

MUVE to a better alternative – the scaffolding of Bridging Students in SL

Introduction

"Engaging with Second Life; Real Education in a Virtual World" is a project funded through the New Zealand Tertiary Education Commission's Encouraging and Supporting Innovation Fund, that commenced in July 2008. Foundation students at Manukau Institute of Technology are the first students to utilise a build on the island of Kowhai in Second Life, designed and constructed as part of this SLENZ (Second Life Education in New Zealand) project. Foundation students follow a variety of pathways, but it is assumed that all of them need to develop interview skills. This assumption is based on the proliferation of claims such as, "Whether it is the first interview or the 20th, everyone needs to know how to handle all three parts of an interview..." (Choices Professional) or "Everyone needs to learn how to approach interviews." (Society of Human Resources Management). Research such as that conducted by Loyalist College in SL (see under **Second Life**) has suggested the potential efficacy of Second Life for education and that interview skills can be enhanced through virtual training in role-playing scenarios. (Linden Lab, 2009, p.1.) Academic engagement and social engagement have already been displayed in early sessions in Second Life. The SLENZ Foundation Pilot has aimed at providing the safe scaffolding of students in SL by encouraging collaboration between educators and sound instructional design.

Second Life

Second Life is an online virtual 3D world imagined, designed and created entirely by its residents. It is a MUVE (Multi User Virtual Environment) developed by Linden Lab that launched on June 23, 2003. A MUVE is

a term used to describe a persistent 3D graphical environment accessed over the Internet which allows a large number of simultaneous users to interact synchronously. (Salt, Atkins, & Blackall, 2008, p 15.)

By September 2008 just over 15 million accounts were registered, and between 35,000 and 90,000 residents can be logged in at any one time. (Second Life Economic Statistics, 2009.) Second Life is a popular educational MUVE. The latest report from Eduserve 2009, states that Second Life is the virtual world of choice for UK academics (Virtual World Watch, 2009, ¶3.) The new Second Life Education Blog states,

Hundreds of leading universities and school systems around the world use Second Life as a vibrant part of their educational programs. (Virtual Environments Enable New Models of Learning, 2009, ¶1.)

Research has not yet fully validated the claims of educators who are already enthusiastic users of Second Life, but there are both research and anecdotal reports that seem to indicate Second Life is a fun, engaging and productive learning environment. Loyalist College in Second Life has created a simulation for training border guards in interview techniques. Their executive summary states:

The amazing results of the training and simulation program have led to significantly improved grades on students' critical skills tests, taking scores from a 56% success in 2007, to 95% at the end of 2008 after the simulation was instituted. The success

of the program has encouraged over 650 students and 8 faculty to explore Second Life for mixed purposes. (Linden Lab, 2009, p.1.)

“The learning in these spaces is amazing, and when we are working with 30% increases in success, there is nothing more memorable than that.” -- Ken Hudson, Managing Director, Virtual World Design Center, Loyalist College (Linden Lab, 2009, p.1.)

Salt et al. (2008) suggest that the rich 3D environment of Second Life creates a high interest level and engagement is enhanced by the ability of users to create a personalised avatar and interact with other users as they choose. “It (Second Life) is certainly suited to developing a sense of immediacy, shared experience and emotional closeness.” (Salt et al., 2008, p. 15) Kay and Fitzgerald (2008) in the Second Life in Education Wiki, have developed a list of categories they believe cover the educational activities in Second Life. They state:

The unique qualities of a 3D virtual world can provide opportunities for rich sensory immersive experiences, authentic contexts and activities for experiential learning, simulation and role-play, modelling of complex scenarios, a platform for data visualisation and opportunities for collaboration and co-creation that cannot be easily experienced using other platforms. (¶1.)

Foundation Context

Tertiary education in our current world is a significant pathway into employment and the consequent societal benefits. Bridging/enabling education works to make these benefits accessible to people who are undoubtedly talented but who don't have the specific skills and credentials for entry to further study and the workforce. (Anderson, 2007, p.3.)

