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Immersive learning: The use of a virtual simulated newsroom on Second Life

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Abstract. The study main purpose is to identify in what extent a virtual simulated newsroom in Second Life could influence the practical knowhow of the journalism students. All the students involved took pre and post surveys and underwent direct observation. The results analysed showed that in spite of many technological handicaps students had a better performance concerning best newsroom practices, the results also indicated that online students learned just as much as in a face to face situation and also that students enjoyed the teaching and learning experience better than the traditional way. The investigation took under consideration some of the latest studies concerning e-learning and b-learning strategies. The teaching/learning experience selected for this case study provided a good opportunity to evaluate some different online teaching/learning methods. As the main study focus was about practical behaviours this popular virtual 3-D platform showed to be a very handy tool to develop some of the Journalism course curricular.

Keywords: Journalism, Second life, teaching, learning, technology

Introduction

In the information age, marked mostly by technological advances in communications, there's an urgent need to create courses with high-quality interactive interfaces with emphasis on student interactions with content, tutors and peers. However, technological resources are not enough to ensure those interactions in a successful way. There's also a necessity to break paradigms and change traditional teaching and learning environments. It is time to learn how to be aware of the future as learning now comes from multiple sources and acquired knowledge is never enough.

The simplicity offered by modern technological development is changing online interaction possibilities by making available to teachers and students safe interfaces, interactive and efficient communication. Online environments put together various interfaces that allow greater interaction strategies. These tools are classified into synchronous and asynchronous. Synchronous interfaces are communication spaces that require the participation of students and teachers in scheduled events with specific times, such as chats, video conferences or conference calls. According to literature these tools have benefits such as: motivation, interaction and feedback in real-time collaborative environment.

As for asynchronous interfaces they do not depend on time or place meetings. Examples of these platforms can be pointed out discussion forums, email, blogs, wikis, etc.. Some asynchronous tools benefits are time management flexibility (allowing anytime and anywhere access) as well as time to reflect and contextualize the information and discuss ideas. These interfaces have been shown to be extremely important for the teacher who, from that information, can better follow student learning process. Based on an innovative suggestion for collaborative learning, teachers and students can help each other in adapting to this new methodology. The intervention, the exchange of information, the collective knowledge building between students and teachers is of vital importance.

Learning through this methodology moves from an individual perspective to group learning. It puts aside the overrated assessment of independent work and rather focuses on collaboration. As so, this interface strategy for technology education is focused on solving planned activities that may require participation, cooperation, interaction and collaboration. These teaching strategies must address the student predisposition to learn and expand experience skills.

It is also important to understand that in order to develop new teaching approaches and methodologies teachers need to work on their own continuous training as well as some basic pedagogical skills. According to Market (2009) it is essential to always do a good educational process planning; to find new ways to introduce topics for discussion; to provide some minimum necessary resources for students to organize the construction of their own knowledge; to successfully deal with previously established schedule to meet the students; to provide a continuous learning atmosphere; to maintain constant interaction with participants throughout the course; and to gain insight on the technical and educational resources it uses.

The changes performed by digital technologies in education have brought a great deal of impact on teachers and students. Both teachers and students need to be prepared to act in this new educational format. As so in spite of using new interaction, cooperation and collaboration strategies, participation and intervention success for a course of this scope will depend on the postures adopted by those involved, and especially their willingness to take full advantage of the course.

The most appropriate and traditional learning and knowledge building environment is, of course, the school. However, historically, school has been proven to be a traditional and conservative stage so that new technologies arrival created somewhat resistance to the regular use of these digital media. Adopting new teaching and learning techniques is a challenge that inevitably will cause a change in the lives of both students and teachers. Naturally the experience says that any change requires an adjustment phase but it is always necessary in the construction of new knowledge.

The new forms of teaching and learning are opening a new paradigm in education. Considering these changes, this study main purpose is to identify in what extent a virtual simulated newsroom in Second Life could influence the practical knowhow of the journalism students.

As students are increasingly asking for more flexible educational experiences (being able to take classes on a computer from home or work) researchers have been asked to investigate whether teaching an online class is a benefit or an obstacle to the educational experience for students. The course selected for this study provided a great opportunity to explore the value of online teaching methods. This new teaching and learning way take full advantage of the fact that virtual worlds present a combination of a video game interface with social connections and this mean there was a great improvement of the students' practical skills as they had the chance to face real problems as if they were working on real life.

The investigation took under consideration some of the latest studies concerning e-learning and b-learning strategies and mostly learning strategies through Second Life. As previously said the teaching/learning experience selected for this case study provided a good opportunity to evaluate some different online teaching/learning methods. As the main study focus was about practical behaviours, this popular virtual 3-D platform showed to be a very handy tool to develop and at some extent evaluate a few of the Journalism course procedures. Using a new environment the study tried to evaluate the use of a 3-D platform – like Second Life– for teaching and learning on higher education as well as evaluate the use of a 3-D virtual simulation on a journalism course.

