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This is the author's version of a work that was submitted/accepted for publication in the following source:

[Mathews, Shane W.](#), [Andrews, Lynda](#), & [Luck, Edwina M.](#) (2012) Developing a Second Life virtual field trip for university students : an action research approach. *Educational Research*, 54(1), pp. 17-38.

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<http://dx.doi.org/10.1080/00131881.2012.658197>

**Developing a Second Life virtual field trip for
University students: An action research approach**

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Developing a Second Life virtual field trip for University students: An action learning approach

Abstract

Background: Integrating 3D virtual World Internet technologies into educational subjects continues to draw the attention of educators and researchers alike. The focus of this study is the use of virtual worlds, such as Second Life, in teaching. In particular, it explores the potential of using a virtual world experience as a learning component situated within a curriculum delivered predominantly through face-to-face teaching methods.

Purpose: This paper reports on a research study into the development of a virtual world learning experience designed for marketing students taking a Digital Promotions course. The experience was a student field trip into Second Life to allow students to investigate how business branding practices were used for product promotion in this virtual world environment. The paper discusses the issues involved in developing and refining the virtual course component over four semesters.

Methods: The study used a pedagogical action research approach, with iterative cycles of development, intervention and evaluation over four semesters. The data analysed were quantitative and qualitative student feedback collected after each field trip as well as lecturer reflections on each cycle.

Sample: Small scale convenience samples of second and third year students studying in a Bachelor of Business degree, majoring in marketing, taking the Digital Promotions subject at a metropolitan university in Queensland, Australia participated in the study. The samples included students who had and had not experienced the field trip. The numbers of students taking part in the field trip ranged from 22 to 48 across the four semesters.

Findings and Implications: The findings from the four iterations of the action research plan helped identify key considerations for incorporating technologies into learning environments. Feedback and reflections from the students and lecturer suggested that an innovative learning opportunity had been developed. However, pedagogical potential was limited, in part, by technological difficulties and also by student perceptions of relevance.

Key words: Second Life, higher education, marketing curriculum, pedagogical action research, virtual worlds

Introduction

One of the challenges put forward by The New Media Consortium's Horizon Report (Johnson, Levine, and Smith, 2008, p.3) pertaining to higher education over the coming years is "a need to provide formal instruction in information, visual, and technological literacy as well as in how to create meaningful content with today's tools". A related challenge has been identified in academic literature that calls for developing "pedagogically innovative and quality practices for technology-enhanced education" (e.g. Kankaanranta, 2004, p.1, cited in Kankaanranta, 2005; Kozma, 2003) For many educators, this challenge is more often being addressed at the

undergraduate level (Dalgarno et al., 2011) where the cohort is likely to be more technologically savvy.

Wood, Solomon and Allan (2008) suggest that the ‘Millennial Generation’, i.e. those aged 16-24 will be the ones who place the most pressure on educators to reconsider how they deliver education curricula. Students considered to be Millennials process information differently, have been more immersed in technologies during their life and have a strong need for interactivity, having spent more time playing complex and participatory video games than studying or reading (Drea, Trip and Stunkel, 2005). They are highly receptive to technology-based pedagogical experiences (Ferrell and Ferrel 2002) and they thrive in online environments (Childress and Braswell 2006). Particularly at undergraduate level, educators can expect their students to be highly engaged with a whole range of Web 2.0 technologies such as Facebook, blogs, Myspace, YouTube (Wood et al., 2008).

This is not to imply that the Millennials have a different learning style per se, but that they may have certain expectations regarding the integration of these new technologies into learning experiences at university. It is further noted that although new technologies continually become available for teaching in higher education, changes to educational practices respond more slowly (Schneckenberg, Ehlers and Adelsberger, 2011).

Regarding the use of virtual worlds in higher education, research does indeed suggest that they can be incorporated into pedagogical practices in curricula, although doing so may challenge “traditional pedagogic relationships” between educator and students (Twining, 2011). Thus, they can provide students with meaningful educational experiences that enhance their learning (e.g. Dalgarno et al., 2011, Kirriemuir, 2011) while at the same time, improving their technological literacy skills (e.g. Campbell, 2009; Daniels Lee, 2009). It is arguably important, therefore, that educators consider what place these new technologies have in their course curriculum. Moreover, they need to understand the extent to which using such technologies will add pedagogical value to their learning and teaching practices to achieve positive student outcomes (Kankaanranta, 2005).

Background: virtual worlds in higher education teaching and learning

Second Life is an immersive virtual world or 3D graphical environment, and for educators, is possibly the most preferred and widely used platform (Dalgarno et al., 2011; Kirriemuir, 2011). Developed by Linden Labs, users can access it through the Web for no cost as the software is free to download. Users create an *avatar*, a computer generated persona of themselves (Childs, 2010), that represents both their presence in Second Life and their identity (Dickey, 2003). It also acts as the “camera” (Dickey, 2003, p. 107) or eyes of the user to view the 3D virtual environment. Avatars have a range of mobility functions that permits movement such as walking, flying, and teleporting to simulated environments in Second Life where they can engage in numerous types of activities.

The imperative of integrating of virtual worlds, such as Second Life (SL) into higher education teaching and learning is the subject of research (e.g. Dalgarno et al., 2011; Jarmon et al., 2009, Kirremuir, 2011). Follows is an examination of selected research to illustrate how SL has been used to augment the subject curriculum and provide additional learning experiences for the students (e.g. Alrayes and Sutcliffe 2010; Campbell, 2009; Daniels Lee, 2009; Yule, McNamara and Thomas 2009).