Foundation students at Manukau Institute of Technology are fairly representative of foundation students around the country. MIT Foundation students represent over 60 different countries of origin. Figure 1 shows a comparison of the ethnic mix of students from around NZ in 2003 (Benseman & Russ, 2003, p.53.) compared to the current student mix at MIT. It is assumed that the increase in Pacifica and Asian students and the decrease in Pakeha students is reflective of a general shift over time. There are always more female than male students, and students range from 16 to 60 years of age. Figure 2 shows a similar comparison to Figure 1. This shows that the gender balance at MIT is representative of NZ institutions and this has remained stable over time. Students are a mixture of those who chose to leave education early as the high school system was not working for them; those who were forced to leave out of financial necessity, teen pregnancy or family need; those who are at crossroads and have made a conscious decision to change direction; and those who are battling with a new life in a new country and having to retrain in the English language. Figure 3 shows a comparison of age group characteristics between NZ figures for 2003 and current MIT figures. A rise in younger students is a general trend in current NZ bridging programmes (Tertiary Education Strategy, 2002-7, p.15.) The recent influx of younger school leavers is not surprising as in South Auckland, Manukau City statistics show 800 students leave school each year with few or no qualifications. (Quality of Life, p. 64.)

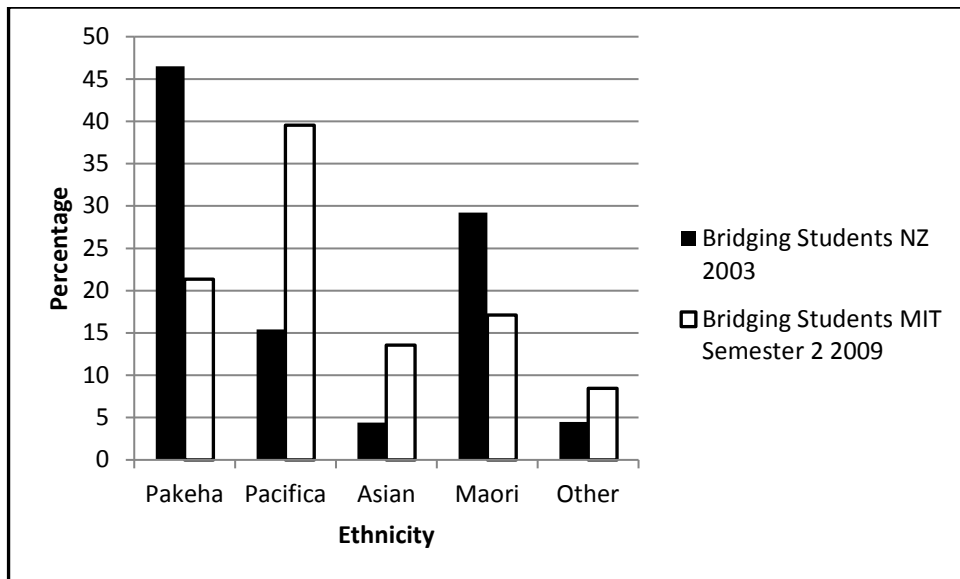


Figure 1: Comparison of ethnic groups of bridging students NZ (2003) and MIT(2009)
 (Benseman & Russ, 2003, p.55)

