the VR operation interface, and experience the five experimental processes of pick-up service, hotel check-in, banquet service, scenic spot introduction and drop off service through the experimental mode; Finally, return to the home page to view the experimental results and conduct self-evaluation, and give feedback on the experiment [4].

Among them, the construction of interactive scene is developed by 3D engine, which is composed of scene capture, virtual 3D character walking, knowledge point import and modular cross-cultural scene experience. Teachers and students can experience culture through virtual scene.

Knowledge points: 7 in total (as shown in Figure 1)

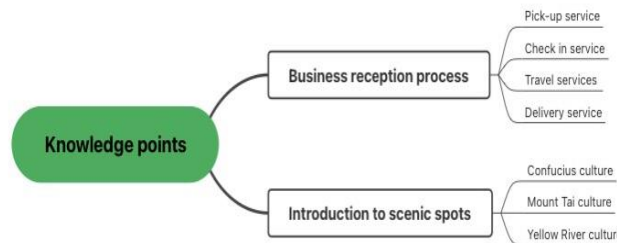


Figure 1: Knowledge points

- Through the notes on the cultural differences between China and foreign countries in the complete process of business reception, students can understand the essence of culture and communication, cope with cross-cultural conflicts, master the ability of cross-cultural adaptation, and avoid translation errors, pragmatic failures and conversation taboos in the process of communication.
- Strengthen students' expression ability in actual communication through oral dialogue simulation.
- The restoration of scenes including Confucius culture, Mount Tai and the Yellow River's cultural and natural landscape will bring users a real experience, which is of great practical significance for promoting the external dissemination of China's

excellent traditional family culture, and improving students' cross-cultural communication ability.

4 EXPERIMENTAL TEACHING METHODS

4.1 Purpose of Use

The platform integrates experimental tasks and cases, and integrates Chinese culture, multi-national languages and cultural applications in international business. It adopts case teaching and refuses the old-fashioned cramming.

4.2 Implementation Process

The project implementation process is shown in Figure 2:

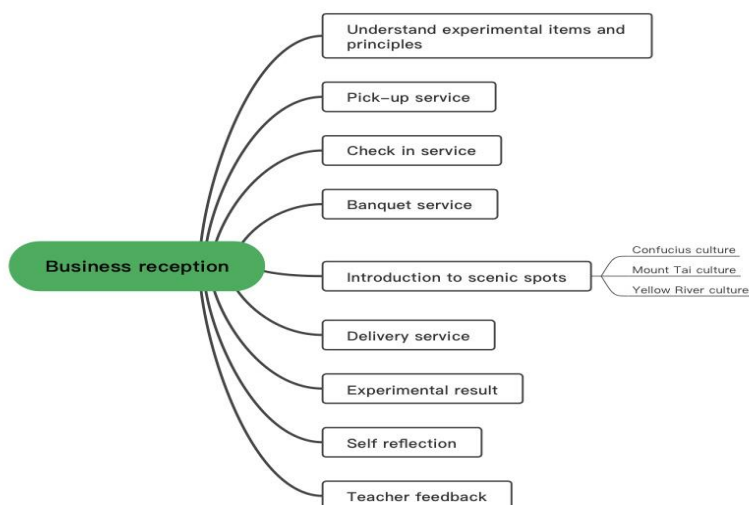


Figure 2: Implementation process

4.3 Implementation Effect

- By building a virtual environment for the development and change of things, it not only produces visual, audio-visual, tactile, olfactory and other sensory stimulation information to the participants, but also gives them an immersive feeling, so as to immerse themselves in a realistic environment [5].
- Students’ systematic learning of cross-cultural communication and business through simulation scenes can greatly improve their initiative and enthusiasm in learning, and also help to improve their cross-cultural business communication ability [7].

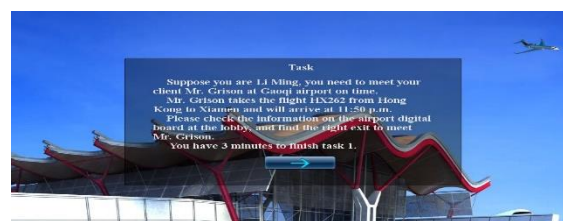
4.4 Experimental Methods

Through the cross cultural business communication virtual simulation experiment teaching platform, sound, pictures, PPT, video, 3D virtual scene and other “all media” are used as teaching means to carry out theoretical explanation, practical training, effect feedback and other experimental links, which is very helpful to improve students’ intercultural business communication ability [2].

Students log in to the website of virtual simulation experiment platform to understand the experiment project, conduct virtual experiment, submit report, teachers’ comments and students’ self-reflection, and complete the specific business reception process operation, such as pick-up service, hotel check-in, banquet service, scenic spot introduction and station service, etc.

