Online Text-based Roleplay-Simulation: The Challenges Ahead

Robert Mclaughlan[#]; Denise Kirkpatrick[*]

[#]Faculty of Engineering, University of Technology, Sydney; [*]Learning and Teaching Centre for Learning and Teaching Support (CeLTS), Monash University, Melbourne

[#]robert.mclaughlan@uts.edu.au; [*]denise.kirkpatrick@CeLTS.monash.edu.au

Abstract. Online Roleplay-Simulation has widely been shown to be an effective teaching and learning tool based on participant feedback. Central to achieving the desired learning outcomes from these activities is the way communication media is used within them. The communication media within online roleplay-simulation environments often include email, text chat, discussion forums (using bulletin boards) as well as Internet search tools. It has been recognized that these different forms of communication delivery are not neutral-they invoke or evoke particular kinds of learning behaviour. While electronic dialogue can support interactions such as information exchange, opinion and suggestions which are integral to such simulations it is less suited for communicating agreement and disagreement and for social-emotional tasks involving conflict and negotiation. A key feature of role-based learning is their experiential nature and the reliance upon reflection of actions within the activity. This presents a challenge for educators to design activities that use communication media effectively. During various stages of an online roleplay-simulation challenges arise in relation to online dialogue management, online tools for reflection, online socialization and supporting persona development and participant interaction. Some strategies that have been found to address these issues include using features of the online roleplay-simulation software to monitor participant interaction, promoting groupwork interactions and learning designs that consider the limitations of the available communication media and Internet access, creating activities which develop participant information literacy skills, and the appropriate use of blended learning to support activities which are constrained by the available communication media.

1. INTRODUCTION

There is an emerging body of practice within higher education for using online test-based roleplay-simulations to develop the capacity of participant to undertake complex decision-making. Whilst they are applied across different disciplines [1], they are particularly used within the social sciences [2], [3], [4].

Knowledge about these Internet mediated roleplay-simulations is starting to appear in the literature [5], [6]. Internet mediated roleplay-simulations appear to be effective at developing;

- An awareness of different perspectives about an issue
- Awareness of different organisations and their roles/responsibilities
- Practice with procedures/protocols
- Appreciation of socio-technical system dynamics
- Integrating skills into action: negotiation, ICT (computer) literacy, problem-solving, teamwork

Central to achieving the desired learning outcomes from these activities is the way communication media is used within them. Our understanding of how to effectively use these type of communication media particularly within role-based collaborative learning activities and the extent to which these activities need to be redesigned to exploit their affordances is still emerging. It is only since the late 1990's that Internet-mediated communication tools have been widely available within the higher education sector and incorporated into teaching activities.

The aim of this paper is to describe the educational challenges that designers and facilitators of online roleplay-simulation face as they seek to deliver higher quality learning outcomes. These challenges are identified from the literature and from the authors experience over a ten year period in running various large scale (20 to 150 participants) online roleplay-simulations in a higher education environment. It is thought that the designers and managers of online text-based roleplay-simulation may be able to improve learning outcomes from these types of activities by ensuring that the communication media and learning design issues raised in this paper are appropriately addressed within their teaching activities.

2. INTEGRATING THE INTERNET INTO ROLEPLAY-SIMULATION

Roleplay within a simulation/gaming framework allows for human participants to adopt a role that encompasses a set of interests, values and knowledge. These perspectives are then operationalised within a simplified but functionally relevant version of a complex decision-making context. Whilst this description adequately describes the overall activity within both a face-to-face and on online version of roleplay-simulation there are qualitative differences in the experiences for participants engaged in these different types of roleplay-simulation

The integration of the Internet into roleplay-simulation can allow; access to information resources that can be more easily manipulated, analysed and synthesised than paper based resources; alternate ways to access information; communication with other participants in a place and time independent manner as well as software mechanisms that allow testing and tracking of participants activities and learning during the roleplay-simulation. The participants are impacted by the affordances of the Internet mediated

communication tools and may therefore communicate and therefore learn in different ways depending on the communication media available. Each different type of communication media will emphasize or constrain a particular kind of experience and therefore impact ways of knowing. While electronic dialogue can support interactions such as information exchange, opinion and suggestions which are integral to such simulations it is less suited for communicating agreement and disagreement and for social-emotional tasks involving conflict and negotiation [7].