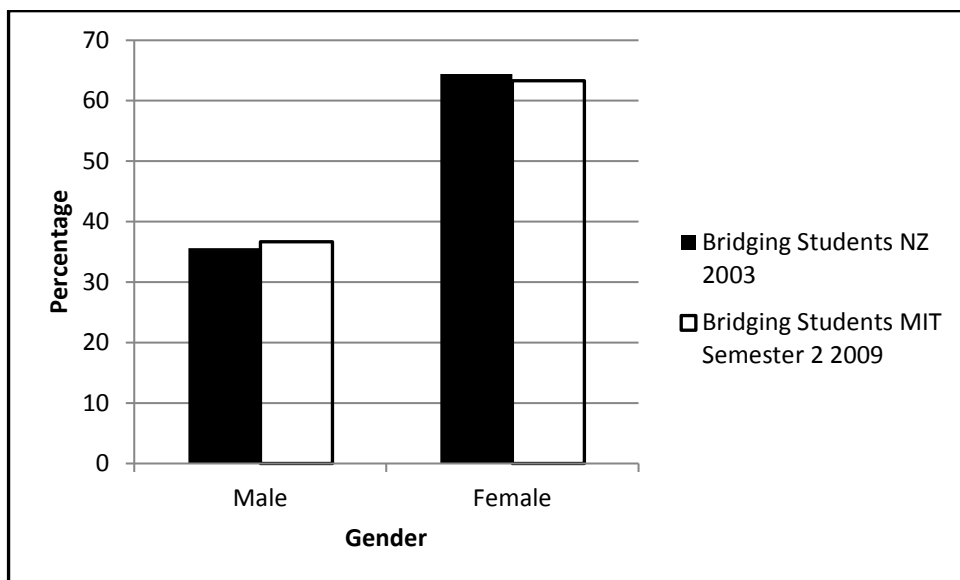


Figure 2: Comparison of gender of bridging students NZ (2003) and MIT(2009)
 (Benseman & Russ, 2003, p.55)

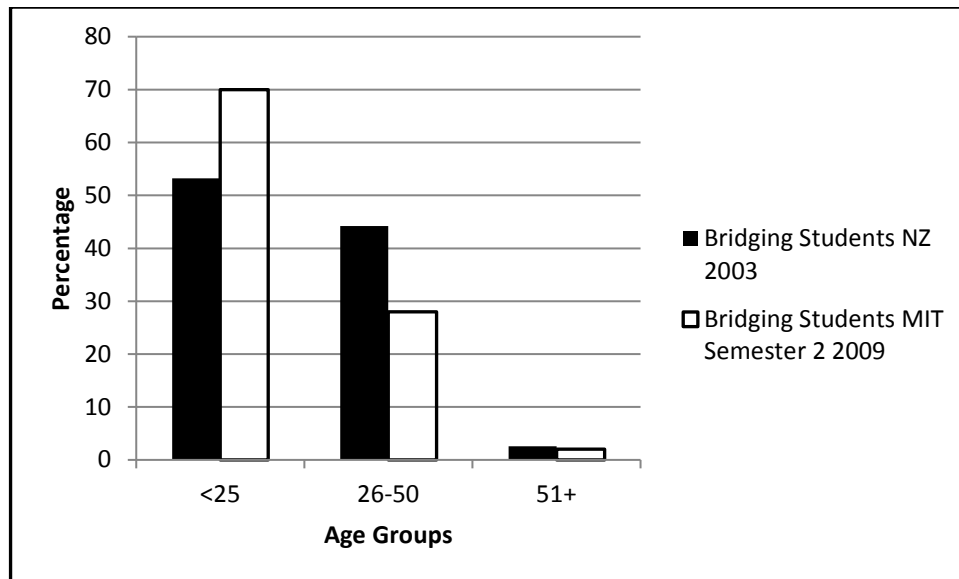


Figure 3: Comparison of age groups of bridging students NZ (2003) and MIT(2009)
 (Benseman & Russ, 2003, p.54)

Stuart Middleton, in his paper, *Participation or Success*, looked at the question of success for foundation students. He suggested that

in all the work that we do we help people by giving them success - the only currency that education has that is worth striving for. (2003, p.5.)

The Foundation Pilot was based on the premise that Second Life would be a useful vehicle for helping students to achieve interview success step-by-step. For many foundation students, life experience has included failure and rejection, and this can make interview preparation seem like an overwhelming task. These students can be supported in the relative safety of the Second Life environment. The ability to be represented by an avatar provides a sense of security so that more reserved students can be encouraged to participate in role-plays in a less threatening environment.

Motivation Design

From the inauguration of the “Engaging with Second Life; Real Education in a Virtual World” project, the team has faced the challenge of providing documented and informative guidelines for the development process in an area where techniques and proven methods are largely nonexistent. The SLENZ Project Development Roadmap (SLENZ, 2009) was an attempt to delineate the development process, acknowledging key stages, processes, and decision-making criteria. The thinking behind the Roadmap was largely guided by an extensive Literature Review (Salt et al., 2008).

The Literature Review states that Second Life learning can be examined in terms of behaviourism, cognitivism and constructivism, as well as newer theories such as linguistic and socio-cultural theories (Salt et al, 2008, p. 39.) Linguistic theories examine the designs and symbolism used to create technology such as Second Life and the lack of sustainability of the language of the past in communicating about the computer innovations of the present and future. MacCaw (2008) suggests that Second Life relies on familiar relationships to landscapes and to the social interactions that occur within them. She discusses Second Life

in terms of colonisation, and how the development of culture in Second Life is reflected in our colonial history. Respect for cultural difference became an important learning design consideration. All these theories provided the educators on the SLENZ team with insights and ideas, but no single model or construct was able to adequately underpin the work in Second Life.