Daniels Lee (2009) used SL in the delivery of an MBA level Operations Management subject. Students were required to learn the key objectives of the subject curriculum through a project that required them to locate and research a virtual business in SL. Student outcomes involved the experience of learning about operations management through their selected virtual business and by making comparisons with real world businesses (Daniels Lee, 2009, p. 11). An additional outcome for the students was exposure to a 3D virtual world Internet technology - in this case, SL. Most of the students indicated that, since virtual worlds are part of the future, it was important that they were exposed to them. Daniels Lee (2009, p.11) reported that, in general, students found the project worthwhile although many were “not sure whether it belonged in an operations management class”. Although she does not elaborate on this comment, she reports that students also said that the project was time consuming and, at times, they were confused about how to proceed with the activities expected. Moreover, from her own observations, Daniels Lee found that some students were more fully engaged in learning about operations management SL, whereas others did

not put in the time. As a result, the students' quality of research undertaken for the project was quite varied (Daniels Lee, 2009, pp.11-12).

Alrayes and Sutcliffe (2011, 5) discuss the use of SL for their Business team Project module, with the main learning objectives focused around practising collaborative groupwork. Evaluation of students' experiences of the SL-based project suggested mixed results. On the one hand the SL experience rated low for learning outcomes, less motivation or interest in using SL and poor ratings for the effectiveness of SL for learning (Alrayes and Sutcliffe, 2011). On the other hand students rated SL more positively in terms of improving collaboration and appreciated its inclusion in the module. Despite overall good results at the end of the module, students still did not recommend the use of SL in any learning activity (Alrayes and Sutcliffe, 2011, p. 12).

Campbell (2009) investigated student teachers' responses to, and perceived usability of, virtual worlds for teaching practice. The objective was to provide final year Education students with the appropriate skills necessary to critically and purposefully engage with new technologies, in this case SL, to enhance their teaching capabilities in preparation for moving out into the workforce. Student evaluations of the SL activity suggest that they felt it provided them with important experiences regarding the use of virtual world technologies for teaching purposes. However, only a quarter of participants indicated that they would consider using SL, specifically the 'Teen Life'* environment of SL, in their actual teaching, citing security concerns for young students as the main reason (Campbell, 2009, p.12). The teaching and learning outcomes, however, suggest that students engaged in and created highly relevant educational activities in SL, thus achieving the goals of the course (Campbell, 2009, p.14). * Teen Life was closed on 31st December 2010 and merged with the main SL grid (Linden, 2010).

SL has also been used in teaching Law students, for developing mootings skills (Jule, McNamara and Thomas, 2009). Students were required to practice their mootings skills in a virtual law court custom built by the Law faculty for this activity. Evaluations through focus groups suggested that SL did not assist the students to develop their mootings skills, primarily based around a number of limitations related to avatar capabilities e.g. facial expressions and gestures/body stances. They also

reported a lack of engagement in the mooting exercise and that the effort involved preparing for mooting in SL was not worth the effort (Jule et al., 2009).

The literature suggests that using virtual worlds can provide additional benefits for students' educational learning experiences. For example, within SL, students can feel "a sense of personal presence and tangible experiences" that enhances learning (Jarmon et al., 2009, p. 5) which may be too difficult or too costly to replicate in the real world (White and Le Cornu, 2010). Virtual world environments can also enhance students' engagement in a subject through a sense of shared experiences (Jarmon et al., 2009, p. 5) such as groupwork in Alrayes and Sutcliffe (2011). Additionally, students can experience a sense of "belonging in" the virtual world and "belonging to" the social group (White and Le Cornu, 2010, p. 186). They are able to examine user developed content in virtual worlds (Jarmon, 2009, p.3). Examples include: the virtual business environments (Daniels Lee, 2009, p.11), law court environments (Jules et al., 2009), or to access, assess and deliver educational content (Campbell, 2009, pp. 14-15), or develop and practice profession-related skills (e.g. the case studies in Salmon et al., 2011, pp. 172-173) or mooting skills (Jules et al., 2009, pp. 143-144). It is argued that students experience a stronger understanding of what is possible in the virtual world through an enriched sense of presence (Jarmon, 2009) achieved through their own and other students' avatars, as well as any other people who may be present in the virtual world at the time of visit. Additionally, some students can also see the potential for applications in virtual worlds in their own professional practice after leaving university (e.g. Campbell, 2009; Daniels Lee, 2009).

Methodological background to the present study

Educators need to ensure that incorporating a virtual world learning environment into a course can be justified not just from the subject-discipline perspective, but that such an addition also provides meaningful opportunities for learning, based on the time and effort that might be involved for students in engaging in these experiences (Lim, 2009). Research discussed earlier on SL in higher education subjects involves approaches such as single and multiple case studies (e.g. Alrayes and Sutcliffe, 2011; Campbell, 2009; Salmon et al., 2010), as well as indicators that cyclical development and improvements for subsequent offerings would be made, based on student feedback and educator observations (e.g. Daniels Lee, 2009). Each of the studies,

however, provides a snapshot of a single iteration of using SL in the educational courses and thus do not demonstrate how one might develop interventions to improve the offerings to achieve stronger pedagogical outcomes. As a point of departure from such literature, this paper reports on the findings of a four semester action research study. The study evaluates the impact of the iterative interventions used with a view to improving pedagogical learning and teaching outcomes in a virtual world learning context.

Action Research

Action research has been used extensively in educational settings at all levels (Norton, 2009; McNiff, Lomax and Whitehead, 2003; Zuber-Skerritt, 1992). Its benefits relate to the fact that educators can use it as an appropriate and effective way to integrate educational research and teaching practice (McNiff et al., 2003; Zuber-Skerritt, 1992). In the context of this study, it can be defined as “research by higher education teachers themselves into their own teaching practice and into student learning” (Zuber-Skerritt, 1991, p. 88). The value of action research is in “its iterative, reflective and cyclic process of exploration” of a particular issue of concern to the educator/ researcher, whether this is to simply discover successful methods in teaching practice or as a wider issue in terms of equity and inclusion (Cousins, 2009, p. 150). Its acceptance for use across a range of areas in higher education is evident in the published studies available. For example, Ball (2009) used this method to evaluate annotations on student essays in a United Kingdom university, Nel and Wilkinson (2006) used it to examine collaborative learning in a blended learning environment, and Singh (2006) made use of it in a study exploring assessment in a South African university.