A group of 3rd year undergraduate students participated on online classes and traditional classes in a b-learning environment. All the students involved took pre and post surveys and underwent direct observation. The results showed that in spite of many technological handicaps students had a better performance concerning best newsroom practices, the results also indicated that online students learned just as much as in a face to face situation and also that students enjoyed the teaching and learning experience better than the traditional way.

Literature overview

Second Life- 3-D virtual world

According to the official site, Second Life (a real life simulator in 3-D) is a virtual world entirely built and inhabited by its own residents. It was opened in 2003 by Linden Lab which was founded in 1999 by Philip Rosedale. Second Life was produced with the purpose of creating a new form of shared experience in which individuals inhabit a 3-D environment and build a world around them. Its interface simulates a virtual world and was originally created to be a game. However, as a game, has atypical characteristics as there are no predefined objectives, there are no opponents nor missions. In this interface, you create a virtual character called an avatar and interact with other surfers' electronic characters. This digital alter ego can walk, talk, date, work and even make money. Residents can buy, sell and trade with other residents. This virtual world has also its own currency called Linden Dollar (L\$) which can be converted into U.S. dollars, respecting its daily currency (Au, 2008).

In Second Life the only limit is the imagination of everyone. Thus, the strength of the simulator is to enable individual or collective activities development, which only depends on the creativity and insight essence of each one. To Moita (2008), Second Life is a virtual 3-D environment entirely built and inhabited by avatars. It allows each user to develop

activities which they have affinities with and success will only depend on the creativity and initiative of each one. Since its opening in 2003, it has massively grown and today there are about 20 million registered user accounts (May 2011 updated figure) interacting socially and living in the virtual world. However, these numbers are not reliable figures for actual consistent usage and Linden Lab has just recently released 2011 first quarter Economy Users and Usage Metrics showing the numbers of the average monthly repeated logins which stands for up to 794 thousands.

Players of both genders, different ages and from around the globe use the grid to work, for educational purposes, looking for fun and the ability to easily relate with others. It is a parallel world, where young adults can live freely and are given a second life, assuming the appearance they want, delivering and carrying out their plans so far impossible to be achieved in the real world. Currently many academic institutions from various parts of the world are present in this immersive 3-D environment. As so institutions and organizations like NASA eEducation, University of Porto, Oxford University Computing Services, Columbia College Chicago, Harvard University, Tasmanian Polytechnic, The Hong Kong Polytechnic University, among many others, are a few examples of academic institutions that have already virtual classroom facilities in SL.

To Mattar Neto (2008), Second Life can be used as a teaching and learning environment and it allows students, tutors, contents and objects to create spaces for entertaining and interactive learning using simulations. Second Life allows users to perform a diversity of roles and participate in simulations, developing real life skills in a virtual space. In some cases, Second Life allows different situations exploration that students could not complete safely and easily in the real world, like watching tragedies, simulations of high-risk surgeries, simulated trips to contexts of difficult access, etc..

The above mentioned aspects are somehow an assurance that the exploration and use of virtual worlds like Second Life in a higher education classroom is a new educational opportunity that will enable both teaching and learning, will surely allow discussing the benefits of simulation through technology and will implement a collaborative and interactive learning in the classroom.

Second Life as a learning tool

All these technologies, which include so many different utilities such as social networking, blogs, podcasts or virtual worlds, are being taken under consideration for their potential utility in building more interactive and participatory learning environments from which all students may benefit. Many studies showed that these new learning environments have the potential to improve the understanding of different perspectives on a given subject through discussion and exploration (Bennett, 2005).

Having this under consideration 3-D virtual worlds like Second Life are now being used in a regular basis by teachers to provide simulation of real life environments and allow students to discover more creative and more realistic ways to improve their skills.

Second Life is free to access and allows its virtual residents (or avatars) to build their own creations, allowing for an imaginative and personal virtual world. To use the words of Dudeney (2007), online-education consultant, "Second Life brings immersive, immediate and - more importantly - supportive, social and truly constructivist - potential to distance learning". We have also to agree with Prensky (2001) when he refers to this younger generation as "Digital Natives". As they have grown up within a digital world they see digital technology as a natural place to learn and play.

However, it has to be considered that Second Life has not primarily been developed as a learning tool. Nevertheless it can be adapted and used to support learning environments. Second Life offers many features that can be used in learning contexts. Hayes (2009a) has released a study showing how most Second Life users exploit the immersive environment for teaching and/or learning activities. According to this author (Hayes, 2009a) Second Life is a highly resourceful tool for the learning process. Education becomes evenly distributed as everyone can contribute and learn in the same way; distant immersive learning is far more compelling, cool and fun. Second Life can be explored as an online match to physical classroom or even to set a course at a distance. Meetings, lectures and conferences as well as scenarios facilitating modelling, simulation and emulation can take place in the grid.