John Keller's ARCs Model of Motivational Design was examined in relation to the Foundation Project. "As with all forms of adult education, an individual's learning outcomes from participating in Second Life are also directly impacted by the intrinsic and extrinsic motivation to participate." (Salt et al, 2008, p.43.) Motivational design refers to the process of arranging procedures and providing resources that lead to increased levels of student motivation (Keller, 2006, p.3.) Motivational design aims at determining replicable principles and processes that can be used to improve students' motivation to learn and skills in self-motivation.

Traditionally the focus on learning design has been the technique and process of producing effective instructional resources. Keller's design adds a different perspective where the designer needs to consider processes and strategies for making learning appealing and rewarding. The key is that learning must be efficient in terms of teaching resources and time, inherently interesting and effective. This can be done by ensuring that motivational tactics support instructional goals.

Keller (2006) categorized motivational design models into four groups: person-centred models, where motivation is seen to derive from the satisfaction of psychological needs, drives, motives and potentials; environmentally-centred models, where motivation is determined through environmental conditions and learning is seen to be facilitated by moving students from extrinsic to intrinsic motivators; interaction-centred models, where human values and innate abilities are seen to be influenced by environmental factors, and Keller's ARCS Model (2006, p.12) is a specific example; and omnibus models, which are complete systems of teaching designed to accomplish a specific instructional purpose.

According to Keller's ARCS Model, promoting and sustaining learning motivation is accomplished by: attention (through perceptual or inquiry arousal), relevance (using concrete language and examples), confidence (helping students realise they can succeed), and satisfaction (providing positive results and feedback) (Keller, 2006, p.7.) The environment of Second Life is ideal for promoting motivation through attention. The Foundation build in Second Life uses colour, design features, and striking graphics to enhance perceptual arousal. The information provided to students in the form of noticeboards around the build has been designed to be simple, using concrete language and relevant examples. The scripts for specific job interviews were put together using concrete language and questions relevant to a specific job context. By starting students on simple activities, basic skill-building, then leading them step-by-step through successive stages and levels of interviewing it was hoped that students would be able to have successful and positive experiences.

Oliver (1999) outlined the importance of learning activities, resources and supports in online teaching. Keller (2006) emphasised the importance of providing positive, confidence-building experiences (Keller, 2006, p.7.) The development process was guided by an understanding of the importance of providing effective and relevant experiences and

efficient resources and processes. The SLENZ team made a decision to use a staged design and development process, with each stage of development guided by specific objectives tied to learning outcomes. The Foundation Project team agreed on an overall learning outcome for the pilot, and this was stated as “Key interview skills and practices are discussed and demonstrated”. The learning design for the pilot was documented and activities outlined. (Lemon, 2009.) A list of resources for the development phase was drawn from the learning design document.

Method

The first face to face meeting of the SLENZ group was held in mid-December 2008. One result of the meeting was the production of a document, the SLENZ Timeline (SLENZ, 2009) that was used as a guide for the team throughout the project. The first six months of 2009 was spent constructing builds and resources that would be used by students in the second half of 2009.

On the island for Kowhai in Second Life a specialised environment has been created for the use of foundation students. This build includes a large hyperdome where different scenes can appear as they are required: a shop with changing rooms and pose stands becomes a catwalk and seating area, or a demonstration interview room, or a media and discussion area. Resources include a Stairway of Learning, with large boards that summarise key elements of interviewing knowledge. Each board has an associated note card with extra information. All information on the build has been made accessible on Wiki Educator. A quiz tests students' absorption and retention of the information on the boards and cards.



Figure 4: The basic interviewing room in Second Life

From a further set of platforms or stairs, students can access interview rooms. There are twelve teleporters to transport students to these rooms, and from a menu students select whether they want to go to a general interview room, a career pathway interview room, or a specific job interview scenario. Students start with the general interview room

until they have gained some degree of mastery. Career pathway interviews include teaching, nursing, and policing. A further choice is the whānau (family in Māori) interview room, with the setting being an interview with the health provider Te Kupenga o Hoturoa. Five specific job interview scenarios include: National Bank (finance), 3M (marketing), Rainbow's End (travel and tourism), Motorworx (automotive), and Hell's Pizza (hospitality/customer service). These companies have participated in the preparation of resources that include interviewer scripts for each scenario. For interview practise in all rooms, students wear a HUD (Heads Up Display) that enables them to either shake hands, hongi or bow as required. The interview rooms have lists of generic and behavioural interview questions to guide interviewers and scripts in the more specialised rooms. Students need to prepare for these interviews using web information and criteria given for each pathway/job.