Research design

One reason for undertaking action research is that it systematically investigates the teacher’s own teaching and learning with the aim of modifying practice as well as contributing to theoretical knowledge (Norton, 2009). The action research study reported in this paper has five identified stages as outlined by Norton (2009). These stages are: 1) A problem or issue is identified by the researcher, based on what has occurred, or not occurred in their teaching practice; 2) the researcher thinks about ways to tackle it and develops a plan; 3) the plan is then put into action and specific

evidence is gathered; 4) the evidence is analysed and evaluated; and, 5) the findings are used to modify teaching practice to alleviate the problem or issue identified.

Action research is also an iterative process, where the evaluation of the interventions from the initial plan are then subjected to the research cycle again to determine whether they were successful and how they can be further improved. As a result, our research started in one semester and continued over a further three semesters with a view to improving the learning experience, guided by an experiential learning pedagogy. In essence, experiential learning provides students with the opportunity to experience a particular aspect of their learning, to be able to observe and reflect on that experience and to form abstract concepts based on their reflections and then apply such knowledge to test new concepts (Kolb and Fry, 1975). This is consistent with Scheckenberg et al.'s (2011, p755) discussion of Kolb's model of experiential learning when applied to Web 2.0 and competence-oriented design of learning. It was also important to achieve pedagogically appropriate practices for this technology-enhanced educational experience so that it was integrated appropriately for diverse learners (Kankaanranta, 2005).

The present study

The context of the Digital Promotions course

Research evidence presented above suggests a number of pedagogical benefits from integrating virtual world environments in some way into teaching and learning. It is the approach of using virtual worlds for delivering a portion of the subject curriculum (as exemplified in the research discussed above) that is of particular relevance for the study reported in this paper.

The context for the study was the development of a virtual world component within a Digital Promotions course taken by second and third year undergraduate students in a Bachelor of Business degree, majoring in marketing at an Australian metropolitan university. With the emerging business possibilities in virtual worlds, it is important for marketing students to have some understanding of this developing marketing environment. In a subject such as Digital Promotions, it is all very well to talk about how companies use SL for marketing and promotional activities, but without actually experiencing how the virtual world is used for marketing, a deeper understanding and

appreciation of this marketing platform is harder to achieve. The pedagogical issue was the difficulty of teaching students about a 3D virtual marketing environment using solely traditional face-to-face teaching method. Can students really understand and critically evaluate both the consumer experience and the firm perspective of 3D virtual worlds? Within marketing education students are regularly asked to evaluate these two perspectives. However, a face-to-face in class approach is limited in this case as students are at arms length from the actual digital consumer experiences. SL has given marketing academics the ability to develop activities so that student can have a 3D consumer digital experience, then reflect on the brand and marketing implications for the company. In combination with in class material discussing the marketing opportunities along with consumer psychology implications of 3D virtual worlds, this in-world field trip enabled students to have firsthand consumer experience as opposed to an arm's length discussion.

The virtual 'field trip' idea

Thus, a virtual field trip was developed to take students into the Coke Virtual Thirst Pavilion, which was, at the time, the Coca-Cola virtual world in SL. The Coke Pavilion was an exemplar of what brand or marketing experience is achievable in 3D environments. The selection of one site for the trip was done to assist with methodological issues. In particular, since the research uses an action research approach, using a single environment across time allows for better control in teaching and learning evaluations by the coordinator.

The lecturer made some assumptions about the Second Life virtual world 3D environment as a learning space, based on the literature. For example, it was assumed that 3D environments are conducive to immersive experiences, especially role playing situations (Slator *et al.*, 1999). As White and Le Cornu (2010, pp. 191-192) also identify that virtual worlds are experiential by nature and that educators should use experiential learning theory to evaluate these spaces in order to analyse teaching practice. In the Digital Promotions course, students played the role of a Coca-Cola consumer as well as manager-observers of Cokes' marketing activity, as this was the focus for student learning outcomes. In the SL environment participants can experience both secondary (technology mediated) learning as well as primary experiences of learning (through engagement and doing activities) considered to be a

“powerful dimension of using virtual worlds for education purposes” (White and Le Cornu, 2010, p. 192). These two forms of learning in SL permit students to play the dual roles of marketer through appreciating the mediated experience and the consumer through the primary or sensual experience of the Coke Virtual Thirst Pavillion. The game-like feel enhances the active role of the student in the learning process, whereby the level of interaction is heightened (Slator et al., 1999). The Coke Virtual Thirst Pavilion allowed students to experience Second Life’s game-like elements through unique emotive activities, demonstrating how firms create highly experiential marketing and promotional activities to engage consumers with the brand in ways that would be impossible in the real world.

Study method

University ethics processes and procedures were adhered to and ethics clearance given for the study. The recruitment processes and study procedures are discussed in the following areas.

Participants

Participants were second and third year undergraduate students enrolled in a marketing major in the Bachelor of Business, who were taking the Digital Promotions course at a metropolitan university in Queensland, Australia. All students in the course each semester were invited to complete the survey, regardless of whether they attended the SL field trip or not, resulting in a convenience sample totalling 136 for the four semesters. The sample is comprised of different students from each semester of the study. In the total sample, 97 participants went on the SL field trip and 49 did not. An e-mail request for participation was used with an online survey link embedded in the e-mail text. Thus, student linked to the survey and all data from participants was anonymous.

Procedure

The SL field trips were held over four semesters and organised without any major technical support of the faculty, primarily due to the lack of technical skill appropriate for this activity. Students could select to attend the field trip in a designated computer lab at the university – or to log in from home if they had the necessary bandwidth and computer power to do so.

As this field trip was an extension activity to the subject's curriculum, participation was voluntary, and in the first two semesters of this study, was not assessed. Dalgarno et al. (2011) note that in most offerings of virtual world activities in their surveys, were not compulsory or assessed, suggesting that educators may be unwilling to make it a core component of their course at the present time.

