

Development of a virtual campus on Second Life: A case study of NCU Wonderland

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Abstract: Since Second Life (SL) was created, many educators have applied their teachings to this virtual platform. They have created lots of scenarios, games and tools in Second Life. However, the created scenarios, games and tools are rarely shared by other users. It is a pity that the resources in Second Life cannot be shared by users. Therefore, this research aims to create flexible and practical 3D learning environments and teaching aids. To achieve this goal, 3D learning environments and 3D teaching and learning resource center are built in Second Life. The teaching methods and teaching aids developed under these environments can be shared among users. In addition to 3D learning environments, there is also an excellent teaching exhibition hall. It is expected that these developments can help educators make the best use of Second Life.

Keywords: Second Life, NCU Wonderland, teaching aids, strategic alliance

Introduction

Second Life, a popular 3D virtual platform is developed by Linden lab in 2003. The difference between Second Life and other online games is that Second Life does not have fixed scenarios. Users can create any scenarios as they wish. They can sculpt objects, write Linden scripts and create animation objects in Second Life. Because of its flexibility, Second Life is used for education by many international institutes. However, the teaching resources created in Second Life cannot be shared by other users. Therefore, this research aims to build 3D learning environments and teaching aids to integrate the teaching resources created by other educational institutes.

Second Life is widely used in education field nowadays. [1] The teaching methodologies applied to Second Life teachings are game-based learning, task-based learning, authentic learning, etc. Students can get new knowledge by completing their tasks. Lin (2008) proposed that online businesses and community providers should put time and effort into ensuring that their customers are satisfied with information and system quality, as these were identified as the key contributors to member satisfaction when using virtual communities. [2] Thus, this research also considered teachers and students' needs when creating the teaching materials in Second Life. Brenda (2008) proposed that Factors such as proper training and orientation, appropriate strategies for integration and criteria for determining value-added activities should be taken into consideration when people apply their teachings to Second Life. [3] Therefore, this research also took training and orientation, appropriate strategies for integration into consideration when developing the teaching environments and teaching aids in Second Life. However, Baker et al. (2009) pointed out that many of the potential benefits and uses of virtual worlds in teaching still

remained verified. To examine the potential benefits of teaching in virtual worlds, the real world teaching methodologies are applied to virtual worlds in this research. [4]

This research aims to integrate the teaching resources in Second Life and combine the educational organizations which use Second Life for education in Taiwan to form a strategic alliance. The strategies used to form a strategic alliance in this research are technique development strategy, promotion strategy and alliance strategy.

Technique development includes developing teaching aids and learning environments. The new teaching aids are created based on the already existed ones. As for the learning environments, they are created based on the authentic learning theory.

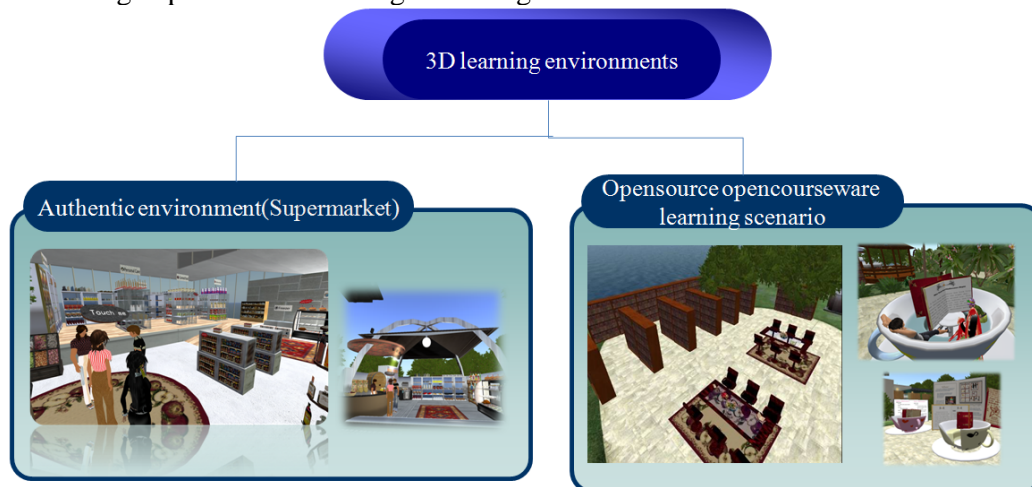
Promotion strategy includes holding Second Life workshops, contests and trainings. To make more people use NCU Wonderland, Second Life movie contest and runway walk are held regularly. Moreover, training courses are held to solve the problem that Second Life is not easy for a beginner to use[5]. After attending the training courses, students will be more willing to use Second Life for learning.