Figure 5: Students changing clothes for interview practise in Rapungakore (You have come to the right place...), the student clothing store



Figure 6: Interview practise in the whānau room

The build on Kowhai has the feel of New Zealand with ponga and pohutukawa trees, so that students can identify with the environment. Although Second Life is considered a simulated environment rather than a game, part of the appeal of Second Life is that it does not limit itself to the bounds of simulating reality alone, so the build has a

futuristic design that draws on the elements of fantasy to promote creativity. Instead of physically moving from room to room, the rooms appear and disappear as needed, and instead of walking to the interview rooms, students are teleported. The resources available on the build have been made available to all educators and information from note cards and lesson plans has been shared using Wiki Educator. The build is designed to be functional, unambiguous, and reusable.

Results

As this pilot is still a work in progress it is impossible to provide complete results and conclusions at this stage. The pilot commenced on August 17th 2009. Students at Manukau Institute of Technology Foundation and Business Services, and at Northland Institute of Technology Foundation and School of English have been using the Second Life resources since August 17th and the final class for the pilot will be held in Second Life on November 16th 2009.

Many positive outcomes were achieved during the first orientation sessions. Firstly, student motivation was extremely high. Although motivation has never been an issue in Future Focus classes, the level of enthusiasm expressed by students suggested an increased level of motivation. Students seemed to be happily engaged in the learning activities. One older Pacifica student with limited computer knowledge or skill, worked steadily, with a smile on his face. Students were very supportive of each other. The success of the orientation process may be partly attributable to the nature of the resources and partly to the inherent interactivity and sensory stimulation provided by the environment. Part of the session involved answering questions and working for a reward of Linden dollars (the currency used within Second Life to buy and sell goods). This was an extrinsic motivator that had students fully engaged. There were problems encountered, but these were largely technical (a loss of voice ability for 15 minutes) or situational (the media were present in the first class and there were many distractions.)

Following the initial orientation sessions with two classes, it was interesting to note that attendance increased from session to session for both classes. Two anecdotal examples deserve mention. Two students in trouble for poor attendance and behaviour were present in all Second Life sessions, seemed fully engaged and worked hard to complete tasks. A previously non-attending student approached the lecturer before the third session and asked if she could please come to class! She wanted to participate in the interview training in Second Life.

Students have reflected on their interview practises. A few representative reflections are:

Student A: I am not worried about going for my real life interview anymore as I now know I can do it, and the SL practise has been so REAL!

Student B: I thought being interviewed was a good experience, especially being interviewed by someone I am not familiar with. It was especially good to have to think about those answers as I haven't really been asked any of them before.

Student C: Being an interviewee in the first place, I was a bit nervous and I shook hands with the interviewer, and it made me feel confident to sit down getting ready

to answer questions. But I had the feeling that I answered the question in the proper way the interviewer needed.

When it came to being an interviewer, I learned from what other people were saying about themselves and I also improved myself in some of the questions that I didn't do good on.

Student D: I didn't like being the interviewer because I didn't know what questions to ask, being interviewed was funny because of the questions ***** asked, and I learnt about what sort of questions will be asked at a real interview.

Student E: I felt funny discussing personal details with friends. I was uncomfortable, I don't think this is for me.

Student E's reflection was noteworthy as the problem she experienced in Second Life was not related to the environment in which she was working, but was a problem related to the attempt to learn interviewing skills in any classroom setting. Student E also had difficulty seeing the validity in using what she saw as a "game" for learning. Cheal (2009) described this problem in her discussion of student perceptions of a course taught in Second Life. She commented:

Virtual worlds as educational spaces—with their three-dimensional landscapes and customizable avatars—seem so similar to video games that educators may assume, as we did when we considered designing a course in Second Life, that students will become as motivated by virtual worlds as they are by video games. However, these same similarities may also lead students to perceive virtual worlds as play spaces rather than as innovative educational environments. If students feel that learning opportunities offered in such spaces are not valid, they are likely to feel that they are not learning. (p.7)

The greatest difficulties faced in the Second Life sessions were technical problems with lagging computers, failed voice and crashing. These sessions were mainly on days when the computer rooms received the greatest usage and/or when Second Life itself was the busiest, eg. Monday morning or Sunday evening in the United States when the number of residents in Second Life is at a peak. Cheal (2009) also identifies technical issues as a leading cause of consternation for students, but a problem that can be addressed with relative simplicity.