Student-technology questionnaire

In addition, after the field trip, students (whether participating in the field trip or not) were asked to complete a short survey regarding their general familiarity with new technologies and the internet. The items in the survey were measured on a 7 point Likert type scale. Questions evaluated the current student usage of Internet technologies as well as perceptions toward the field trip. For example, a seven point Likert scale was used to assess different types of Internet technology such as e-mail, website, virtual social networks, virtual worlds and search engines: 1 (no use) to 7 (extensive use). Whereas, items relating to the field trip evaluated; experience, perceived learning outcomes, attitudes and perceived student benefit: 1 (strongly agree), 4 neutral, 7 (strongly disagree).

Field trip procedure

The initial virtual field trip experience was organised as follows. A set time, date and SL location was given to students, together with a brief guide to using SL. Students were free to create their own avatars with no restrictions on appearance, thus they could create their own SL identity that need not reflect their real world persona. During the virtual field trip, through their Avatar, students interacted with the Coke brand at the Coke Virtual Thirst Pavilion through activities that were recommended by the lecturer that they undertake in order to experience the possibilities afforded by interacting with a brand in SL. These activities included dancing, music, and competitions. In addition students could pick up a free Coke T-shirt, get a free bubble Coke and experience the cherry cola river, where they were immersed in a 360 degree stream of cherry cola. They could attempt the Coke penguin puzzles for prizes, as well as engaging in other activities with the penguins, such as fishing, climbing and drinking Coke.

Method for Collection of evaluation data after each semester's field trip

Evaluation of each field trip involved the collection of multiple sources of data.

1. lecturer observations and reflections

The first source was lecturer observations and reflections on the activity and the unanticipated challenges both from a university perspective and technical issues. These were documented in field notes after the trip was completed.

2. Quantitative feedback from students

In addition, evidence was gathered from the students. Quantitative feedback was obtained from a survey consisting of 41 questions administered to all students in the subject following the field trip regardless of whether they participated or not. That is, one week after the field trip all students in the course were e-mailed with an invitation to participate in the study. Within the e-mail invitation was a URL link to an online questionnaire, thus, both participants and non participants could give feedback. Table 1 summarises the study participants and the number of students who completed the quantitative survey.

Insert Table 1 here:

3. Qualitative feedback from students

Qualitative student feedback was obtained from the formal, school-based, online course evaluation at the end of the semester. In this evaluation – students are encouraged to provide qualitative comments regarding what they liked about a course and what needs improvement, although it is not a compulsory requirement in the evaluation. These comments are made available to course lecturers after the examination period each semester.

Findings

The findings for the students' familiarity with technology and their quantitative responses after experiencing a field trip are summarised on tables 2 and 3 respectively. For brevity, the data for all four semesters is given on each table – however, the

findings are discussed semester-by-semester in the sections that follow, with reference to these tables.

[insert tables 2 and 3]

Semester One

Lecturer observations, and the quantitative and qualitative feedback gathered from the first offering of the SL field trip informed the problem statement and the initiation of the action research as shown in the evidence provided. Of the 95 students enrolled, 22 (23%) participated in the SL field trip, as shown in Table 1 above. It was evident that this was a small but engaged and interested group of students, who were very forgiving of the relative lack of structure and precision that characterised this initial offering of the field trip.

Semester 1: Student questionnaire responses

This group of students had a relatively low prior experience in using of SL (as seen in Table 2). However, the questionnaire findings indicate that, in general, there was a positive attitude to the field trip they had experienced. As can be seen on Table 3, of the 22 participating 18 students agreed that it was fun (81%), interesting (19/ 86%), fascinating (17/ 77%) and highly involving (17/ 77%). These findings suggest that the immersive aspects of SL were apparent to the participants. Further, responses in section 2 (Perceptions of learning outcomes) were indicative that the field trip contributed to student learning outcomes, as shown in the high level of agreement with the items such as 'important' (18 students: 81%) and 'useful' (18 students: 81%) and being a valuable learning experience (18 students: 81%). Section 4 in the survey measured perceptions of student outcomes benefits, positively determined as greater engagement with the subject as a result of the experiential aspects of the field trip. Participating students rated most of these items very highly, ranging from 16 out of the 22 students (72%) for inspiring them to learn to 20 students (90%) for engagement with the subject and a more enjoyable learning experience.

Additionally, both participating and non-participating students understood that the trip was offered to provide the class with the benefit of key capabilities in Internet marketing (19/86% and 30/ 88% respectively). On the other hand, the frequencies also

show that 12 participating students thought the activity not exciting (57%), and that it was not a fundamental (10 students:47%) or wanted activity in the subject (11/ 50%). These findings were somewhat surprising considering the participating students' other positive responses. Further, there was evidence that while both participating (17/ 77%) and non-participating (24/ 70%) students agreed that the field trip was relevant to their learning. However, the low participation rate overall in this first semester group may also be related to the fact that there were no assessed course elements attached to the activity.

Semester 1: Qualitative student responses from formal subject evaluation

Many of the positive responses to the survey were reflected in the qualitative comments in the formal subject evaluation. Those students who participated in the activity for the most part suggested that they enjoyed the experience, as the following qualitative evidence from the formal subject evaluation indicates:

“Second life online tour was brilliant! Information about now now now!”:

“Awesome idea – Love it”;

“Second life was an interesting experience and showed the potential of the internet for future marketing endeavours”;

“Intriguing.”

However, the negative feedback provided evidence that the organisation of the field trip needed attention and that there was concerns about the equity of participation while in SL. Moreover, there was evidence of students who wanted to participate but could not, as the following quotations suggest.

“Instructions unclear and difficult to navigate”;

“I got lost from the group when we moved from the meeting point”;

“SL tour needed to be better organised – I got lost and computer wasn't compatible”;

“I would have loved to be able to go into Second Life as a class, all together”;

“Computer compatibility issues for Second Life”.

Semester 1: Lecturer observation perspective

From a lecturer observation perspective, while there were positive elements to the field trip, the organisation and implementation of the fieldtrip needed improvement in a number of areas, including technical aspects. For the lecturer a key problem was the communication issue during the field trip where it was difficult to respond quickly and effectively to 20 students' instant messaging texts seeking help and further directions.