The purpose of forming an alliance is to promote NCU Wonderland and make it worldwide. NCU Wonderland, developed by NCU, is now used by Department of Applied Chinese Languages and Literature at NTNU, Department of English at NCU, Department and Graduate Institute of Accounting at NCUE for language teaching. These universities form a strategic alliance to promote teachings in Second Life. In the future, the teaching aids and learning environments will be promoted to the universities in Asia. It is hope that the strategic alliance can make learning in Second Life become more and more popular.

1. NCU Wonderland

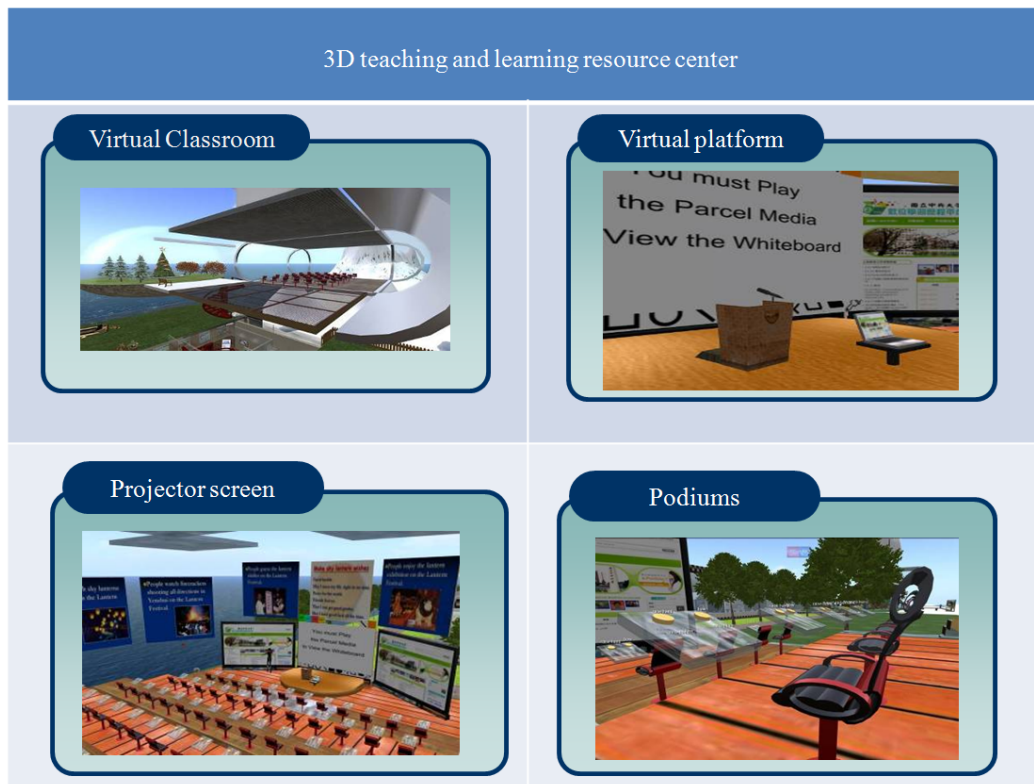
NCU Wonderland, a 3D virtual campus, has been built by National Central University (NCU) since 2007. (<http://slurl.com/secondlife/NCUKSL/48/91/27>) The purpose of building NCU Wonderland is to provide teachers and students with better language learning environments. The environments in NCU Wonderland include 3D learning environments and 3D teaching and learning resource center.

The 3D learning environments in NCU Wonderland simulated the learning environments in real world. A shopping mall was built for students to practice English in authentic environment. Students can discuss their learning with other global users instantly in this environment. Besides, an Opensource opencourseware learning scenario was built for students to do self-study. Students can choose the knowledge they want based on their self-learning experiences. Learning is no longer restricted in classroom.



For developing 3D learning and teaching resource center, the teaching resources created in NCU Wonderland are listed as follows.