A further anecdote indicates a positive outcome for the Second Life classes at MIT. Students involved in Future Focus courses through the Foundation department, are assessed in a real life interview with a guest interviewer brought in specifically to conduct one-on-one interview sessions with students. The guest interviewer was asked if any students were particularly memorable in interview sessions. The interviewer selected students he felt had been the most prepared and confident interviewees, and all students selected had been involved in the Second Life sessions. As only four out of ten classes had been in Second Life, this seemed like an impossible coincidence. Marks were examined that had been recorded in Jasper (the results recording programme currently in use at MIT). It is possible for students to be awarded a Merit Pass for the interviewing assessment. The results seem to indicate the effectiveness of the Second Life addition to course presentation.

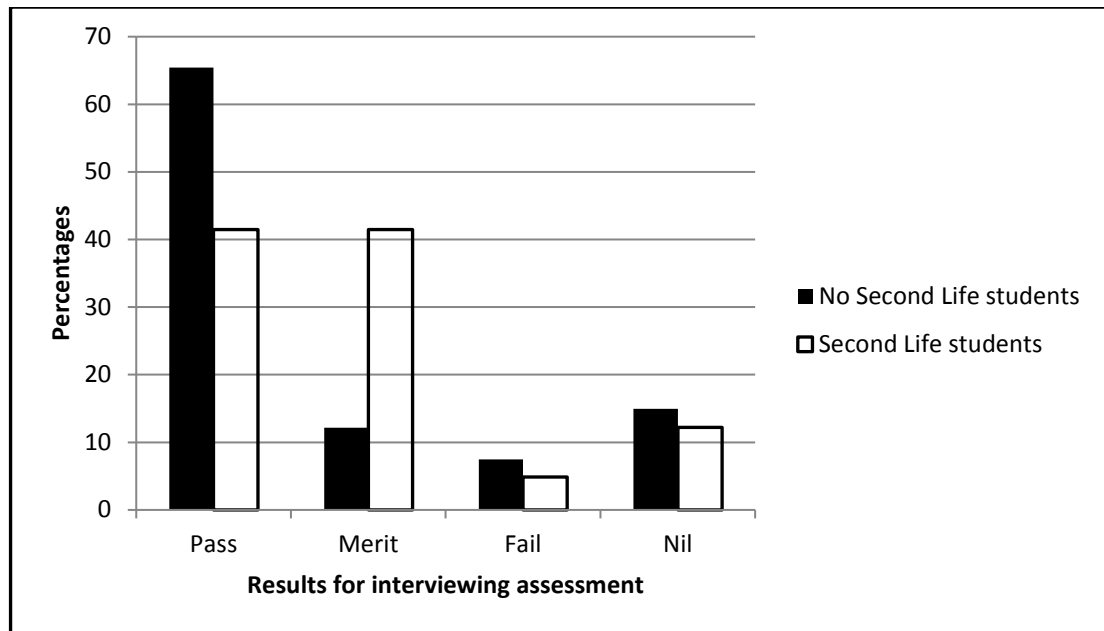


Figure 7: Interview results for FFCarPI students, Semester 2, 2009

Suggestions

The Second Life build for foundation students has the potential to be used for other bridging/enabling courses, eg. communication theory. There is also the potential for the resources to be extended in scope and purpose and offered to other departments within the tertiary sector, eg. to social work and nursing departments for training students to take case notes, to teaching departments to prepare trainees for student and parent interviews, or to business or management students to prepare for oral business reports.

Within Second Life there is a wide range of activities and a diversity of educational areas already in existence. The build on Kowhai is only one of many that could be used to enrich the learning for enabling students.

As the number of these builds increases, almost all of which are freely accessible, the opportunities for utilising and building on the work of others grows too.: (Salt et al., 2008, p.37.)