In any case the evaluation of the real benefits of a Web-based immersive instruction is still inconclusive. Some authors like Maki (2000) found that in an online version of the course "Introduction to psychology" students scored significantly higher grades than students using a traditional teaching methodology. Also Twigg (2003) observed that students with different scientific backgrounds and pursuing their studies based on a digital platform performed better in national exams. Following this point of view a 2005 study by Conolly stated that "online students performed consistently better than the face-to-face students."

Many other studies revealing the benefits of web-based education could be mentioned nevertheless there are as many others investigations that showed there is hardly any advantage in this online based learning. Instead for these investigations teaching based on the traditional format can be much more productive and effective. Rodrigue (2002) for example, in a study conducted in 2002, concludes that students in a situation of face-to-face felt much more encouraged and achieved better performances.

A third strain argues that either the traditional format or the format based on a model online showed no significant differences in learning outcomes by students. Validating this point of view we should refer to Shelley's work from 2006 which presents "no significant differences between the two formats with regard to student satisfaction and student learning" after comparing the two models of teaching in a course of Business Law.

As for this study after the initial shock of being confronted by a new educational strategy, students responded well and quickly incorporated this new learning format, since most were already well acquainted with the technologies of communication in real time. The big difference in the whole process was the fact that students had then the possibility to make their time management schedule all the tasks requested even comfortably from home. Another online learning advantage is that it can overcome much faster any communication barrier resulting from personality traits such as shyness.

Second Life as a practical teaching strategy

The methodology used in technology education is focused on activities that require participation, cooperation and initiative to solve problems. As such the curriculum must be open, flexible and give secure access to updated information. It should consider experience as a source of learning and criteria for judging the relevance of what is learning to students' professional and everyday life. The curriculum should also promote cooperative learning, encourage creativity and promote knowledge sharing.

Teachers in order to adapt themselves to a flexible curriculum need to invest in their own training by developing some basic skills to easily move through technology education. According to the literature some of the basic procedures go on planning the educational process to:

- (1) introduce topics for discussion;
- (2) forecast information and the minimum resources necessary so that students can guide their own knowledge construction;
- (3) organize classes in a virtual learning environment;
- (4) deal with strict compliance with the established timetable to meet the students;
- (5) encourage the reduction of anonymity in the class;
- (6) establish an atmosphere of continuous learning;
- (7) maintain constant interaction with participants throughout the course;
- (8) develop a communication method that goes beyond the purely academic.

The teacher should also be familiar with the pedagogical resources of online education such as online authoring interfaces, interaction, mediation and educational online collaborative knowledge production. Teaching should therefore be focused on the quest for meaningful information, research and development projects in a collaborative learning environment, which involves knowledge, skills or attitude gaining. This should result from interaction within the group in which each student has knowledge and individual experience to offer and share with other members. Teaching and group management should consider that when working together, one member helps another to learn. To build a team, each member should have a role to fulfil in the group mission. Also, roles exchanged within the group adds value to the team work because each student can carry out the role with which they feel more familiar in any given situation.

Another key issue in online teaching is interactivity. According to Thomas (2001) "It is believed by many educationalists that interactive courseware which allows 'learning by doing' arouses interest and generates motivation providing a more engaging experience for the learner." Thomas (2001) also considers "Simulations and modelling tools are the best examples of complex, meaningful interactivity With such applications, learners can construct and test hypotheses and receive feedback as a result of their actions. There are great benefits to the learner if a static image such as a diagram in a text book is replaced with a simulation". And so collaborative participation from both tutor and student generates the message as a co-creation openly connected. The interactive communication process involves multiple network connections and free swapping of associations and meanings.

The study

Methodology

In similar studies the main variable that could most influence the results relates to the sampling; for this investigation we have to add the technological skills of each individual as well as Internet access off campus for each student involved. Having this pointed out as the first major study concern we have to access the following research questions:

RQ1: Is there a significant enhancement of journalism students' practical skills using a virtual simulation of a real newsroom?

RQ2: In what extent these virtual environments provide better basic journalism proficiency like news gathering, writing and reporting skills?

RQ3: What are the students' expectations prior and after using a new online teaching and learning methodology?

The main focus of the procedure was to virtually create a newsroom where students and their teacher could gather together and decide the agenda. The group met periodically foreseeing the problems and discussed collaboratively ways to solve those issues so all together prepared news gathering strategies in a collectively manner. Those meetings provided that the teacher could closely accompanying the students' work progress, since getting in touch with the sources, getting interviews, news gathering, organizing information, and reporting.

