Designing and recording machinima to illustrate professional practice scenarios

Yvonne Masters
School of Education, Faculty of the Professions
University of New England

Barney Dalgarno
School of Education and RIPPLE Research Institute
Charles Sturt University

Sue Gregory
School of Education/ DEHub, Faculty of the Professions
University of New England

Immersive virtual worlds, such as *Second Life*, have attracted widespread interest in recent years as platforms for online role-plays of professional practice scenarios. An alternative application of virtual worlds is the video recording of in-world role-play activities, 'machinima', for later use as stimuli for class discussions or individual reflective activities. The scripting and recording of machinima to illustrate particular practice scenarios is seen as an alternative to recording video in authentic practice contexts, potentially addressing some of the inherent ethical and logistic issues. This paper describes the process used to design, record and produce machinima illustrating a series of classic classroom teaching practice scenarios as part of the Office for Learning and Teaching VirtualPREX project.

Keywords: virtual worlds, *Second Life*, role-play, machinima, professional practice, scenario based learning

Introduction

VirtualPREX (virtual professional experience), a project funded by the Office for Learning and Teaching, is designed to explore the use of a virtual world classroom for practice teaching. A consortium of universities is working to develop role-play scenarios that will assist pre-service teachers in their preparation for professional experience (practicum) placements, as well as exploring innovative ways in which these scenarios can be used for assessment tasks.

The initial development of the scenario based learning and the results of the first phase of this study have been published previously (Gregory et al., 2011; Masters, Gregory, Dalgarno, Reiners, & Knox, accepted forthcoming). In this paper we examine the development of exemplar machinima that can be used as either the basis of assessment tasks or as an example to guide students in developing their own machinima.

The paper is structured to firstly provide a discussion of machinima literature: the ways in which machinima have been used in other projects and how this has informed the development of machinima by the authors. An outline is then provided of how the exemplar scenarios were planned, followed by a description of the creation of the machinima and the technical issues that needed to be addressed. In the conclusion of the paper we discuss the value of machinima to this project and also to other fields of endeavour, thus helping to create a sustainable learning future.

Literature Review

Professional experience is well-documented as a problematic aspect of teacher education (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Swabey, Castleton, & Penney, 2010). One particular concern is the shortfall in placement availability for the number of pre-service teachers in training and, more particularly, quality placements (Abbott-Chapman, 2011; Barbousas & Nicholson, 2009; O'Keeffe, 2011). VirtualPREX, by providing opportunity for teaching simulation, seeks to redress these issues. The use of machinima, for assessment and reflection, is one component of VirtualPREX. In the use of machinima, VirtualPREX overcomes the requirement for a live classroom, demonstrates teaching in a risk-free environment and also alleviates the privacy and ethical issues of filming real children.

Lowood (2011, p. 4) defines machinima as "the making of animated movies in real time through the use of digital game technology and assets". While this form of animation was originally related to games (Kirschner, 2011), Fosk argues that machinima have advanced beyond game related animation and have now "made their way into higher education courses", expanding "into genres that include drama, comedy, documentary, educational material, advertising, art, and political activism" (2011, pp. 26-27). It is in the genre of educational material that machinima have been incorporated into the VirtualPREX project.

Machinima have been used in other educational projects for a variety of purposes (Alden, 2008; Butler, 2010; Dreher & Dreher, 2009; Grace, 2009). Alden (2010) briefly outlines how machinima have been used to assist in health practices while Grace (2009) outlines the use of machinima for army training. Dreher and Dreher (2009, p. 5) used machinima within an Information Systems course where students developed machinima, using *Second Life (SL)*, to present a business case and report that "through the use of the Machinima screen capturing technique, students document in detail all essential aspects of their projects, thus providing a critically rich, reflective learning experience that is reusable". The capacity for reflection and also the possibility of re-use of machinima are elements that are important in VirtualPREX. Pre-service teachers can use machinima to reflect on a range of aspects of teaching and can re-use the machinima for different purposes.