In Second Life there are many examples of supportive and collaborative communities of educators. ISTE (the International Society for Technical Education and the New Media Consortium are two such organisations.

There are indications in research and anecdotal accounts that the resources developed for teaching in Second Life may be utilised in other ways. One of these is for improving literacy. It is widely acknowledged that there is a steep learning curve when first participating in Second Life, but this also can be seen to lead to increased IT literacy, a key skill in most professions today. The steep learning curve did not appear to be a problem to students in this pilot but did lead to anxiety and possibly the loss of some of the collaborators on the foundation pilot team. Literacy in terms of reading and writing can be developed through the use of note cards and notice boards, resources utilised on most educational

builds. Second Life also has many educational sims (or builds, usually individual islands or large sections of land) where learning experiences lend themselves specifically to the development of both literacy and numeracy, eg. The Language Lab, International Schools, StoryKeepers Garden and the Maths Playground.

The use of Second Life may also make an impact on foundation learners' performance and retention. Weusijana, Svihla, Gawel, and Bransford (2009) concluded:

because students in our study were able to associate their MUVE experiences to course-relevant concepts, we believe that classroom practice can be enhanced with the use of MUVES. MUVE experiences can provide opportunities for teachers to observe and assess students' understanding of concepts based on their performance. The experience may then be the subject of reflective writing and discussion, allowing more opportunities to assess student learning... a virtual environment can provide a more reliable and instructive learning experience than may be available in a real-life context. (p.6)

The early experience of the Foundation Pilot has indicated that the immersion and engagement of the learning experience in Second Life may encourage attendance and productive use of class time.

The importance of learning through social networking has also been identified as an important aspect of Second Life education. Siemens (2005) described the theory of connectivism where the act of learning stems from forming a diverse network of connections and recognising attendant patterns. Second Life is all about collaborating and networking. Educational developments in Second Life are being shared and educators need to become more adept at finding the resources that are available.

Conclusion

The SLENZ (Second Life Education in New Zealand) pilot for foundation students is aimed at improving interview skills. This pilot is part of the "Engaging with Second Life; Real Education in a Virtual World" project. The SLENZ foundation team worked through a development process that started with an examination of student context and learning design. A build was created in Second Life to enable the learning activities to take place. Students from two New Zealand polytechnics are currently engaged in these learning activities on the island of Kowhai. The lessons in Second Life have met with enthusiasm from the majority of students. A high level of engagement has been demonstrated to date.

Dr Clare Atkins, joint leader of the SLENZ project, has been involved in Second Life teaching and research for a number of years. At the completion of a student project in 2008, Dr Atkins stated:

...(We) emerged from the project with a strong belief in the value afforded by the Second Life environment, a strong sense of the apparently limitless possibilities for education and a very clear understanding that we are currently on the edge of a major shift in educational delivery for which the maps are only in the very early stages of development. (p.88.)

It seems that there is potential for enabling education in Second Life. There is a need for more research to redefine a theoretical framework that suits the Second Life environment, to discover how best to utilise the potential of Second Life to facilitate the learning experiences of students, and how to enable students with the skills they need to progress academically in an engaging and motivating way through the use of MUVES such as Second Life.

