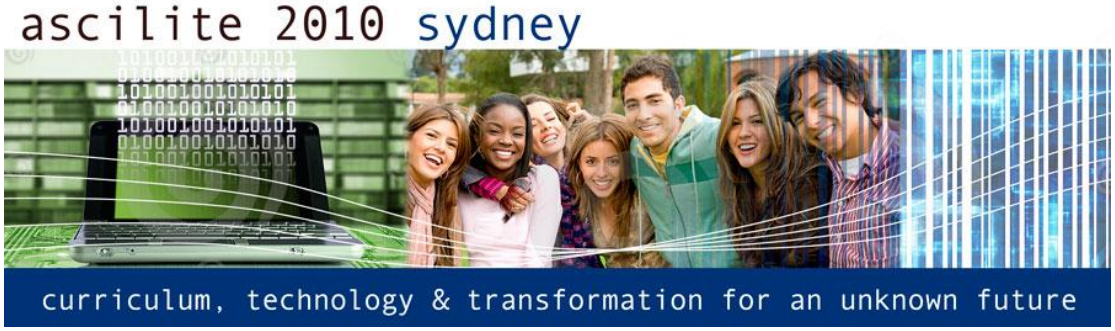

Scenario-based multi-user virtual environments (MUVEs) in education

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The rapid growth in the use of virtual worlds in educational contexts has raised many questions about the pedagogical benefits of these technologies for teaching and learning. This symposium will focus on the use of scenario-based multi-user virtual environments (MUVEs) in education and will specifically focus on: 1) the role of virtual worlds in education; 2) the value of scenario-based MUVEs in inquiry learning; 3) the role of 'collaboration' in a multi-user environment; 4) the design issues; and 5) the challenges that need to be addressed to ensure that students can benefit from the virtual experience.

Keywords: MUVEs, virtual worlds, scenarios, collaboration, pedagogy

Introduction

The topic will be of interest to the ascilite community as virtual worlds have been the subject of much discussion in higher education. The Australia –New Zealand Horizon Report (2009) states that virtual and alternate realities are one of the technologies to watch over the next five years as they are proving to be an effective means of attracting and gaining students' attention and interest. Worlds such as *Second Life* have seen a growth in popularity as a vehicle for enabling communication between students, their lecturers and their peers in a virtual space. While virtual worlds such as *Second Life* can be used to support scenario-based learning, there are also several scenario-based MUVEs such as *Quest Atlantis, Urban Science, River City,* and *Virtual Singapura* that are underpinned by a scenario and are more akin to a role-playing game than a virtual lecture or meeting room. This symposium will explore the benefits and challenges in using scenario-based MUVEs in a variety of contexts. The topic will be of interest to the ascilite community who are interested in exploring the potential learning affordances that scenario-based MUVEs offer in providing inherently motivating and engaging learning experiences through the use of such emerging technologies.

Symposium format

The symposium will rely heavily on participant involvement. The purpose of the symposium is not to 'tell' people about scenario-based MUVEs, but to gather from the audience a range of experiences and ideas that may provide collective insights, feedback and possible solutions to the challenges involved in designing and developing a scenario-based MUVE.

- **Introduction** (Michael Jacobson)
- **Group activity** (Shannon Kennedy-Clark)
  Participants will be provided with a series of questions to discuss in small groups. The purpose of this activity is to elicit past experience on the use of MUVEs and to gain an understanding of the audiences' perceptions of the value of MUVEs in education. Clear distinction will be made between scenario-based MUVEs and other virtual environments.
- **Panel presentations** (Michael Jacobson, Denise Wood, Debbie Richards, Shannon Kennedy-Clark)
  Members of the panel will share with the group some of their experiences with the use of scenario-based MUVEs. This will be in response to ideas raised during the group activity rather than pre-planned presentations. The panels will also include demonstrations of scenario-based virtual activities.
- **Final Q & A:** Audience questions and discussion with the panel.

Panel presentations

The presentations by panel members are outlined below. However, given the nature of the symposium, presenters may adjust their focus to suit the needs of the audience. All of the presenters will provide examples based on their experiences in developing and using scenario-based MUVEs.

Michael Jacobson

Research findings will be reported about secondary level students who used the *Virtual Singapura* MUVE to learn science inquiry skills and knowledge about communicable diseases. The design features of the *Virtual Singapura* MUVE will be discussed followed by a discussion of the main findings from two studies. Results from an earlier study found enhanced problem solving performance for students who participated in a paper based "analogical encoding" activity after having completed the science inquiry unit involving *Virtual Singapura* over students in two comparison conditions. The talk concludes with a consideration of the interplay of learning activities both within an educational MUVE and outside in the classroom, and of the importance for new research into the efficacy of different types of pedagogical activities that involve MUVEs for learning subject specific knowledge and skills.

Denise Wood

This presentation will report on the outcomes from research undertaken through an ALTC funded project, which involves the design of an accessible 3D virtual learning environment, together with a series of guidelines addressing pedagogy and ethical considerations for teaching in virtual worlds. Case studies will be reported as the foundation for discussion focusing on the benefits of scenario based MUVEs and some of the challenges for programmers involved in the development of decision tree algorithms to support scenario-based MUVEs and teachers implementing such strategies within the undergraduate curricula. Further information about the ALTC funded project is available from url: http://www.unisanet.unisa.edu.au/3dvle/toc.asp

Debbie Richards

Collaboration in MUVEs is often taken as a given. However, putting two or more people in a virtual environment does not necessarily mean that they will effectively collaborate and gain the benefits associated with collaborative learning and group work. Key elements of group work are shared goals, distribution of tasks, different roles and something kids in particular hate to do - plan. Add the need to communicate and express oneself, resolve different points of view, and share resources, there are indeed many issues that can arise. This presentation will consider issues such as competition and ego and how to use both as positive motivators; how gender attitudes to collaboration versus competition

can vary and affect the interactions and experience; social-loafing and free-riding in groups; how to assess the group and individual in a way that aligns with the learning outcomes.

Shannon Kennedy-Clark

How to structure inquiry activities within a scenario-based MUVE has been the focus of research for the Virtual Worlds Project. This presentation will focus on finding the balance between providing instruction in how to use the environment and not telling students how to solve the problems. A demonstration of *Virtual Singapura* will be provided.

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These references were selected as they are based on the use of scenario-based MUVEs or role-playing games in education. Predominately, they focus on the use of scenario-based MUVEs in secondary school education.

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