Butler (2010, p. 88) also reports the advantageous use of machinima, in this instance in legal education. He argues that too often traditional teaching "ignores the interdependent relationship of situation and cognition" and that there is a need for more contextual experiences. The work that Butler reports, where machinima were used to "depict real-world-type ethical dilemmas" (p. 91), is similar to the approach taken in VirtualPREX. The VirtualPREX researchers concur with Butler's (2010, p. 96) comment that "the use of machinima means that, instead of considering such complex questions on the basis of disembodied names and broadly described locations in a text-based problem, they may be addressed in a more realistic milieu". Muldoon, et al. (2008) used machinima to teach accounting concepts in an authentic setting through a story development and storytelling approach. The machinima developed for VirtualPREX reflect a similar storytelling quality.

Drawing on the ways in which machinima had previously been used to enhance education and training, machinima of the role-plays conducted by pre-service teachers as part of VirtualPREX were developed at an earlier stage of the project (see http://www.virtualprex.com/machinima.html for examples). The development of exemplar machinima was the next progression in machinima use. These exemplars have the capacity to support structured critical reflection activities, which could form the basis of assessment tasks.

Planning the scenarios

In order to prepare for the recording of exemplar machinima, two of the VirtualPREX research team undertook the task of planning the scenarios. These team members (hereafter referred to as designers) decided what the focus of the scenarios should be and how many scenarios might be recorded on the day designated for this aspect of the project and designed a planning template to capture all of the detail needed by those taking part in the role-play to follow. To complete this task, the designers, who were geographically distant, held weekly teleconferences, beginning four weeks before the recording day, and compiled email reports of the discussions allowing other team members to comment on key decisions.

The original term used to describe the machinima was 'best practice' scenarios. In the initial discussion, the designers moved away from this terminology believing that 'best practice' is a contestable notion. In teaching, views of 'best practice' would differ depending upon the learning theory espoused: constructivism, behaviourism, etc. The machinima to be developed, albeit enacted by experienced teachers, would have aspects in them that could be critiqued by others as not reflecting certain views of 'best practice'. The decision was made to use the term 'exemplar' in preference, particularly in terms of its definition as "a typical member" (Turner, 1987): the scenarios would be developed as typical examples of how certain issues would be approached in classrooms by teachers, without claims to either 'best practice' or being the only approach.

After the initial discussion regarding the terminology for the machinima, the designers then discussed the template that could be used for loose scripting of the scenarios. It was believed that creating broad outlines for the scenarios was a more productive method than writing full scripts. Scripted machinima would not have allowed for spontaneity from those in the role-play and could have detracted from the natural teaching method of the person playing the part of the teacher in the scenario. In this respect, the VirtualPREX team differed from the previously reported project by Butler (2010) where scripts were written and followed closely.

One of the first tasks of the designers was to decide the issues to be explored through the machinima. It was decided that one would look at aspects of classroom management, as management of pupil behaviour had been a key focus of the earlier role-plays. It was also decided that another machinima should be developed with a focus on the basic teaching skills of introducing and concluding a lesson. To check that the approach taken was accurate, various behaviour management textbooks were consulted, and the identified scenarios were discussed with experienced teacher educators.

A template was designed, with the belief that this could be used for any scenario and could be provided as a guideline for anyone who wished to develop their own machinima. The template included the following sections: the title and overview of the scenario; the lesson content and main teaching strategies demonstrated; the actors, their roles and their avatar names; the additional avatar controllers and production staff roles; a description of the virtual environment, layout and initial positioning of the avatars; and a table containing the series of events, the timing of each and the camera positions. This template, after further refinement, along with guidelines for producing machinima, will be available from the VirtualPREX website at the conclusion of the project. The VirtualPREX exemplar role-play scenario scripts can be found at http://virtualprex.com/exemplarscenarios.html.