Semester 1: Conclusions and directions for following semesters

These sources of evidence form the problem statement guiding the action research plan. The plan was intended to develop interventions that would improve pedagogical issues relating to: a) the added value of incorporating this technological field trip into the subject; and b) its ability to encourage student participation, thereby meaningfully enhancing more students' learning experiences and engagement with the subject.

To this end, the learning objective was identified as enhancing students understanding of how businesses use this virtual environment for marketing, and promotional purposes through an immersive experience. The technology objective was to improve students' capabilities with using the SL software and participating more effectively in the field trip, considered important due to the cohort's low prior experience in a virtual world. The intervention strategies and evaluations of these strategies are summarised in Table 4 and discussed in more detail for each ensuing semester.

Insert Table 4 here:

Semester Two

Intervention strategies and implementation

- A more detailed guide was developed for students on how to use the technology, how to prepare and work with their avatar, and where to meet within the SL virtual world environment. This guide was placed on the subject's Blackboard site and students were advised to read it in preparation for the trip.
- In terms of more effective management of student communication issues during field trip in SL, a number of standardised responses were developed in a document

file relating to the main difficulties that students were likely to encounter during their initial experiences in the virtual world. These standardised responses would then be cut and pasted into the instant messaging communication system during the field trip to give students comprehensive information to help them to function.

This semester, of a cohort of 77 students, 27 participated in the field trip, representing 35% of the class. In terms of actual participants, this represented an increase of 5 students, which was considered a good result given that the cohort was smaller in this semester, the trip was not compulsory and there was no assessment attached to it.

Semester 2: Student questionnaire responses

As with the previous semester, there was a low prior use of Second Life compared to other new media technologies. As with Semester 1, participating students for the most part identified the experiential aspects of the field trip, agreeing that it was interesting (20 out of a total of 26 participating students, or 76%), relevant (19/ 73%), important (19/ 73%), and useful (20/ 76%), which were reflected in their positive attitude (21/ 80%). These views were further supported by their agreement that the field trip had benefited them in a number of important areas, particularly: their learning and development of Internet marketing capability (25/ 96%), their engagement in the subject (22/ 84%) and creating a more enjoyable learning environment (23/ 88%). However, in terms of their motivation to attend class (13/ 50%) and engage with the subject (19/73%), the scores were lower than those from the first offering. Of note also were the low scores for non-participating students compared to 69.6% the previous semester. Additionally, the non-participating group had low agreement on most of the items measuring their perceptions of student outcome benefits with the exception of its potential to develop their Internet marketing capability. In other words, the non-participating students may have made up their minds already about the perceived beneficial outcomes verses time investment (as noted in other studies, e.g. Daniels, Lee, 2009; Campbell, 2009) when they decided not to go on the field trip.

Semester 2: Qualitative student responses from formal subject evaluation

In the formal School-based course valuations students raised their concerns about technological support during the SL field trip, as the following quotes suggest.

“need a lab for effectively exploring SL”;

“Uni computer lab dedicated to second life with no cost to student for downloading”.

Semester 2: Lecturer observation perspective

Based on personal observations of the field trip the lecturer felt that there were still difficulties in co-ordinating the field trip effectively when students were entering SL from remote locations, such as home, despite his being able to cut and paste instructions in the instant messaging function.

Semester 2: Conclusions and directions for following semesters

In summary, the participation rates were increasing and the field trip was still providing good pedagogical outcomes for these students in terms of the experiential learning outcomes. However, the value adding aspects of the technology to more effectively engage students in the curriculum were dropping. It was also noted that the fun factor in the field trip had dropped from 81% (18 students) to 60% (16 students) in the second offering. This may be due to the increased amount of student instructions and formal, standardised instructions to prevent problems, which to some extent might be reducing the experiential aspect of the trip.

Semester Three

As a result of reflection on the findings from semester two, the following developments were effected:

Intervention strategies and implementation

- As incorporating new media technologies into teaching is one of the strategic directions for the Faculty, two computer labs on campus were loaded with the SL software and booked to support the fieldtrips for those who did not have the computer capability in their own home. This intervention was intended to manage issues for students who previously were in remote locations such as at home, or those students who did not have sufficiently advanced computing technology or broadband access. It also addressed the students’ comments about the need for technology support by the university.

- In addition to being able to cut and paste standard responses to students who entered the field trip from remote locations, the lecturer would also use the teaching computer projector system to visually show students what to do during the trip in order to help them manage their SL functioning and to prevent them from getting lost during the trip.
- For the next semester, explicit links would be made between the SL fieldtrip and assessment. This included a 7.5% of total mark for the assessment of 3D virtual environment for potential marketing opportunities. This intervention addresses the issue to do with non-participating students' limited perceptions of the relevance of the field trip to their learning outcomes and student benefits. However, participation in the field trip was still voluntary, so students were also provided with additional material, such as lecture content and discussion, video documentary and other materials such as journals, news commentary and trade publications to prevent any equity issues in the subject through non-participation in the field trip.

In semester three, 35 out of 66 students (53%) of the class participated, representing an increase of 8 students.

Semester 3: Student questionnaire responses

Again, this cohort had a low prior experience with SL. Although the lecturer felt the fieldtrip was organised more effectively in terms of using the computer labs, and better trip management in terms of faster text responses and being able to use the visual projector to facilitate a smoother experience for students when they were in SL, participating students did not necessarily agree that the field trip provided greater perceived learning outcomes. Perceptions of learning outcomes were, on average, fairly similar to those of semester two. Again, the benefits for Internet marketing capabilities were identified as positive - (13/ 86%) and many students felt it made for a more enjoyable learning experience (13/ 86%). However, their agreement that the trip engaged them in the subject and motivated them to come to class and participate in the subject were lower than the previous two semesters 20/ 90% : 17/ 77% : 18/

81% in first offering, 22/ 84%: 13/ 50%: 17/ 65% in second offering, and, 7/ 46%: 9/ 60%: 9/ 60% in third offering).