One approach to understanding the different affordances of communication technologies is media richness theory [8]. The richness of a media refers to the potential information-carrying capacity of data, or the capacity of information to provide substantial new consensual understanding It is usually defined primarily in terms of objective and technical medium characteristics such as the availability of instant feedback, use of multiple cues, natural language, and personal focus. These four characteristics all contribute to a medium's ability to transmit rich information. Face-to-face is considered the richest medium because it allows rapid mutual feedback, allows uses natural language, multiple cues to convey meaning, and can convey emotions. This is followed by the telephone, electronic messaging systems, addressed written documents (eg email, text chat), unaddressed written documents and numeric documents such as statistical reports. For effective communication the richness of the media should match the ambiguity of the message. Leaner media are incapable of reducing uncertainty and resolving multiple interpretations, but when the message concerns clearly defined issues leaner media such as email are most efficient for conveying the precise written and quantifiable data. The richness of media will affect the effectiveness with which meaning is conveyed in different contexts. It is therefore important to try to match the tasks being undertaken within an online roleplay-simulation and knowledges that need to be shared with the availability of appropriate communication media and other task characteristics.

The communication media within online roleplay-simulation environments often include email, text chat, discussion forums (using bulletin boards) as well as Internet search tools. Through these technologies participants can adopt anonymity [9], communicate with other participants and teachers independent of place and time, interact with participants from different backgrounds [10], have alternate ways to access a wider variety of information and have immediate access to information resources that can be manipulated, analysed and synthesised more easily than paper-based resources. The integration of information and communication tools and their affordances are likely to lead to qualitatively different learning experiences for online versus face-to-face roleplay-simulations.

The extent to which Internet mediated communication is incorporated into a roleplay-simulation can result in learning environment which ranges from a blended mode where there is a significant amount of interaction and resource support involving face to face activities through to distance mode where interactions and resources access are conducted predominantly through online activity.

3. LEARNING DESIGN OF ONLINE ROLEPLAY-SIMULATION

The learning designs of online text-based roleplay-simulations used across higher education are understandably diverse. They often model professional practice and so the different disciplinary approaches used in engineering, science, business and social science will be reflected to varying degrees in the practices used in fields such international politics, business management, environmental decision-making and crisis management. These fields historically are the most frequent users of online roleplay-simulation. The key activity stages outlined below are those used in an environmental magement simulation [11], and occur sequentially over a period of 5 weeks. The various stages and type of communication technology used have strong similarities to other online roleplay-simulations [2],[3].

3.1 Briefing stage

The Briefing stage involves participants becoming familiar with the communication technology, online learning environment and associated website as well as the overall structure and purpose of the online roleplay-simulation activity and specific requirements that must be met as part of participation. In an educational environment this often includes subject assessment requirements and codes of conduct. Participants can be allocated into groups at this stage. Small numbers of participants (2-4) often share a single persona.

3.2 Role Adoption stage

This stage involves participants researching a range of different information sources to develop an understanding about the responsibilities, views and strategies of their adopted persona identity, the geo-political or organisational context in which they operate and the types of issues which they may have to address as a personae.

3.3 Interaction stage

The Interaction stage comprises interactions between different personae in response to events that have occurred and the actions of other personae. The events are designed to cause interdependence by encouraging specific personae to come together for mutual goals and rewards or to negotiate over a shared resource or problem. The events may be modeled on news events such as the announcement of a public event on a specific topic or the discovery/restriction of a scarce resource shared by various personae. Participants are therefore required to operationalise their understanding of various persona and the simulated environment gained during the Briefing stage. This understanding includes the motivations and values of the other personae and is reshaped as participants experience consequences that follow from their actions. These interactions are conducted primarily using email.

3.4 Forum stage

A Forum stage involves a more public discussion of an issue compared to the Interaction phase. This stage

involves personae posting submissions in response to the issue being discussed and responding to other submissions. In face to face environments this phase may be convened as a rountable discussion. During the Forum stage participants gain an understanding of multiple perspectives about the issue being debated due to the broader cross-section of personae able to respond to submissions. These submissions are made using bulletin boards and comprise threaded discussions.