Acting out the scenarios

The recording of the machinima took place in a computer laboratory (lab) in one of the host institutions' campus. It took the best part of a day to record four machinima of between 3 and 5 minutes duration each. Six people participated in this, with one person managing the video and audio recording, including camera control, a second person controlling all of the non-speaking characters, and the remaining four people acting particular roles. The participants were all members of the research project team or academic staff members. None of the participants had any formal acting training. The designer of each scenario took on the role of director for the recording of that particular scenario, as well as acting the teacher in the scenario. The process of recording each scenario began with a discussion about the purpose of the scenario and the sequence of events and as part of this discussion role allocations were agreed on. Rather than rehearsing before commencing recording, we began recording at the commencement of our first attempt to act out each scenario. Our feeling was that our improvised actions and lines would sound more realistic than rehearsed performances. Nevertheless each scenario took a number of takes (the minimum was three takes and the maximum was four).

At the conclusion we saved all of the audio and video files onto a removable hard drive for editing. This turned out to be challenging due to some technical complexities with the audio recording software (see further discussion below) as well as different ways in which the audio tool was used by participants on the different computers in the lab. In retrospect, it would have been valuable to have a larger team and have one person take on a dedicated director role and another person take on the role of technical producer. The team had allocated the director role to the author of the scenario that was being role-played because they were most familiar with the scenario. However, they were also the main actor for the role-plays. It would have been more appropriate to have the main actor allocated to another member of the team to enable the director to coordinate procedures better. There was a dedicated technical producer who oversaw the machinima production, quality assurance of video, video angle and audio. However, because they were also responsible for controlling the five cameras (each attached to an unassociated hidden avatar controlled through separate computers), the technical producer was unable to also ensure that the audio software was recorded by the actors correctly (there were some takes where the audio was not recorded correctly on the particular actor's computer, but the quality of the audio captured by nearby computers was found to be sufficient).

Student avatars were provided with a variety of *SL* scripts to enable the actors to animate their avatar during the role-plays. These included pre-installed scripts from the software and also animations for sitting, reading and writing. The school student avatars were animated to respond to requests from the teacher to ensure that the machinima recordings appeared authentic.

Technical process

The technical producer set up five computers to record the machinima to ensure various camera positions and angles could be used in the final editing process. As previously mentioned, the role-plays were recorded in a computer lab, to ensure all actors used the same hardware and software platform. The original plan was for dialog to occur using *SL* audio, with actors wearing headsets to avoid audio feedback. Unfortunately, the audio was not working in *SL* due to network restrictions. To address this issue, we decided to speak out loud and record real talking. This turned out to be an excellent way of creating the audio as it was clear and crisp and ensured good quality. There was still one problem that was not foreseen. As the audio was not working in *SL*, the

avatar's mouths were not lip-synced: that is, the avatar's lips did not move when speaking. This problem was overcome during production by re-recording the close ups with the avatar's lips moving when speaking. Fortunately, this was not required on many occasions.

Finally, the machinima was created using video editing. Overall, creating machinima takes several hours for a five minute script. It is much faster if high quality video images and multiple camera angles are not required. However, for the VirtualPREX machinima, this level of quality was essential.

Conclusion

This paper has reported on the process used to create a series of machinima illustrating particular classroom teaching scenarios for use by pre-service teachers as part of an in-class reflective discussions or alternatively as part of assessment tasks. We have described the process we used to design, record and produce the final machinima. Some of the key recommendations for others emerging from the process are as follows: using a loose plan for the scenarios rather than tight scripts does work, but probably requires additional takes to get right; ensure that you have sufficient people present when the machinima are recorded, including dedicated people to play each role, to operate the virtual cameras, to oversee the technical process and direct proceedings; and make sure that you set aside a longer period than you think you will need so that if you do need additional takes, or if technical problems occur, you do not need to reassemble the whole team at a later date.

