

IMMERSIVE MULTI-USER VIRTUAL ENVIRONMENTS: A NEW PLATFORM FOR FOREIGN LANGUAGE TEACHING AND LEARNING¹

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Introduction

Second Life is one of a new generation of ‘virtual worlds’ that has emerged with the development of Web 2.0². It is an online immersive multi-user virtual environment that exists in cyberspace and is scaffolded by a network of around six thousand servers spread across the USA³. With a long pedigree of virtual reality, on and offline gaming and Internet development behind it⁴, Second Life (or SL as it is commonly known) opened to the public in 2003⁵. Since then it has been the focus of much hype⁶ about the social, commercial and

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² “A trend in web design and development - a perceived second generation of web-based communities and hosted services (such as social-networking sites, wikis and blogs) which aim to facilitate creativity, collaboration, and sharing between users.” CPSEO, SEO Glossary, <http://www.cpseo.com/glossary.html>

³ Duncan Riley, “Chris Collins From Linden Lab: Stability Is The Key”, Tech Crunch <http://www.techcrunch.com/tag/secondlife/>

⁴ For more background information on the development of virtual worlds, see: Ondrejka, C., “*Education Unleashed: Participatory Culture, Education, and Innovation in Second Life*.” The Ecology of Games: Connecting Youth, Games, and Learning. Edited by Katie Salen. The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning. Cambridge, MA: The MIT Press, 2008.

⁵ “What is Second Life”, <http://secondlife.com/whatis/>

⁶ Prentice, S., “*Virtual Worlds: To Second Life and Beyond*”, Gartner Symposium / IT Expo, November 20-23, 2007, Sydney, Australia

educational potential of virtual worlds, seen by some as one possibility in the next stage of the evolution of the World Wide Web – Web 3.0⁷.

A graphically rich, persistent online immersive 3D environment which users enter via an avatar⁸, while sharing a technological heritage with massive multiplayer online games⁹, SL differs from them in that it has no set goals, little pre-determined content and no pre-determined roles. The majority of the content in SL (buildings, landscapes, etc.) is user created and users can chose any role they wish. It is these two characteristics that also provide educators with the ability to create environments and scenarios highly tailored to their specific pedagogical needs.

While essentially a social networking environment, in the early years of operation a number of major businesses leapt to establish a presence in SL, both out of a desire to exploit untapped commercial potential and of not wanting to be left behind. With the passage of time some large corporations are re-evaluating the value of such a presence. Whilst some are migrating to other virtual world platforms (Coca Cola moving to the more teen-oriented virtual world There¹⁰), for security and other reasons, other corporations are considering the move to standalone avatar-enabled corporate collaboration environments¹¹ available only to their own employees and clients.

One area, however, where there is still much excitement in terms of the potential of virtual worlds like SL is that of education and training. In an interview late 2007 for Virtual World News, Steve Prentice of Gartner, Inc¹² describes education and training as being the “killer application”¹³ in terms of the future development of online virtual worlds. Prentice identifies competition to attract Generation V¹⁴ to educational offerings as being one of the drivers for the continued involvement of educational institutions in online virtual worlds. In

⁷ Wikipedia, Web 3.0, http://en.wikipedia.org/wiki/Web_3.0

⁸ Johnson, L.F. and Levine, A.H., “*Virtual Worlds Inherently Immersive, Highly Social Learning Spaces*”, http://immersivededucation.org/library/Immersive_Learning-Johnson_and_Levine.pdf. Cory Ondrejka defines an “avatar” as “the graphical representative of the player in a collaborative space”. See Ondrejka, C., Op. cit. p234.

⁹ Ondrejka, C., Op. cit.