References

- Anderson, H. (2007). Bridging to the Future: What works? *Proceedings of the 2nd National Conference of Enabling Educators 'Enabling Education: What Works?' (July 2007) NSW*. Retrieved 22 August, 2009 from <http://www.coda.ac.nz/mit et cp/1>
- Atkins, C., & Caukill, M. (2008). Serious Fun and Serious Learning: The Challenge of Second Life. In J. Molka-Danielson & M. Deutschmann (Eds.) *Learning & Teaching in the Virtual World of Second Life* (pp. 79-89). Trondheim: Tapir Academic Press.
- Benseman, J. & Russ, L. (2003). Mapping the territory: A survey of bridging students in New Zealand. *New Zealand Journal of Adult Learning*, 31(1). Retrieved 22 October, 2009 from <http://www.teacherswork.ac.nz/nzjournalcontents/nzjal.php>
- Blackall, L. (2008). Retrieved December 4, 2008, from <http://learnonline.wordpress.com>
- Carpenter, II, B. (2009). Virtual Worlds as Educational Experience: Living and Learning in Interesting Times. *Journal of Virtual Worlds Research*, 2(1). Retrieved 9 July, 2009 from <http://journals.tdl.org/jvwr/article/view/625/469>
- Cheal, C. (June/July 2009) Student Perceptions of a Course Taught in Second Life. *Innovate - Journal of Online Education*, .5 (5). Retrieved 22 August, 2009 from <http://innovateonline.info/index.php?view=article&id=692&action=article>
- Kay, J., & FitzGerald, S. (2008). *Educational Uses of Second Life*. Retrieved September 8, 2008, from <http://sleducation.wikispaces.com/educationaluses>
- Keller, John M. (2006). *What is Motivational Design?* Retrieved 10 December 2008 from <http://www.arcsmodel.com/pdf/Motivational%20Design%20Rev%20060620.pdf>
- Lemon, M, (2009) Learning Design. *Foundation Interviewing with SLENZ – Developing Student Skills in Second Life*, (March 2nd, 2009) from <http://briarmelle.edublogs.org/>
- Linden Lab. (2009) *Virtual World Simulation Training Prepares Real Guards on the US-Canadian Border: Loyalist College in SL*. Retrieved 22 August, 2009 from http://secondlifegrid.net.s3.amazonaws.com/docs/Second_Life_Case_Loyalist_EN.pdf

- MacCaw, C. (2008). *Art and (Second) Life: Over the hills and far away?* Retrieved December 2, 2008, from http://journal.fibreiculture.org/issue11/issue11_mccaw.html
- Middleton, S. (2003). Participation or Success: Which is worth the paper it is written on? Proceedings of the 3rd annual Bridging Conference (September, 2003) Manukau. Retrieved 30 July, 2009 from http://74.125.155.132/search?q=cache:F2ssTufrS0kJ:www.manukau.ac.nz/About%2520Us/executive/student/Bridging_Conference_2003.doc+Participation+or+Success:+Which+is+worth+the+paper+it+is+written+on%3F&cd=1&hl=en&ct=clnk&gl=nz
- Oliver, R. (1999). Exploring strategies for online teaching and learning. *Distance Education*, 29, (2), 240-254.
- Quality of Life in New Zealand's Six Largest Cities A forward from the Mayors. (2000). Auckland: Print Strategies Ltd. Retrieved 1 September, 2009 from http://www.bigcities.govt.nz/pdfs/Quality_of_Life_2001.pdf
- Salt, B., Atkins, C, Blackall, L. (2008). *Engaging with Second Life: real education in a virtual world*. Retrieved 20 August, 2009 from <http://slenz.files.wordpress.com/2008/12/slliteraturereview1.pdf>
- Second Life Economic Statistics. (2009). Retrieved 2 September, 2009 from <http://secondlife.com/statistics/economy-data.php>
- Second Life Education. (2009), *Virtual Environments Enable New Models of Learning*, Retrieved 22 August, 2009 from <http://secondlifegrid.net/slfe/education-use-virtual-world>
- Siemens, G. (2005). Connectivism: A learning theory for a digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1). Retrieved 9 August, 2008, from <http://www.elearnspace.org/Articles/connectivism>
- SLENZ (2009). *Foundation interview skills in Second Life*. From <http://wikieducator.org/Foundation>
- SLENZ (2009). *Project Development Roadmap*. From http://docs.google.com/Doc?id=dj2k8bp_35g9hw6hf7
- SLENZ (2009). *SLENZ Timeline*. From <http://spreadsheets.google.com/pub?key=pfLjXj2HUUmLgRfaj08Wg>
- TEC. (2002-7). *Tertiary Education Strategy*, From <http://www.tec.govt.nz/upload/downloads/tertiaryeducationstrategy-2002-2007.pdf>
- Virtual World Watch. (2009) *Surveying virtual world use in UK universities and colleges*, Eduserve. Retrieved 22 August, 2009 from <http://virtualworldwatch.net/2009/06/22/early-summer-2009-snapshot/>

Weusijana, B.K., Svihla, V., Gawel, D., & Bransford., J. (June/July 2009) MUVES and Experiential Learning: Some Examples. *Innovate - Journal of Online Education*, 5 (5). Retrieved 22 August, 2009 from <http://innovateonline.info/index.php?view=article&id=702&action=login>