4.5 Students’ Interactive Operation Steps

- Step 1: log in the website of the cross cultural business communication virtual simulation experiment teaching platform.
- Step 2: choose to understand the experiment, first grasp the introduction of the virtual simulation experiment platform of cross-cultural business communication as a whole and clarify the purpose of the experiment.
- Step 3: click to start the experiment and enter the test of intercultural business communication etiquette.
- Step 4: enter the “cross-cultural business reception” and carry out the virtual simulation experiment tour.

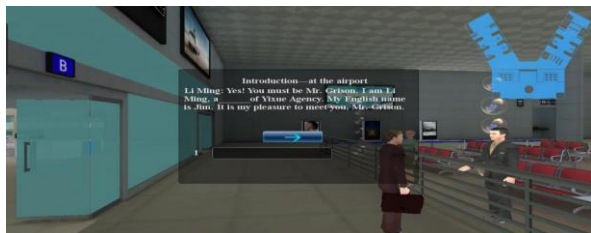


- Step 5: experience the pick-up service.

(1) According to the task background and tips, go to the airport to meet customers. After entering the international arrival hall of the airport, you need to find the international passenger exit according to the map and flight information table.



(2) Trigger dialogue with customers, focusing on business reception dialogue drills in different countries. Choose Exit B, the character walks past, contacts the character, and triggers the dialogue with the customer.



(3) Dialogue content check. After the dialogue is played, get familiar with the context first. Then dictation of words/sentences according to the subtitles, complete the dialogue, and click the e-talk icon for voice training.



- Step 6: assist foreign customers to check in after business pick-up. After the customer is brought to the hotel lobby, there is a dialogue between the customer and the front desk of the hotel. Through the dialogue, suitable rooms can be found for different VIP reservation levels.



- Step 7: click the banquet service module to lead customers to the Chinese restaurant. According to the task background and Task Tips, lead customers to Chinese restaurant, complete the etiquette test task.



- Step 8: click on the introduction of scenic spots to simulate taking guests to visit scenic spots and introduce Confucius culture.
- Step 9: take guests to the scenic spots and introduce Mount Tai culture.
- Step 10: take guests to the scenic spots and introduce the Yellow River culture.
- Step 11: click to enter the drop off service and take the guests to the airport.



- Step 12: complete the virtual experiment, confirm the experimental results and submit the experimental feedback.
- Step 13: teachers evaluate and give feedback on students' experimental feedback.
- Step 14: according to the results of the experiment and the teacher's summary, the students should reflect and confirm themselves.



5 EVALUATION OF TEACHING EFFECT

5.1 Teaching Experiment

In order to evaluate the teaching effect of the virtual simulation experiment teaching platform, this research applied two different teaching methods in two classes of Business English major in Shandong Agriculture and Engineering University with 30 students respectively. It should be pointed out that there is little difference between the mean score in two classes at the time of admission. It indicates that the two classes can be comparable. Class 1 as Experimental Class which adopted the virtual simulation experiment teaching, while Class 2 as Controlled Class which adopted the traditional experiment teaching method, and then they carried out the experimental test and counted the scores. The full score is 100, as shown in Table 1 which show the assessment results of the two classes. As shown in Table 1, the number of students in Experimental Class

with scores above 90 is 3 more than that in Controlled Class, and the number of students with scores above 80 is 5 more than that in Controlled Class.

Table 1: Mean score of the students in two classes in final exam

Class	Mean score	90-100	80-89	70-79
Experimental Class	80.37	7 23.33%	16 53.33%	5 16.67%
Controlled Class	77.71	4 13.33%	11 36.67%	8 26.67%

5.2 Results and Findings

To further verify the teaching effect of the virtual simulation experiment teaching platform, students'

scores in Intercultural Business Communication course were inputted into computer, and SPSS statistical analysis was used to analyze them. The results were as follows:

Table 2: Group statistics & independent samples statistics

Group Statistics

Class	N	Mean	Std. Deviation	Std. Error Mean
Score Experimental Class	30	7.2500	1.46069	.26668
Comparison Class	30	6.0333	1.98674	.36273

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Score	2.024	.160	2.702	58	.009	1.21667	.45021	.31547	2.11787
Equal variances assumed			2.702	53.263	.009	1.21667	.45021	.31376	2.11958
Equal variances not assumed									

From the above analysis, it can be seen that students in Experimental Class achieved better results than those in Controlled Class. It shows that the teaching effect of the virtual simulation experiment teaching platform is better than the traditional experiment teaching method. Therefore, it can be seen that by adopting the virtual simulation experiment teaching method, students have a

better and more comprehensive grasp of the experiment and a deeper memory of knowledge points. The teaching method of virtual simulation experiment can improve students' learning effect and cultivate students' innovative spirit, thinking ability, practical ability and autonomous learning ability [6].