¹⁰ Budde, P., “*Global – Digital Media – Virtual Worlds*”, Paul Budde Communication Pty. Ltd., 25 March, 2008

¹¹ “Feature: Steve Prentice, Gartner Analyst, Virtual Worlds 2008 Forecast”, Virtual World News, 27 December, 2008, <http://www.virtualworldsnews.com/2007/12/feature-steve-p.html>

¹² <http://www.gartner.com/>

¹³ “Feature: Steve Prentice, Gartner Analyst, Virtual Worlds 2008 Forecast”, Virtual World News, Op. cit.

¹⁴ Sarner, A., “*Generation Virtual*”, Forbes.com, 30 April, 2008, http://www.forbes.com/2008/04/30/genv-gartner-marketing-oped-cx_asa_0430genv.html. A concept essentially developed for marketing purposes, its applicability to a whole range of online activities is obvious.

characterising Generation V, Prentice highlights their “familiarity and high acceptance of online gaming and social networking communities”¹⁵. While Prentice and fellow Gartner analyst Adam Sarner point out that members of Generation V cannot be defined by their birthdates¹⁶, they acknowledge that some of their characteristics, such as the use of technology as a day-to-day tool to facilitate communication¹⁷ and the ones mentioned above, are shared by other “generations” (Generation X and Y). It is these characteristics, present in many of our current undergraduate and graduate foreign language learners, which make the use of immersive online 3D environments like SL so attractive as a supplement to traditional classroom teaching and the use of other Web 2.0 applications like Blackboard and Moodle.

A brief look at Internet usage statistics

Virtual worlds like Second Life are the product of many things, but their continued existence and useability is dependent on the infrastructure that supports them and brings them into our schools and homes – the Internet and the World Wide Web.

According to Australian Bureau of Statistics figures, in 2006-7, 64% of Australian households had Internet access. Of the 5.1 million homes that had Internet access, 68% had broadband Internet access¹⁸, a pre-requisite for access to online games, social networking sites and virtual worlds. In the USA 73% of all families have broadband¹⁹. Worldwide in 2007 there were approximately 300 million households that were broadband enabled²⁰.

¹⁵ “Feature: Steve Prentice, Gartner Analyst, Virtual Worlds 2008 Forecast”, Virtual World News, Op. cit. / See also: “Generation V”, Wikipedia, http://en.wikipedia.org/wiki/Generation_V and Havenstein, H., “*Meet the Virtual Generation: Beyond Generations X and Y, the marketers gear up for the mixed demographic Generation V*”, Computerworld, 18 November, 2007

<http://www.pcworld.com/printable/article/id.139748/printable.html#>

¹⁶ Havenstein, H., “*Meet the Virtual Generation*”, Op. cit.

¹⁷ Sarner, A., “Generation Virtual”, Op. cit.

¹⁸ Australian Bureau of Statistics, “*Household Use of Information Technology, Australia, 2006-07*”, 20 December, 2007

<http://www.abs.gov.au/ausstats/abs@.nsf/0e5fa1cc95cd093c4a2568110007852b/acc2d18cc958bc7bca2568a9001393ae!OpenDocument>

¹⁹ Lenhart, A., “*A Timeline of Teens and Technology*”, Policy & Advocacy in the Schools Meeting APA, 16 August, 2007, San Francisco, CA. via PEW/Internet, PEW Internet and American Life Project http://www.pewinternet.org/PPF/r/105/presentation_display.asp

²⁰ Internet World Stats, “*Usage and Population Statistics, Broadband Internet Statistics: Top world countries with highest Internet Broadband subscribers in 2007*”, <http://www.internetworldstats.com/dsl.htm>

The growth of social networking on the Internet

In addition to the growing percentage of households in countries like Australia that have broadband Internet access, the number of Internet users who have a presence on a social networking site has grown exponentially over the last few years. In 2006 the top ten social networking sites attracted an audience of 68.8 million Web users, up 47% from the previous year²¹. Sites like MySpace and Facebook have over 18 million²² and 15 million²³ users respectively. Analysts from Gartner have also made an oft quoted prediction that by 2011, 80% of active Internet users will have a presence in a virtual world.²⁴