- Virtual classroom: The virtual classroom which simulates the real world classroom will help students get used to virtual learning environments quickly.
- Virtual platform: Teachers can teach on the platform and switch his slides here.
- Projector screen: Usually, there are one projector and one projector screen in traditional classroom. However, there are ten projector screens in these virtual learning environments. Students can see the projector screens from different directions.
- Podiums: There are podiums in front of students' seats. Students can raise their hands and vote in their seats.

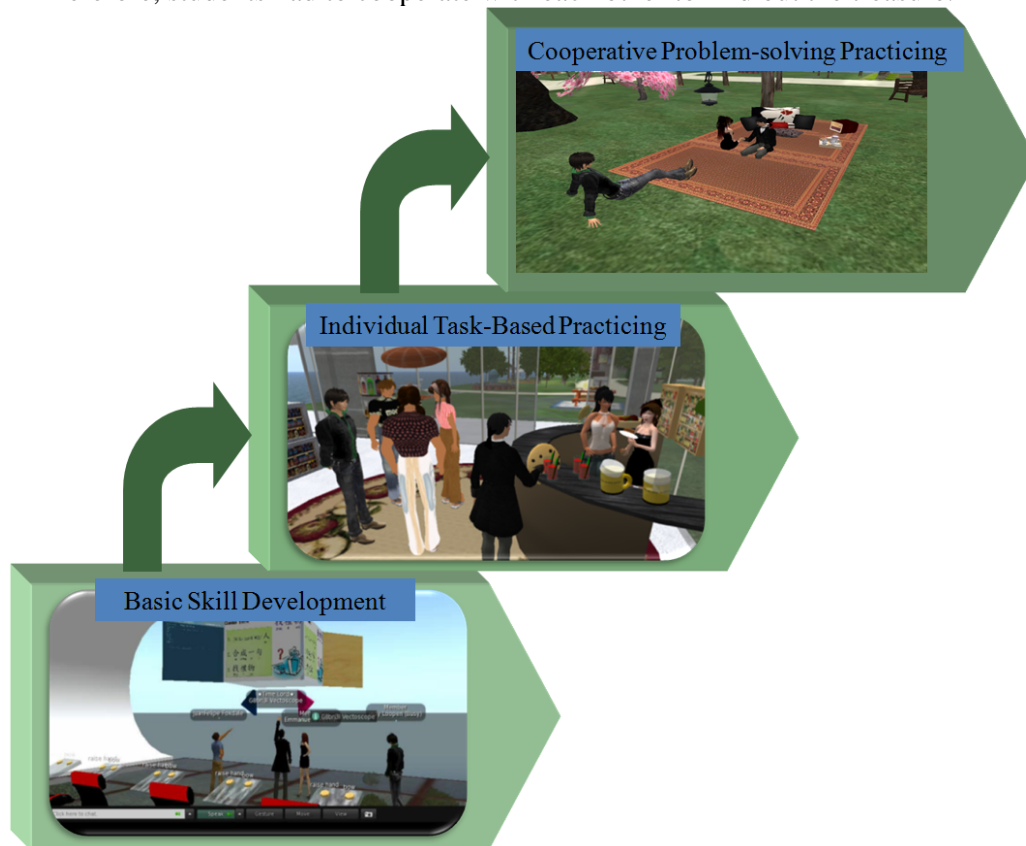


2. Instructional and learning activity design

A CFL (Chinese as a foreign language) teaching has used NCU Wonderland for its teaching environment. The teaching methodologies used in this environment were as follows.[6]

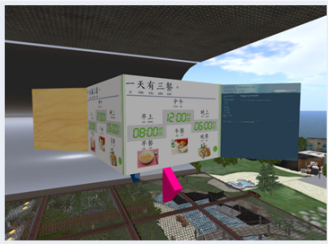


- Basic Skill Development: Owing that most students were Second Life beginners, the instructor first taught Mandarin Chinese in the virtual classroom in NCU Wonderland. The basic skills such as Chinese characters and words and functional sentences were taught in this stage. They were presented by web PPT.
- Individual Task-Based Practicing: After students were familiar with Second Life, they were asked to buy products in the shopping mall in NCU Wonderland. The instructor would teach the Chinese naming of each product first, and then asked students to buy the designated products by themselves. In this way, students would have chance to practice Chinese with clerks. The authentic learning environment would facilitate students' language learning.
- Cooperative Problem-solving Practicing: Finally, students were asked to find the treasure hidden in virtual living lab, another e-learning platform owned by Institute for

Information Industry in Second Life. Before students started to find treasures, they were assigned a task. They would get a clue after they complete their tasks. When the clues were put together, students would know where the treasure was hidden. Therefore, students had to cooperate with each other to find out the treasure.