The use of computer labs enabled a larger number of students that wanted to take advantage of the experience to do so, meaning that equity of participation was also improving. Agreement of the relevance of the SL field trip for the participating students was improved (Semester 3: 12/ 80%, compared to 17/ 77% and 19/ 73%) from previous offerings. It is possible that this improvement may have been due to the 7.5% weighting of a mark toward the fieldtrip exercise.

Semester 3: Qualitative student responses from formal subject evaluation

Again, students found the SL environment technologically challenging as the following quotes suggest. “One and a half hours is not enough”; “more time needed to train on second life”.

Semester 3: Lecturer observation perspective

The lecturer observed that even though computer labs gave greater control of the learning environment, there were more students participating and many of them had no prior experience with SL. This meant that a greater number of students found the SL environment very difficult to navigate and sought assistance more often. As a result, the lecturer felt there was a need for an extra teacher for the class to help assist these students. Additionally, it was observed that students had a wide range of technological experience and familiarity, meaning that some students were very fast in finishing all activities where others found the activities very difficult.

Semester 3: Conclusions and directions for the final semester

Evaluation of semester 3 suggested the need for more preparation so that students could master how to walk, fly, teleport and communicate in SL prior to the field trip in order to more out of the actual trip to the Coke Virtual Thirst Pavilion.

Semester four

Intervention and implementation strategies

In addition to retaining the previous interventions used for semester two and three, the following interventions were included for semester four:

- The use of an extra facilitator to assist with the computer lab sessions to alleviate the pressure on the lecturer to manage the increasing number of students participating.
- To conduct the field trip over a two-week period instead of one week, i.e. week 1 for the registration and orientation and week 2 for the fieldtrip. This intervention was based on observations and informal student feedback.

Evaluation of the semester four field trip

Again, the use of computer labs enabled a larger proportion of students to participate with 48 out of 61 students (80%) going on the field trip. This was an increase of 13 students over the previous semester.

Semester 4: Student questionnaire responses

The week one orientation SL fieldtrip session went very well. Given that this cohort also had a low prior experience of SL, it was anticipated that the orientation have improved the group's experiences during the actual field trip.

However, while students still agreed that the trip was interesting (24/ 70%), the learning experience scores for useful and valuable were lower than in previous offerings (22/ 64% and 21/ 61%). Agreement for the items related to attitude towards the field trip was noticeably lower than in previous offerings. For this group of participants, their agreement that the SL field trip provided student benefit outcomes in terms of Internet marketing capabilities (25/ 73%) were the lower than the other three offerings. However, the motivation items, motivation to participate (23/ 67%) and motivation to come to class (22/ 64%) were somewhat higher than the previous semester.

Further, in student lecture discussions, student effort over the two weeks dedicated to the SL field trip were seen as disproportionate to the weighting of the assessment, which was 7.5%. They indicated that the time and effort spend in learning how to use the technology and spending two weeks on the project, first through an orientation week and then the interaction with the company brand, was disproportionate. This

was because students knew they could complete the assessment using the additional resources provided in the subject for those students who did not participate. However, agreement with the relevance of the field trip was still high for the participating students (27/ 79%), supporting some of the identified student outcome benefits.

However, with so many students now participating, technical issues negatively impacted on student experience. This can be seen in the low scores in section 3 of Table 3, relating to students' attitude towards the field trip, particularly for items such as valuable (20/ 58%) and useful (18/ 52%) compared to 9/ 69% and 8/ 61% in the previous response. Higher participation rates also meant other technological challenges with using SL for an experiential field trip as documented below.

1. Only 20-25 avatars can be in one space within SL as the computers will start to freeze (potentially creating a negative experience for the students). The increased participation meant that around 50 avatars were involved in the trip to the Coke Virtual Thirst Pavilion.
2. The larger number of students participating resulted in a greater disparity in the Internet technology orientation of students. With 48 students the disparity between technologically skilled and unskilled students had widened compared to the previous semester. Further, from observations in the computer labs, some students found it very frustrating waiting for those that were slow and had low technical skill to catch up. Some students found even the simplest of tasks in SL difficult, due to their lack of experience in such environments. Therefore, some students finished their activities efficiently with no problems while others struggled to move in SL. Problems such as students losing their clothing or hair and being unable to reattach them, caused distractions from the learning objectives of the field trip. These factors also limited the ability to introduce more sophisticated elements of learning in SL.

Semester 4: Conclusions and further directions

In this way, the learning cycle continues and the lecturer needs to reflect on these new challenges for the SL field trip that now has a much higher participation rate in a potentially unstable technological environment. Thus, the field trip has achieved the goal it set out to do, to gain higher participation in an experiential learning activity

that is relevant to the subject being taught. The goal now is to make sure that the using the technology will add the necessary value to enhance the SL field trip's potential to create a meaningful and highly relevant learning experience for the students.

Implications for practice

The interventions and evaluations in the action research study discussed above highlight some of the pedagogical issues involved with integrating a Web 2.0 technology into existing teaching and learning practices. The questionnaire data collected over the four semesters indicates student perceptions of the value and beneficial outcomes of such an experience in the curriculum being taught. At the same time, the lecturer observations and qualitative feedback helped to develop innovative ways of integrating new technologies into learning and teaching practices to add value for student and curriculum outcomes.

The outcomes of this action research study highlight the tensions between the two pedagogical considerations. On the one hand, the SL field trip created an experiential learning opportunity that simply cannot be replicated in a traditional lecture delivery was created. On the other hand, it was true that the challenges of the technology limited the value of the experience for many students, both at a technical level due to software problems, but also from a student capability level. This was particularly evident in the divide between students who quickly mastered how to function in SL, compared to those who did not. Other researchers (e.g. Alrayes and Sutcliffe, 2011; Daniels Lee, 2009) have noted that not every student puts in the time to master these skills, which does tend to limit their perceptions of the relevance or value of the SL activity in the course. In our study, this discrepancy in student effort impacted on the experience for both groups when in the SL environment. However, as Savin-Baden et al. (2010) suggest, educators have a dilemma within these complex virtual worlds between student expectations of direction and guidance and freedom to develop knowledge independently.