In addition to these Web 2.0 social networking sites, there is a growing number of young users of hybrid online 3D game and social networking sites like Club Penguin²⁵. Opened to the public in 2005²⁶, within two years the site with its purported 12 million users²⁷ was purchased by the Walt Disney Company at a value of US\$700 million²⁸. The site was developed for children between the ages of 6 and 14 years old²⁹ and is one of the largest online 3D communities for this age group. What this signifies is that there is a growing group of pre-and early teenagers who are becoming acculturated to socialising, playing and learning in online immersive 3D virtual worlds and who see this type of interaction as a normal part of their everyday lives. This group will be reaching tertiary education age in the next 3 to 12 years and will provide new challenges for tertiary education institutions to engage them on terms that they are both comfortable and familiar with.

²¹ Bausch, S., Han, L., "Social networking sites grow 47 percent, year over year, reaching 45 percent of web users, according to Nielsen/Netratings: Successful sites drive high visitor retention rates", 11 May, 2006, http://www.nielsen-netratings.com/pr/pr_060511.pdf. Note, these figures refer to an "unduplicated unique audience".

²² Ibid.

²³ Fast Company.com, "Facebook by the Numbers",

http://www.fastcompany.com/magazine/115/open_features-hacker-dropout-ceo-facebook-numbers.html

²⁴ "Feature: Steve Prentice, Gartner Analyst, Virtual Worlds 2008 Forecast", Virtual World News, Op. cit.

²⁵ Club Penguin <http://www.clubpenguin.com/>. For further examples of virtual worlds suitable for children see: Association of Virtual Worlds LLC, "The 'Blue Book': A Consumer Guide to Virtual Worlds", 2008

²⁶ Club Penguin, Wikipedia, http://en.wikipedia.org/wiki/Club_Penguin

²⁷ Shields, M., "Avatar Nation". MediaWeek 17, 2007. Cited in Club Penguin, Wikipedia, ibid.

²⁸ Eldon, E. "Disney buys Club Penguin in \$700 million deal — virtual worlds have arrived?", Venture Beat, 1 August, 2007, <http://venturebeat.com/2007/08/01/disney-buys-club-penguin-in-700-million-deal/>

²⁹ Club Penguin, Wikipedia, Op. cit.

Language acquisition and immersion

In a book entitled *Second Language Acquisition and Second Language Learning* published in 1981³⁰, Stephen Krashen states: “It appears to be the case to me now that the major function of the second language classroom is to provide intake for acquisition.”³¹ While this conclusion has been challenged and Krashen’s view of second language acquisition being primarily an “acquisition” oriented process fed by “intake” has been shown to only be part of the picture, some of the observations and conclusions about second language acquisition made by Krashen based on his own research and the research of others at the time are useful for exploring the features of immersive learning in general and learning in online immersive 3D virtual worlds specifically that may potentially enhance second language learning and teaching.

Krashen uses Monitor Theory to draw a distinction between language acquisition and conscious learning. Language acquisition is seen as being “meaningful interaction in the target language – natural communication – in which the speakers are concerned not with the form of their utterances, but with the messages they are conveying and understanding. Error correction and explicit teaching of rules are not relevant to language acquisition”.³² Further, “Acquirers need not have a conscious awareness of the ‘rules’ they possess, and may self-correct only on the basis of a ‘feel’ for grammaticality.” By contrast, conscious language learning involves deliberate “error correction and the presentation of explicit rules.” In this model of language learning, “fluency of production is based on what we have ‘picked up’ through active communication” while consciously learned “rules” is used to “alter the output of the acquired system” to improve accuracy³³.