3.5 Debriefing stage

In the Debriefing stage participants identify what they have learned as a consequence of participating in the online roleplay-simulation. The debriefing may comprise the online publication by each participant of an incident/reflection reports, private reflection undertaken whilst writing a report submitted externally to an examiner, or an interactive face to face session. A face-to-face session often uses a structured process of guided recall, reflection and analysis of the roleplay-simulation based on the experiences and understandings of the participants present [12].

4. CHALLENGES IN USING ONLINE-ROLEPLAY SIMULATION FOR LEARNING

Whilst the benefits of simulations for learning have been widely lauded there has been a lack of substantial research to substantiate these claims. "One is struck by the gaps in our knowledge about the educational simulation/gaming process or about those elements that contribute to its effective or ineffective use" [13]. In our experience there are five key challenges related to the effective use of communication media within online roleplay-simulations.

4.1 Managing online text-based dialogue

Participants within online discussion activities have identified that the threaded structure of the discourse within discussion boards and the large number of postings were not suited to high levels of closure or consensus building within these activities. The limitations of asynchronous computer mediated communication and threaded discussion boards in providing support for convergent process (e.g. synthesizing and summarising) have also been recognised in other studies [14].

4.2 Creating reflective practice online

Reflective practice is central to both knowledge synthesis and self-directed learning and needs to be facilitated within either an experiential or a collaborative learning framework. Reflection can focus on a variety of issues, including the tacit norms underlying a judgement, the strategies behind an action, the feeling associated with an event or the specific role a person is trying to fulfil [15]. It is therefore a key part of online roleplay-simulations. However we have found it difficult to create a suitable environment online for the large number of participants (i.e. 100-140 people) in our online roleplay-simulation to share knowledge and attitudes. Strategies we have tried include online debriefing reports integrated with face-to-face sessions. Face-to-face debriefing sessions used a stepwise-facilitated process to model a process for critical reflection that students could apply to the interpretation of

experiences from the activities. Then the debriefing reports allowed students to integrate multiple perspectives and incidents and generalise their understanding about decision-making.

4.3 Supporting persona development and participant interaction

During online roleplay-simulations with multiple geographic sites it is possible to have persona groups made up of participants from one site or several. Having participants from multiple sites and disciplines was found to create a rich learning environment for some participants. It was also found to require significantly increased communication skills and resources to function as an efficient team. In our experience limiting of persona groups to a single site was found to improve communication within groups but also make explicit support to groups more managable for facilitators. One effective strategy was to create conditions so that groups could authentically form alliances, this allowed participants to explore the challenges of finding consensus within small diverse groups. Some software environments collect data on participant logins and interactions which allows the facilitator of an online roleplay-simulation to detect inactivity by participants and to take action to encourage their participation.

4.4 Online socialisation and familiarisation with the learning environment

A particular challenge in a large scale online roleplay-simulation can be the complexity of the learning environment where participants need communication and group work skills that will allow them to establish effective working relationships with their peers very quickly in both traditional face-to-face settings and in an Internet mediated environment. The use of text based messenging as the primary means of communication can also make building relationships more difficult. Our experience suggests the need for face-to-face communication during the initial stages of the collaborative experience (e.g briefing and role adoption phase) when both group formation and a shared understanding of the problem are being developed. Another effective strategy we have used involves introductory activities that explicitly facilitate the establishment of relationships among group members.

4.5 Evaluating learning from online roleplay-simulations

There is little data and few studies on how learning occurs in the rich, ill-structured and complex environment of an online roleplay-simulation and how this knowledge could be used to better support student learning through improved simulation design. Many proponents of Internet mediated roleplay-simulation claim they are effective educational activities based on student perceptions of the achievement of learning objectives set by the simulation designer. Whilst these studies are useful to develop an understanding of some aspects of the learning that may occur within these environments they are limited in their ability to contribute to a deeper understanding of the nature of the learning outcomes that the participants believe they have achieved. Existing methodologies used

in discourse analysis of computer mediated communication [16], [17] have not been critically evaluated and trialled for their utility within role-based collaborative learning environments. One of the few published studies into the nature of the learning which occurred within an Internet mediated roleplay-simulation noted that the "types of discourse in question defy easy categorization, and traditional methods of text or conversation analysis do not adequately explain the complex activities that occur in these games"[18]. There is a clear need to identify appropriate methodologies to understand the nature of the knowledge building process which occurs in these learning environments.