The findings also suggest that it should not be assumed that all students use every new technology in the same way (Hargittai, 2008). The table of technology capabilities (see Table 2) in our study shows that not all students use every new media technology

available, particularly a virtual world environment such as SL. Additionally, the assumptions that the Millennial Generation is always highly receptive to technology-based pedagogical experiences (Ferrell and Ferrel 2002) and thrive in online environments (Childress and Braswell 2006), may not be particularly accurate. Our findings suggest that not all students are inclined to take part in technologically delivered education experiences: some students did not see the SL field trip as relevant to their learning, as they did not participate. In the initial offerings of the field trip this outcome might have arisen from the lack of assessment. When there was assessment related to knowledge on marketing in virtual worlds in semester three and four, this possibly would account for the increased participation in those two semesters. Therefore, as no assessment was linked to the field trip students found it difficult to attach relevance to the learning outcomes. As the coordinator became more experience and confident there was a greater trust for the technology and a greater acceptance the technology would be stable enough to integrate assessment into the curriculum.

Moreover, the premise that the game-like feel in virtual worlds enhances the active role of the student in the learning process and heightens their interaction (Slator et al, 1999) could also be debated. Student responses in our study suggest that not all students are going to find activities in virtual worlds 'fun' and 'exciting'. It may be that those students who are technologically orientated or who play online games, such as World of Warcraft may see the field trip as potentially boring. Furthermore Alrayes and Sutcliffe (2011, p. 9) found that using SL did not necessarily motivate students to learn, nor was it perceived as an effective environment for learning. It can be questioned as to whether virtual worlds environments will actually capture students' attention and help them learn (Cheal, 2007). However, as shown in this study a focused and relevant assessment that is understood by students and perceived to be lead to discipline based capabilities will have a more positive learning related outcome for the course and students.

Educators should not make assumptions that just because the students are part of the Millennial Generation (Wood et al., 2008) that they will necessarily be familiar with an extensive range of modern technologies, or find them easy to use (Savin-Bader et al., 2010). Thus educators should not simply assume students will enjoy being

immersed in a virtual world. Moreover, if there is no assessment attached, as was the case in our study for the first two semesters, then a voluntary field trip to SL, regardless of how interesting and experiential it might be, could be considered less relevant than other activities that are assessed. It is also important to understand the pedagogical issues involved with using technologies in education to ensure that they add value to the learning experience.

In this study, the findings suggest that it is a challenging task for educators to integrate a virtual world technology with an experiential learning pedagogy, despite the technology's identified potential to do so. Importantly, dealing with technological issues in managing the students' experiences in the virtual world should not overshadow the teaching and learning objectives identified for the activity.

Limitations and future research

This study clearly has its limitations: it represents one lecturer's attempt to use SL in a marketing subject to enhance the learning experience for students on a digital promotions course. As participation was voluntary, the data collected did not reflect the whole of the class' experience. Additionally, the lecturer felt that dealing with the technological issues possibly overshadowed a focus on improving the experiential learning component. The findings, while offering insights into the pedagogical issues involved, cannot be generalised beyond this study.

However, the study does provide directions for future research. Educators, who are integrating new media technologies into their course, can consider using a pedagogical action research approach to monitor progress towards the integration of innovative pedagogy into the curriculum. Educators can focus more on researching their learning and teaching practices with a view to sharing their experiences, particular in areas where a 3D virtual world, such as SL, is being used for a particular component of the course, rather than a full immersion for teaching and learning, for example in distance education learning.

In conclusion, this exploratory study highlights the importance for educators to consider the pedagogical issues involved in using technology in education environments to create experiential learning opportunities for their students. Moreover,

they need to ensure that the pedagogical value of the experience is not overshadowed by the technological issues. As noted by Savin-Bader et al. (2010, p.131), educators need to be mindful of the extent to which the component modalities in a virtual world's environment might become the focus of the learning rather than the educational objectives. When this occurs, as so easily can be the case when requiring students to participate in an activity in SL, it is possible to lose sight of the pedagogical value of integrating such technology into teaching practice (Kankaanranta, 2005) to enhance student outcomes.

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Table 1: Participation rates in the SL field trip and evaluations over four semesters

Time period	Semester 1	Semester 2	Semester 3	Semester 4	Total
Total number of students on Digital Promotions course	95	77	66	61	299
Number of students in course who participated in an SL field trip	22	27	35	48	130
% of students in course who participated in SL field trip	23%	35%	53%	78%	N/A
Total number of students on course who completed the post trip quantitative survey	56	34	15	34	136
Total number of students on course who participated in SL field trip who completed survey*	22	26	15	34	97

* In semesters 3 and 4, students not participating in field trip did not complete survey as numbers of non participation students started to become low.

Table 2: Student use of new media technologies and the Internet

Digital Promotions students	Semester 1		Semester 2		Semester 3	Semester 4
Extent of Internet/new media technologies usage						
	NP* (n=34)	P* (n=22)	NP (n=13)	P (n=26)	NP** (0): P (15)	NP (0): P (34)
E-mail	6.73	6.95	6.00	6.27	6.40	6.26
Company Websites	4.80	5.14	4.44	5.29	4.67	5.12
Facebook.com	4.47	4.68	5.22	4.54	4.87	5.55
Myspace.com	3.47	2.55	3.22	2.50	2.27	2.12
Secondlife.com	1.17	1.95	1.22	1.73	1.47	1.76
Youtube.com	4.43	4.14	3.56	4.38	3.60	4.74
Search engines	6.87	6.91	6.33	6.77	6.27	6.74
Sites for purchasing product	3.57	4.00	2.89	3.50	3.50	4.79
Pay my bills	4.13	4.95	4.44	4.15	3.67	5.47