Krashen goes on to argue that “acquisition” can occur both in the formal environment of the classroom³⁴ and the informal (unstructured) environment provided by immersion in the linguistic / cultural environment of the target language. The informal environment can include time spent in the country where the target language is spoken and the home

³⁰ Krashen, S., *Second Language Acquisition and Second Language Learning*, Pergamon Press Inc., 1981

³¹ Krashen, S., *Ibid*, p101

³² Krashen, S., *Ibid*, p1

³³ Krashen, S., *Ibid*, p2

³⁴ Krashen, S., *Ibid*, p48 “...the classroom can be of value, and in fact generally is of value, in language acquisition as well as in language learning.”

environment where the language is spoken by one or both parents³⁵. While one of the objectives of Krashen's discussion in the book is to look at how classrooms can be better used to promote "acquisition", research quoted by Krashen showed that a "strong relationship was found between time spent abroad . . . and test performance". In the research quoted, second language learners who had never spent time in the country where the target language was spoken were outperformed in testing by those that had.³⁶

Immersion in the linguistic and cultural environment is clearly a very important factor in the acquisition of a second language. Krashen, however, places two caveats on this conclusion. The first is that to acquire a second language successfully immersion may well need to be combined with self-study (conscious learning).³⁷ This combination of conscious learning (learning of rules and structures) and learning in formal environments with informal learning is touched on and emphasised frequently throughout Krashen's discussion. I will provide an example later in this paper of a lesson in an online immersive 3D virtual world that was combined with traditional, formal classroom learning and to potentially create some of the conditions necessary for successful language acquisition as envisioned by Krashen. The second caveat relates to the type of intake environment second language learners are immersed in. Krashen distinguishes between "exposure-type" informal environments and "intake-type" environments. For acquisition to occur in an informal (immersive) environment, learners must be directly and actively involved in the input process³⁸ and must engage in "regular and intensive language use".³⁹ I will further argue that learning undertaken in online immersive 3D virtual worlds is very amenable to being structured so that participants are made to be actively engaged in the input process, and can indeed be made to seek out relevant input.

Krashen also raises the question of "comprehensible input". In order for input to be effective in language acquisition, especially for lower level learners, it needs to be comprehensible to the learner. Krashen goes so far as to say "*comprehensible input* is the crucial and necessary ingredient" to acquisition.⁴⁰ In Chapter 8 he theorises that "perhaps we acquire by *understanding* language that is 'a little beyond' our current level of competence" and this can

³⁵ Krashen, S., Ibid, p42

³⁶ Carroll, J., quoted in Krashen, S., Ibid, p42

³⁷ Krashen, S., Ibid, p47, p48, p116

³⁸ Krashen, S., Ibid, p47

³⁹ Krashen, S., Ibid p46

⁴⁰ Krashen, S., Ibid, p9

be achieved, in part, through the help of “extra-linguistic context”⁴¹ (something I would argue is provided in an immersive environment or what Krashen might call a “rich intake environment”⁴²). I will argue later in this paper that while immersion in the country in the target language is spoken can provide many of the elements necessary for “acquisition”, the complexity of inputs (intake) for lower level students can sometimes negate the benefits due to insufficient “comprehensible input”, whereas an online immersive 3D environment can provide similar “extra-linguistic context” but allow the use of what Krashen calls “simple codes”⁴³, or what I would term as controlled, targeted input.

From Krashen’s discussion, then, it is clear that four very critical elements then in second language acquisition are: immersion; a combination of conscious learning and acquisition (intake); active and intensive use of the target language; comprehensible input.

In addition to Krashen’s input-focused approach to language acquisition, in subsequent decades, some scholars have emphasised the importance of output in the progression towards “target-like competence”⁴⁴. In research done in the 1980s Swain looked at students studying a second language in “immersion classrooms”. Students’ *reception* skills were reaching levels of native-like competence, but they still retained “certain non-target-like structures in their production”. On closer examination, among other factors such as input being limited, a dislocation between the teaching of grammar and its use in context and students producing language less frequently that they would in classes held in their native language, one of the key factors she found was that student output when occurring was not being corrected often and any correction was not done systematically⁴⁵. Swain concluded that to enable their production of the target language to reach “target-like competence”, students need to be encouraged to produce more output in the target language and for that output to be accurate (i.e. grammatically and syntactically correct)⁴⁶. I contend that online immersive 3D virtual worlds like Second Life can provide both an environment that encourages and allows students to produce greater output in the target language and the practical functionality to