Based on the above teaching methodology, a series of teaching aids were developed.

- **Web PPT** : The slides for teaching were uploaded to the web server through the shared media function of Second Life viewer 2. In this way, the instructor could switch their slides at any time and saved the charges for uploading slides. In addition, there were spaces for instructors to show their personal websites on the sides of the cube. Instructors could interact with students through these websites.
- **The settings for buying products in the shopping mall**: The products in the supermarket were provided with voice. Students could listen to the Chinese naming of each products before they purchased them. If they decided to buy the product, they would get an object so that they could pay for the product and practiced Chinese with clerks.
- **HUD for collaborative learning**: Students could take pictures in Second Life and uploaded these pictures to a php sever. They could wear HUD for collaborative learning to share their pictures with their classmates. Even if students were in different places, they still could see the same picture and discussed it with each other.

Teaching aids		
Web PPT	The settings for buying products in the shopping mall	HUD for collaborative learning
		

There were also other teaching activities held in NCU Wonderland. [7]

Course title	Go shopping in a shopping mall
Objectives	Students will be able to: <ol style="list-style-type: none"> 1. understand the meanings of each vocabulary and phrases. 2. use the sentence pattern in the lesson exactly. 3. realize what makes shoppers buy more products in a supermarket. 4. understand the terms used for sales promotion.
Pedagogy	<ol style="list-style-type: none"> 1. authentic learning 2. task-based learning
Course length	<ol style="list-style-type: none"> 1. entire activity lasts for 6 weeks 2. each procedure step takes from 10 minutes to 2 hours
Learning materials	<ol style="list-style-type: none"> 1. Article: Who Decides What You Buy? 2. Learning materials: vocabulary, pronunciation, grammar, sentences and dialogues were taught by projecting slides or playing videos. 3. Supplementary materials: could be found on NCU eP websites.
Roles	<ol style="list-style-type: none"> 1. Instructor: Irene 2. Tutor: Joanne 3. Students: 21 university students
Scene	

Procedure	<p>Part I. Before-session procedure</p> <ol style="list-style-type: none"> 1. Students share their experiences of shopping in a supermarket. 2. Students read article “Who Decides What You Buy?” and discuss with their classmates which factor will influence their purchase decision. 3. Introducing and practicing the operation of 3D virtual worlds in Second Life. 4. Instructor explains the experimental objectives and evaluation methods. 5. Instructor conducts a pre-test questionnaire. 6. Instructor conducts a pre-learning questionnaire. <p>Part II. In-session procedure</p> <ol style="list-style-type: none"> 1. Instructor introduces the article “Who Decides What You Buy?” and the factors that marketing specialists use to make shoppers buy more products. 2. Instructor explains meanings and usage of vocabulary, idioms and phrases. 3. Instructor introduces grammar patterns. 4. Instructor summarizes the article and asks comprehension questions. 5. Tutor helps students discuss with each other and buy something from shopping mall. 6. Students form in-class discussion about shopping issue. Where to buy? How to buy? What to buy? Why to buy? Who to buy? <p>Part III. After-session procedure</p> <ol style="list-style-type: none"> 1. Instructor gives students a post-learning assessment. 2. Instructor conducts a post-test questionnaire. 3. Instructor shows some products to students and asked them to go to the supermarket on NCU wonderland. 4. Students discuss the best location in the supermarket to place those products with their groupmates.
URL	http://slurl.com/secondlife/NCUKSL/48/91/27

3. Discussions and future research

By using the teaching aids to do language teaching in NCU Wonderland, NCU successfully cooperated with other Universities. The 3D teaching environment in NCU Wonderland can fulfill different people's needs. Universities which have used Second Life for teaching have formed a strategic alliance in Taiwan. The universities in this alliance can share their techniques and resources and learn from each other. However, people still encountered some difficulties when using Second Life for teaching. For example, some students were not familiar with Second Life viewer or Second Life crashed while students were learning. These problems will be solved in the future. It is hoped that NCU Wonderland can satisfy more and more users in the future. To achieve this goal, NCU will try hard to improve the 3D learning environments and develop more and more useful teaching aids.

Acknowledgements

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