5.3 Analysis of Questionnaire Results

The virtual simulation teaching experiment of cross-cultural business communication was conducted for one semester. At the end of the semester, a questionnaire survey was conducted on students' satisfaction with the experimental platform in June, 2022, and 59 effective feedbacks were received. The survey results show that the implementation of virtual simulation experiment teaching is good, and students have a high evaluation of the completion of the experiment.

5.3.1 Comparative Analysis of Virtual Simulation Experiment and Traditional Experiment

The survey results show that there are many shortcomings in the traditional experimental teaching, while there are many advantages of virtual simulation experiment. The statistical result is presented in the figure below:

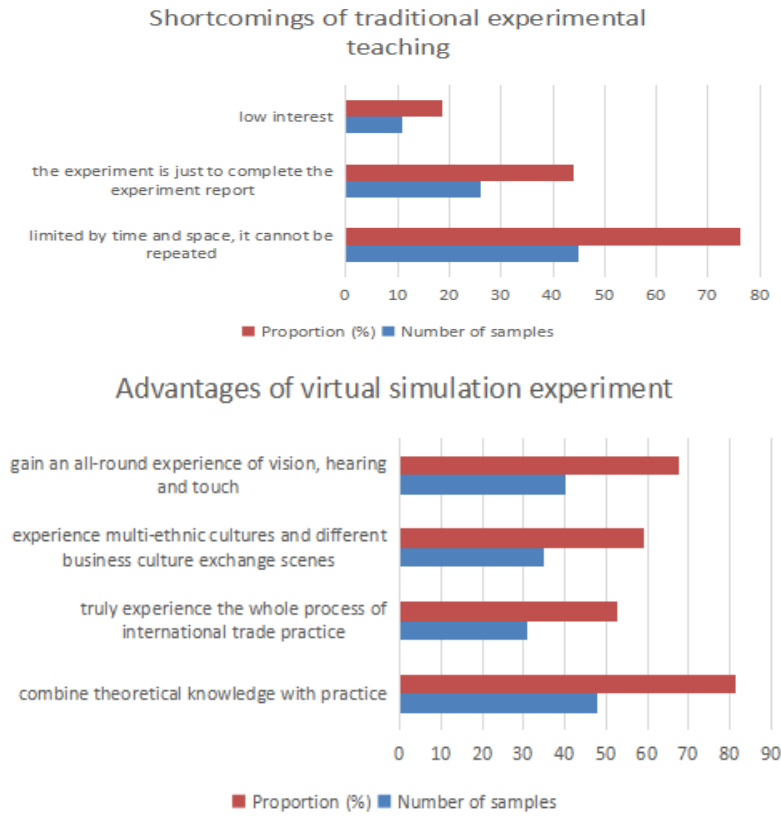


Figure 3: Comparative analysis of virtual simulation experiment and traditional experiment

5.3.2 Students' Gains from Participating in Virtual Simulation Experiments

The survey results in Figure 4 show that the knowledge level of students has been greatly broadened through the virtual simulation experiment. The students'

ability to analyze and solve problems has been improved to a certain extent. Students have a strong interest in international trade practice, which has laid a foundation for graduation practice.

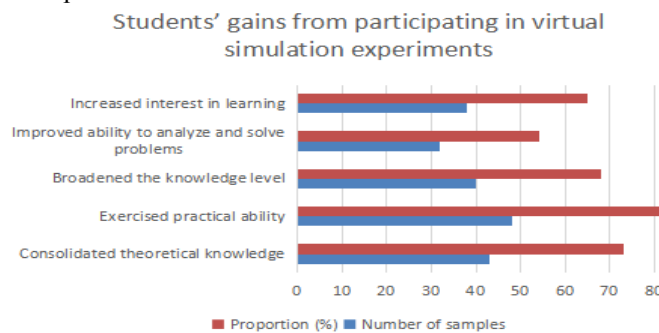


Figure 4: Students' gains from participating in virtual simulation experiments

6 CONCLUSIONS

The cross-cultural business communication virtual simulation experiment teaching platform based on big data system can effectively alleviate the teaching pain of the lack of real intercultural business communication scene in the process of intercultural business communication teaching. The introduction of the cross-cultural business communication virtual simulation experiment platform has built an interconnected platform between theoretical teaching and cross-cultural business communication application simulation experiment, effectively solving the problem of the lack of traditional business scenarios. The cross-cultural business communication virtual simulation platform built this time includes virtual simulation 3D simulation scene, world cultural heritage introduction, cross-cultural interaction and communication, which improves the teaching efficiency of cross-cultural business communication courses within the major, optimizes students' learning experience, improves students' awareness of cross-cultural communication, and can be used flexibly in the future cross-cultural business communication practice, so as to provide useful guidance for them to engage in international business practice in the future.

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