⁴¹ Krashen, S., Ibid p103

⁴² Krashen, S., Ibid 49

⁴³ Krashen, S. Ibid, Chapter 9

⁴⁴ Swain, M., quoted in Woodfield, D.J., “*Output and Beyond to Dialogue: A Review of Merrill Swain’s Current Approach to SLA*”, The Language Teacher Online, <http://jalt-publications.org/tlt/files/97/sep/woodfield.html>, accessed on May 2008.

⁴⁵ Woodfield, D.J., Ibid, p1

⁴⁶ Woodfield, D.J., Ibid, p1

enable teachers to provide timely correction of errors without disrupting the “flow” of the student output.

Second Life as a site for linguistic and cultural acquisition and immersion

In the first and second semesters of 2008 (March to June and July to October) a number of classes were held in Second Life for two groups of undergraduate students studying Mandarin Chinese in the Chinese Studies Program at Monash University.

The classes were held on Monash Island⁴⁷, a private region within SL purchased by Monash University for the specific purpose of conducting teaching and research across a range of disciplines. In late 2007 the Chinese Studies Program established a Chinese language and culture learning precinct made up of a number of buildings including a traditional Chinese college and a classical tea house. Since that time a small fruit and vegetable market, a medical clinic, a small assorted goods shop and a travel agency have been added. The goal in establishing this precinct was to provide a highly immersive virtual environment that takes full advantage of the kinds of things SL facilitates graphically, audially and textually to provide pedagogically sound lessons on Chinese language and culture that are based on and extend the material covered in the real-life lecture theatre and tutorial classroom and to, ultimately, provide a stimulating environment that will encourage students to explore and learn from the objects placed throughout the environment.

The initial motivation to hold classes in an online immersive 3D virtual world stemmed from the observation over a number of years of teaching undergraduate Mandarin that for many students, their learning experience of the language (and culture) often stops at the classroom door. While they were engaging in conscious learning in a formal environment building their knowledge of grammatical rules and vocabulary, there was little or no opportunity for them to undertake learning in an informal, rich intake environment outside the classroom where they could apply this formal knowledge in a dynamic and spontaneous environment. Essentially, then, these students were not receiving sufficient intake to facilitate acquisition and not exposed to enough opportunities to generate output or receive feedback on that output.

⁴⁷ Second Life location: Research, Monash University (117, 133, 28)

Most of the students in this situation were of non-heritage background, although even some heritage learners⁴⁸ faced a similar problem.

Other motivations also fuelled the push to explore the potentiality of learning in online immersive 3D virtual world. The first was, essentially, an issue of institutional resources. During an official visit to Taiwan in 2006 I visited a wide range of public and private tertiary institutions. In one of the better financed private institutions we were shown a series of real life classrooms used for the teaching of a range of languages including English, Chinese and Japanese. The classrooms were somewhat of a revelation in that each was designed to create a physical learning environment that immersed students in a range of aspects of the culture, customs and history of the target language. The Chinese classroom was filled with traditional paintings, works of calligraphy, eating and drinking implements, antique furniture and so on. The Japanese classroom was laid with tatami mats and low writing tables at which students would sit and had a raised platform on which the teacher would sit. The teachers would also often dress in traditional costume when conducting classes. In addition to learning textbook-based material, students were immersed in an environment replete with objects from which they could increase their knowledge of culture, customs and history (synchronously or asynchronously) and one that set an overall “mood” for the language and culture classes held in them. Due to the limited resources of my own home institution, this type of specialised real life classroom would never be possible, yet providing a similarly rich and simulating environment in an online immersive 3D virtual world with low the set up costs that this would involve and the fact that it does not take up any actual physical space would, it occurred to me, be eminently possible.

