Educators' perceptions about using MUVE for teaching

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We describe qualitative research conducted to provide a rich description of educators' perceptions about using multiuser virtual environments (MUVE) for teaching. We obtained the data by conducting semistructured interviews of educators, with questions focused on the expected benefits of MUVE and on the known determinants of technology acceptance.

Keywords: educators' perceptions, MUVE, Second Life, technology acceptance, qualitative research

Introduction

Multiuser virtual environments (MUVE) allow non-collocated users represented by avatars to interact in a virtual reality setting. At present, the most widely known and used MUVE is Second Life (Linden Lab, 2009) - an environment created and maintained by Linden Lab.

The potential of MUVE in education, particularly in distance education, was recognized early, and with the emergence of Second Life as the first ever MUVE with massive following the ranks of adopters are growing. In New Zealand, the Second Life Education New Zealand (SLENZ) project (Second Life Education New Zealand, 2009) financed by the New Zealand Tertiary Education Commission exemplifies both the grassroots movement by teachers to adopt MUVE and institutional support towards such a movement.

Yet, the impact of MUVE in current teaching practice remains extremely small. The speed of MUVE adoption and the ultimate shape a broadly adopted MUVE-based teaching environment is going to take is bound to be influenced by teachers' perceptions about MUVE. The aim of our study is to provide a rich description of teachers' perceptions about MUVE usefulness and adoption.

Methodology

To obtain a rich description, we relied on applying the constant comparison analysis method (Corbin & Strauss, 2007) to qualitative data obtained via semistructured interviews involving 22 educators: 11 with an experience of using the Second Life for teaching, and 11 with no experience in using MUVE. We selected participants to include educators from a wide variety of backgrounds. To ensure that participants with no experience in using MUVE have a general concept of MUVE capabilities, we created a teaching environment in Second Life and demonstrated it to each such participant before the interview.

We created a questionnaire (Schedule of Questions, 2009) that focused on two major areas: the potential benefits of using MUVE for teaching, as claimed by the literature on e-learning, and the factors known to influence technology adoption decisions, as documented in literature devoted to TAM (Technology Acceptance Model), diffusion of innovation, and related models (refer to Venkatesh, Morris, Davis & Davis, 2003, for a review). We employed open-ended questions encouraging participants to elaborate their opinions and perceptions.

To obtain a list of potential benefits, we reviewed about 50 journal and conference articles devoted to the use of Second Life and other MUVE in teaching. We included a potential benefit in the list when literature demonstrated a belief that the benefit exists (we did not require an empirical proof that the benefit is real). We identified the following potential benefits: environment associated with having fun (edutainment for computer gamers), media rich experience, flow effect resulting in students remaining

focused, mutual awareness leading to collaboration between students, emotional connection between teachers and students enables more effective feedback, teaching in 3-d environments simulating the real world that are not available for teaching in the real world, teaching in 3-d environments representing important concepts (environments that do not exist in the real world), and role-playing by assuming different avatars.

As to factors known to influence technology acceptance decisions, we included questions covering ease of use, enjoyment, control, pressure emanating from others accepting the technology, availability of support, compatibility with existing practice, and perceived security. It should be noted that we did not include "perceived usefulness" - known to be a major determinant of acceptance - in this list, as it is covered in considerable detail by questions devoted to potential benefits.

Participants with no experience in MUVE were interviewed conventionally, in person, while practitioners of teaching in Second Life were interviewed in the Second Life environment (thus, both the researcher and the participant were represented by their avatars). The answers were recorded and fully transcribed. The answers were independently analysed by two researchers, with findings later compared for triangulation purposes. Initial findings were made available to the participants for their comments, which were treated as an additional source of data.

Results

Due to size limitations, we discuss here only what we view as the most significant, striking and unexpected findings (a full account of the results of the analysis is to be published elsewhere).

Regarding ease of use, many educators perceived a potential for disparity along dimensions such as gamer / non-gamer, male / female and "digital native" / "digital immigrant".

A number of educators perceived that the similarity between MUVE and computer games can, in fact, be a barrier to adoption because "some can treat anything in that environment as a game or at least of lesser importance than if delivered more formally". As for the flow experience, concerns were voiced that it may draw students to aspects of the environment that are not relevant to learning or result in addiction (or, from a more constructive perspective, the flow experience should be carefully designed to result in productive behaviour).

As to emotional connections emerging in MUVE environment, most of the educators appeared to be sceptical (although one of the participants who had an experience of meeting a relative in MUVE acknowledged that, in the hindsight, emotionally the meeting resembled a conventional face-to-face meeting).

Educators demonstrated a range of beliefs regarding the importance of control - from concerns that conventional techniques intended to control classes will not work in MUVE, to (in one case) an assertion that control is an illusion and thus is not important. A number of people thought that the ability of students to assume different avatars rather than being a positive feature (enables role-playing), is undesirable as it is likely to undermine their ability to control them.

Beliefs regarding the impact of what other educators/institutions do considerably varied. While most of the respondents recognized that the use of MUVE for teaching by others will build pressure for further adoption (or could be used as "justification" for adoption), a number of respondents asserted that for them, the adoption by others will have no impact on their behaviour. This can be put in parallel with educators' perceptions of the impact of technical support - while most recognized the availability of support as a possible positive factor, others asserted that they are self-reliant.

The difference between educators with experience in using Second Life for teaching and those with no MUVE experience was not drastic - although some of the educators with no experience felt rather cautious about using MUVE, in both groups the overall attitude about using MUVE for teaching was quite positive.

References

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