Note: Mean scores highlight the current student usage of Internet technologies, for example, a seven point Likert scale was used to assess different types of Internet technology such as e-mail, website, virtual social networks, virtual worlds and search engines: 1 (no use) to 7 (extensive use)

*NP= students not participating in the virtual field trip (as participation rates for the activity were becoming higher, for example, Semester 3 & 4 it became difficult to get non-participants to respond)

*P= students participating in the virtual field trip

Table 3: Frequency of responses to items on the post SL field trip questionnaire over four semesters																		
Construct	Semester 1 P (22)			Semester 1 NP (34)			Semester 2 P (26)			Semester 2 NP (13)			Semester 3 P (15)			Semester 4 P (34)		
	A	N	D	A	N	D	A	N	D	A	N	D	A	N	D	A	N	D
A= Agree N= Neutral D = Disagree																		
Section 1: Experience with fieldtrip																		
Fun	18	2	2	11	21	2	16	8	2	4	4	4	7	5	3	17	11	6
Interesting	19	2	1	25	6	3	20	5	1	4	3	3	12	1	2	24	4	6
Appealing	13	6	3	20	9	5	10	8	7	4	3	6	9	2	4	15	11	8
Exciting	12	7	3	11	9	14	9	10	6	4	3	6	7	4	4	10	12	12
Fascinating	17	4	1	17	15	2	13	10	3	6	1	6	7	4	4	14	11	9
Highly involving	17	4	1	15	11	8	14	6	6	7	1	5	7	6	2	19	8	7
Activity Wanted	11	5	4	15	9	10	8	8	10	1	4	8	9	2	4	11	16	7
Section 2: Perceptions of learning outcomes																		
Important	18	1	3	18	13	3	19	5	2	5	4	4	11	1	3	23	6	5
Of concern	12	4	6	15	13	6	18	6	2	6	4	3	9	3	3	20	8	6
Relevant	17	4	1	24	7	3	19	6	1	7	3	3	12	1	2	27	5	2
Means a lot to me	10	7	5	12	16	6	11	9	6	3	3	7	7	4	4	12	12	10
Useful	18	4	0	22	8	4	20	4	2	9	1	3	11	2	2	22	11	1
Valuable	18	3	1	19	12	3	19	7	0	8	1	4	12	1	2	21	12	1
Fundamental	10	6	6	13	12	9	15	8	3	4	3	6	7	5	3	15	14	5
Section 3: Attitude toward fieldtrip																		
Positive	18	3	1	23	10	1	21	4	1	6	4	3	12	2	1	23	9	2
Pleasant	18	3	1	20	13	1	16	9	1	4	9	0	12	2	1	18	9	7
Agreeable	15	7	0	20	11	3	16	8	2	6	7	0	12	2	1	17	15	2
Valuable	17	3	2	23	8	3	16	8	2	9	3	1	13	0	2	20	9	5
Good	17	4	1	23	7	4	16	9	1	7	3	3	13	1	1	20	12	2
Wise	13	6	3	23	7	4	16	10	0	11	1	1	12	2	1	19	12	3
Favourable	14	6	2	17	13	4	12	12	2	4	8	1	13	1	1	16	11	7
Likes a lot	13	8	1	14	11	9	10	12	4	4	4	4	11	3	1	13	12	9
Useful	16	3	3	20	9	5	18	7	1	8	4	1	13	0	2	18	10	6
Section 4: Perception of student outcome benefits																		
Internet marketing capabilities	19	3	0	30	1	3	25	1	0	10	3	0	13	0	2	25	1	8
Engagement in subject	20	2	0	17	12	5	22	3	1	7	3	3	10	3	2	22	7	5
Empowering me in the subject	16	4	2	16	13	5	19	3	4	4	6	3	9	4	2	16	11	7
Motivation to participate	18	2	2	18	5	11	17	7	2	4	1	8	9	3	3	23	6	5
Giving me motivation to come to class	17	1	4	14	9	11	13	8	5	6	1	7	7	3	5	22	5	7
Making me proud to be a part of subject	14	5	3	14	8	12	13	8	5	5	4	4	9	2	4	22	7	5
Beyond normally do in other subjects	14	5	3	17	8	8	19	4	3	4	0	9	8	4	3	24	4	8
Inspiring me to learn	16	3	3	16	7	11	19	7	0	3	3	7	10	2	3	24	3	7
More enjoyable learning experience	20	1	1	21	8	5	23	3	0	6	3	4	13	0	2	25	1	8

Note: P=Participants, NP= non participants: Non participants were exposed to lecture content and discussion, video documentary and other materials such as journals, news commentary and trade publications. Running notes: Even those who do not participate understand the importance for student learning outcomes in marketing.

Table 4: Summary of field trip interventions across the four semesters

Semester 1		Semester 2		Semester 3		Semester 4
3D second life fieldtrip: <i>Coke Virtual Thirst Pavilion</i> Voluntary participation. Initially students participated in the fieldtrip from their own computers predominantly in their own homes. A set time, date and SL location was given to students with a minor guide. No assessment was linked to the fieldtrip.	Intervention .	3D second life fieldtrip: <i>Coke Virtual Thirst Pavilion</i> Voluntary participation. Students participated in the fieldtrip from their own computers in their own homes. Detailed guide supplied as to how to get started. With extra video content about second life and branding activity.	Intervention .	3D second life fieldtrip: <i>Coke Virtual Thirst Pavilion</i> Voluntary participation. Computer labs introduced, on campus supported the fieldtrips for those who do not have computers or good enough computers at home. Introduction of an assessment weighted at 7.5% of the total subject mark.	Intervention	3D second life fieldtrip: <i>Coke Virtual Thirst Pavilion</i> . Voluntary participation. Computer labs with the inclusion of an extra teacher's aid supported the fieldtrips. Two fieldtrips. Field trip 1 for orientation. Field trip 2 for the <i>Coke Virtual Thirst Pavilion</i> experience.