Another factor that made the use of an online immersive 3D virtual world appealing was related to observations made about students participating in the intensive incountry language and culture program run by our department in China (the Chinese Incountry Program or CIP⁴⁹). This program has been run successfully for over ten years, and over a thousand students from within and without Monash have participated. Because while on the program students are living and studying in China and their classes are conducted primarily in Chinese

⁴⁸ For a detailed discussion of the term “heritage learners” see: Van Deusen-Scholl, N., “*Toward a Definition of Heritage Language: Sociopolitical and Pedagogical Considerations*”, *Journal Of Language, Identity, And Education*, 2(3), 211–230, 2003.

⁴⁹ Chinese Incountry Program, Monash University, Melbourne, Australia
www.arts.monash.edu.au/chinese/incountry

(an example of Krashen's ideal classroom where input conducive to acquisition is provided in addition to formal conscious "rule" learning) by the end of the program many of the students display greatly increased confidence in their own ability to handle a range of communicative situations in Chinese (as well as increased formal knowledge of the language and culture). However, it has been observed that for beginner and lower level learners the input received from the informal environment while in China (unmediated input) can often be overwhelming and therefore result in greatly reduced value of such input. A good example of this is the difficulty that beginner and lower level students have in going to see a doctor on their own when they are ill. While this could be seen as primarily a linguistic problem, and to a significant degree it is, it is also very much a matter of the student's unfamiliarity with the environment and the procedures involved in seeing a doctor. The ability to simulate this kind of scenario, including the physical and procedural environment, in Second Life allows students to gain valuable knowledge, experience and confidence in an immersive environment in which the inputs they are exposed to are, while reasonably realistic, controlled and targeted and less overwhelming than the real world⁵⁰, and in which they have the opportunity to produce and practice appropriate linguistic and behavioural output while receiving feedback from their teacher⁵¹, their peers and the environment itself⁵².

A final factor in the decision to explore the potential of online immersive 3D virtual worlds for teaching language and culture is the oft cited ability to bring students in contact with native speakers of the target language. By virtue of the fact that SL is a persistent online immersive 3D environment that is accessed via the Internet, it is possible for people from all over the world to enter the environment provided they have the right equipment and access to a broadband Internet connection⁵³. In SL, there are a growing number of sites set up by and frequented by users from mainland China, Hong Kong and Taiwan, and it is relatively easy to arrange for students to have contact with these native in both informal and formal formats. Examples of this are the formal interviews of several native speakers from China who are

⁵⁰ Indeed, due to the persistent nature of SL and other online 3D virtual worlds, students can also practice the scenario as many times as they like in asynchronous mode until they have a more comfortable grasp of the language, terminology and procedures involved in a real life situation.

⁵¹ Because of the ability to easily log text-based dialogue conducted in SL, feedback from the teacher is able to be given after-the-fact. This means the natural flow of conversation while students are engaged in a specific scenario is not interrupted.

⁵² A range of information about language, culture and procedures was imbedded in objects that were part of the exercises conducted during class (e.g. train timetables with audio files imbedded to enable students to clarify unfamiliar terminology) and other "tools" also provided to assist students grappling with new or unfamiliar material (e.g. a virtual dictionary in which unfamiliar terms could be checked).

⁵³ Interestingly, there does not appear to be any evidence that China, for example, is regulating or restricting the use of Second Life by its citizens.

very active in SL in the areas of social networking and education that were conducted in Chinese by Monash undergraduate students and the availability of a native speaker from China in the Monash Tea House on a regular basis for casual conversation in Chinese with interested students. Each of these activities was designed to provide students with a rich source of both mediated and unmediated input conducive to acquisition and opportunities to produce output that can be monitored and for which constructive feedback can and is given⁵⁴.