5. CONCLUSIONS

Online roleplay-simulation has been widely shown to be an effective teaching teaching and learning tool based on participant feedback. However there is a concern that the practices used in online teaching have outpaced the development of the pedagogies needed to support them. Internet mediated roleplay-simulation is an example of a teaching practice that is qualitatively different to a face-to-face roleplay-simulation, and which has not yet been adequately theorised. There are a number of challenges related to the use of communication media that need to be overcome through improved learning design before the full benefits of learning through online roleplay-simulations are to be realised.

REFERENCES

1. McLaughlan, R.G. & Kirkpatrick, D. (2001) "Peer Learning Using Computer Supported Roleplay-simulations", In *Peer learning in higher education: Learning from and with each other*, edited by D. Boud, R. Cohen, and J. Sampson (London: Kogan Page), pp. 141-155.
2. Naidu, S., Ip, A. & Linser, R. (2000) "Dynamic Goal-Based Role-Play Simulation on the Web: A Case Study", *Educational Technology & Society*, vol. 3, no.3, pp. 190-202.
3. Galea, C. (2001) "Experiential Simulations: Using Web-Enhanced Role-Plays to Teach Applied Business Management", *Information Technology and Management*, vol. 2, pp. 473-489.
4. Starkey, B.A. & Blake, E.L. (2001) "Simulations in international relations education", *Simulation & Gaming*, vol. 32, no. 4, pp. 537-551.
5. Asakakawa, T. & Gilbert, N., (2003) "Synthesizing experiences: Lessons to be learned from Internet-mediated simulation games", *Simulation & Gaming*, vol. 34, no. 1, pp. 10-22.
6. Golja, T. (2003) "Generating professional knowledge based on e-Learning research and development". In G. Crisp, D. Thiele, I. Scholten, S. Barker & J. Baron (Eds), *Interact Integrate Impact: Proceedings of the 20th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education*. Adelaide, 7-10 December 2003, pp. 203-214.
7. Hiltz, S.R & Wellmann, B., (1997), Asynchronous learning networks as a virtual classroom, *Communications of the ACM*, 40(2):44-49.
8. Trevino, L. K., Lengel, R. H., Bodensteiner, W., Gerloff, E.A., & Muir, N. K. (1990). The richness imperative and cognitive style. *Management Communication Quarterly, 4*, 2: 176 - 197.
9. Freeman, M. A. & Capper, J. M. (1999), Exploiting the web for education: An anonymous asynchronous role simulation, *Australian Journal of Educational Technology*, 15(1):95-116.
10. Cox, B.M. (1999) Achieving intercultural communication through computerised business simulation/games, *Simulation & Gaming*, 30(1):38-50.
11. McLaughlan, R.G. & Kirkpatrick, D. (2004) Online roleplay: Design for active learning, *European Journal of Engineering Education*, 29(4):477-490
12. Lederman, L.C. (1992) Debriefing: Towards a Systematic Assessment of Theory and Practice, *Simulation & Gaming*, v23(2):145-160.
13. Woofe, J. and Crookall, D. (1998) Developing a Scientific Knowledge of Simulation/Gaming, *Simulation & Gaming*, 29(1):7-19
14. Hewitt, J. (2001). Beyond Threaded Discussion, *International Journal of Educational Telecommunications*, 7(3), 207-221
15. Caffarella, R.S. & Barnett, B.G. (1994) "Characteristics of adult learners and foundations of Experiential learning, In Experiential Learning: A New Approach", *New Directions for Adult and Continuing Education*, no. 62, edited by L. Jackson, and R.S. Caffarella (San Francisco: Jossey-Bass), pp. 29-42.
16. Gunawardena, C.N., Lowe, M.A. & Anderson, T (1997) Analysis of global online debate and the development of an interaction model for examining social construction of knowledge in computer conferencing, *Journal of Educational Computing Research*, 17(4):397-431
17. Thomas, M.J.W. (2002) Learning within incoherent structures: the space of online discussion forums, *Journal of Computer Assisted Learning*, 18:351-366.
18. Kupperman, J.; Weisserman, G. And Goodman, F. (2000). The Secret Lives of Students and Politicians: Online and Face to Face Discourse in Two Political Simulations, *Annual meeting of the American Educational Research Association* (Seatle, WA, April 10-14)