As with the projects referred to in the literature review, these machinima demonstrate the capacity for this genre to be used across a range of disciplines for skill practice and also for critical reflection. They also pave the way for innovative assessment tasks. Given the reported difficulties with professional experience placements referred to in the literature review, machinima provide a sustainable approach to support future teacher training preparation. This approach could make a lasting contribution to the way professional experience is delivered into the future.

Acknowledgements

References

Abbott-Chapman, J. (2011). Making the most of the mosaic: facilitating post-school transitions to higher education of disadvantaged students. *The Australian Educational Researcher, 38*(1), 57-71.

Alden, S. (2008). Get a [Second] Life. *Hospitals & Health Networks, 82*(8), 20.

Barbousas, J., & Nicholson, M. (2009). *Research into field experience in teacher education programs in NSW Tertiary institutions*. Paper presented at the New South Wales Teacher Education Council Annual Conference.

Boyd, D. J., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2009). Teacher preparation and student achievement. *Educational Evaluation and Policy Analysis, 31*(4), 416-440.

Butler, D. (2010). Entry into Valhalla : contextualising the learning of legal ethics through the use of Second Life machinima. *Legal Education Review, 20*(1), 85-108. https://doi.org/10.53300/001c.6232

Dreher, N., & Dreher, H. (2009). *Using machinima documentary in virtual environments to reinvigorate* students' learning in systems development. Paper presented at the ICL 2009 - 12th International Conference on Interactive Computer aided Learning,. Retrieved from http://espace.library.curtin.edu.au:80/R?func=dbin-jump-full&local_base=gen01-era02&object_id=131976

Fosk, K. (2011). Machinima is growing up. *Journal of Visual Culture, 10*(1), 25-30.

Grace, V. J. (2009). To train troops, Army creates digital reenactments of roadside bomb attacks. *National Defense, 94*(673), 58.

Gregory, S., Dalgarno, B., Campbell, M., Reiners, T., Knox, V., & Masters, Y. (2011). Changing directions through VirtualPREX: engaging pre-service teachers in virtual professional experience. In G. Williams, P. Statham, N. Brown, & B. Cleland (Eds.), *Changing Demands, Changing Directions*. Proceedings ascilite

Hobart 2011 (pp. 491-501). http://www.leishman-associates.com.au/ascilite2011/downloads/papers/GregoryS-full.pdf

Kirschner, F. (2011). Machinima's promise. *Journal of Visual Culture, 10*(1), 19-24.

Lowood, H. (2011). A 'Different Technical Approach'? Introduction to the special issue on machinima. *Journal of Visual Culture, 10*(1), 3-5. https://doi.org/10.1177/1470412910391546

Masters, Y., Gregory, S., Dalgarno, B., Reiners, T., & Knox, V. (accepted forthcoming). VirtualPREX – Providing Virtual Professional Experience for Pre-Service Teachers. In S. Gregory, M. J. W. Lee, B. Dalgarno & B. Tynan (Eds.), *Virtual Worlds in Online and Distance Education*.

O'Keeffe, D. (2011, 15 September). Teacher placements raised with inquiry. *Education review*. Retrieved from http://www.educationreview.com.au/pages/section/article.php?s=News&idArticle=22116

Swabey, K., Castleton, G., & Penney, D. (2010). Meeting the standards? Exploring preparedness for teaching. *Australian Journal of Teacher Education, 35*(8), 29-46. https://doi.org/10.14221/ajte.2010v35n8.3

Turner, G. W. (Ed.). (1987). *The Australian Concise Oxford Dictionary of Current English*. Melbourne: Oxford University Press.

Author contact details:

Yvonne Masters, ymasters@une.edu.au
Barney Dalgarno, bdalgarno@csu.edu.au
Sue Gregory, sue.gregory@une.edu.au

Please cite as: Masters, Y., Dalgarno, B. & Gregory, S. (2012). Designing and recording machinima to illustrate professional practice scenarios. In M. Brown, M. Hartnett & T. Stewart (Eds.), Future challenges, sustainable futures. Proceedings ascilite Wellington 2012. (pp.607-611).