Lessons in Second Life

This year, a number of lessons held in SL were designed to address the specific needs advanced beginner learners of both heritage and non-heritage background who already have a functional level spoken Chinese, but are unable to read or write in Chinese. These lessons were held as a supplement to regular lectures and advanced tutorials in which this group of students undertook accelerated lessons in reading, writing, speaking and listening. The lessons covered a range of scenarios taken from the main textbook which were then modified and extended for the purpose of the SL lessons.

The SL lessons had a number of pedagogical goals. One key goal was to address the students' main area of weakness: character recognition and production. Specifically, the goal was to enhance the students' grasp of "pinyin", which is a system of Romanised spelling of Chinese characters, as well as their ability to recognise and input Chinese characters. This was facilitated by stipulating that all dialogue during the lessons be conducted in text-chat format. The inputting of characters is a two stage process that requires "pinyin" to be input first to bring up a list of homonym characters and then the correct characters to be selected from the list. The advantage of doing this in SL is that students are engaged in situated learning where the relevance of the dialogue and activities they are engaging in is very clear, material learned formally and consciously through their textbooks can be used and extended in a less structured, more spontaneous manner, they are receiving controlled, targeted input, and they are reading and inputting Chinese characters (outputting dialogue) as part of dynamic interaction with their teacher and their classmates.

⁵⁴ The students that conducted interviews with the native speakers from China did this as a part of their formal assessment for the unit. Their text-based conversations were logged and subsequently graded by the unit coordinator.

Feedback on student output was often provided as part of the flow of the dialogue by the teacher using a question seeking clarification about something said by a student to correct a character, word, phrase or sentence incorrectly output by that student. Post-lesson analysis of logged dialogues and other written material produced by students as part of the scenarios (for example, a fax written or a medical history filled in by the students) was also used to provide feedback and specific errors discussed with the relevant student.

A second pedagogical goal was to familiarise the students with the procedures associated with several real life scenarios introduced in their textbooks. One of the classes required students see a doctor about an illness in the virtual medical clinic on Monash Island. As discussed above, in real life this situation can be overwhelming for lower level students due to their unfamiliarity with the procedures for seeing a doctor in China. The virtual clinic simulates the actual environment of a clinic in a mainland Chinese university, albeit on a smaller scale. Students learn about the specific procedures involved both through detailed observation and questioning of the environment itself (there are a range of visual, textual and audio inputs available to students) and by having to complete certain procedures and obtain certain items before the virtual doctor (played either by a real life teacher or an automated bot⁵⁵) will see them. Tasks completed by the students were also designed to reinforce their knowledge of the specific procedures involved, and their grasp of this knowledge was measured by how successfully students were able to complete the tasks.

Other pedagogical goals included the consolidation of material, knowledge and skills already covered in the textbook and formal classroom lessons and providing extension through the introduction of additional content and vocabulary that is ‘a little beyond’ the current level of competence of the students, as well as being of practical use in the real world.

Conclusion

Much research still needs to be done to objectively verify how effective the use of online immersive 3D virtual worlds like Second Life are for providing students with appropriate intake and opportunities for producing accurate output that will help them achieve acquisition.

⁵⁵ An automated “chat bot” is currently being developed that will be able to engage with students in lesson related role play and dialogues. This will also add an asynchronous aspect to lesson in SL in that students will be able to perform the role play and receive feedback even when the teacher is not present.

In fact research of this nature is in the planning stages at the time of writing and will hopefully be carried out in the latter half of 2009.

What is clear is that lessons in online immersive 3D virtual worlds have a lot to offer both educator and student in the teaching and learning of foreign languages, both synchronously and asynchronously. They can compliment and extend formal classroom based lessons by providing a rich intake environment that can be highly tailored to meet the specific needs of different groups of students, provide students with the opportunity to produce and practice producing output which, through teacher, peer and environmental feedback can be refined for greater accuracy, and which through situated learning can provide students with linguistic, cultural and practical knowledge that has direct relevance to real world situations.

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