In-world meetings aimed as well to support students and in real classes the group usually discussed problems they had faced and new strategies for success stories. As a motivation goal all the students were told that they had to publish their stories on a real e-zine. The teacher was seen as an editor-in-chief and communication in world was basically made by voice. In short:

- Online classes were mostly concerned with reporting teams for the real e-zine.
- In world meetings were also focused on the best approach choice for the articles.
- All the news gathering, source interviews and reports were prepared collaboratively.
- Course key words: skills, work, preparation, support, feedback.

Before online sessions started all students got used to the Second Life platform as - except for one - all of them had no experience with this virtual 3-D platform.

Online teaching methods were developed over four *in-world* 60 minute sessions and these sessions had each been themed to focus on specific aspects of the journalism curriculum content. Prior to each online session there was 30 minutes real life class mainly for technological preparation and to discuss solutions for the issues students had been facing. Newsroom meetings took 60 minutes but students had to return back in-world whenever they needed in order to get the interviews and the news gathering done as they were depending on sources' agendas.

After each four in-world 60 minute sessions there was a 90 minute session of real life class. These real life sessions were used to support the news gathering and to improve writing and reporting skills. So all the writing work was made during these face-to-face sessions and after being reviewed by the editor/teacher the articles were published on a real life e-zine. For this investigation there was a class once a week for 180 minutes. The same instructor taught all the sessions during October 2009.

Survey

Pre/post test survey design was used to get students' feedback for expectations and attitudes toward learning experiences in traditional face-to-face and online journalism courses. Respondents included 53 undergraduates taking the journalism course via face-to-face and online instruction. The survey was used as a guide and it was taken by the students prior and after the online teaching period. The test conducted answers on four sections:

- Demographics: questions querying students about gender and age.
- Computer literacy: to assess technology skills and confidence using those skills. At the same time students were invited to rate their internet access off campus.
- Attitudes: students had to rate their expectations and feelings towards the course.
- Perceived knowledge: students were asked to rate the course content as well as teaching procedures.

Results Discussion

Under direct observation results suggested that students' experience in a journalism online course showed favourably when combined with traditional face-to-face instruction. Results also showed that 3-D multi-user environments can provide a highly immersive and very rich socially interactive way of enhancing students' skills. Results also showed a great enhancement concerning foreseeing problems and communications and interaction showed a great improvement.

Students reported significantly better than they did at the beginning. However the course format appeared to have no impact on perceived knowledge gained. This means that the averages were virtually identical for these students and for previous year's students where only a face-to-face class was taken. Nevertheless students showed a lot more interest in the subjects matter. Also by encouraging student group work the results showed that in combination online and face-to-face instruction can be a very useful way of improving the teaching and learning experience.

Students' expectations prior to online sessions: the survey results showed highly motivated and mainly curious students in spite of their poor Second Life literacy (Figure 1).

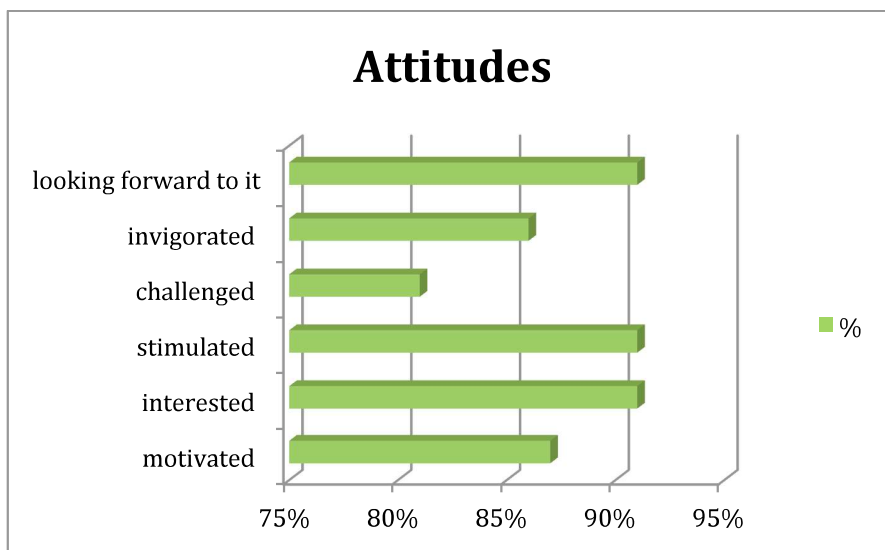


Figure 1. Students' expectations prior to online sessions

Students' behaviours after online sessions: the survey results showed students felt inspired and find the virtual newsroom useful and very important for better journalism practices (Figure 2).

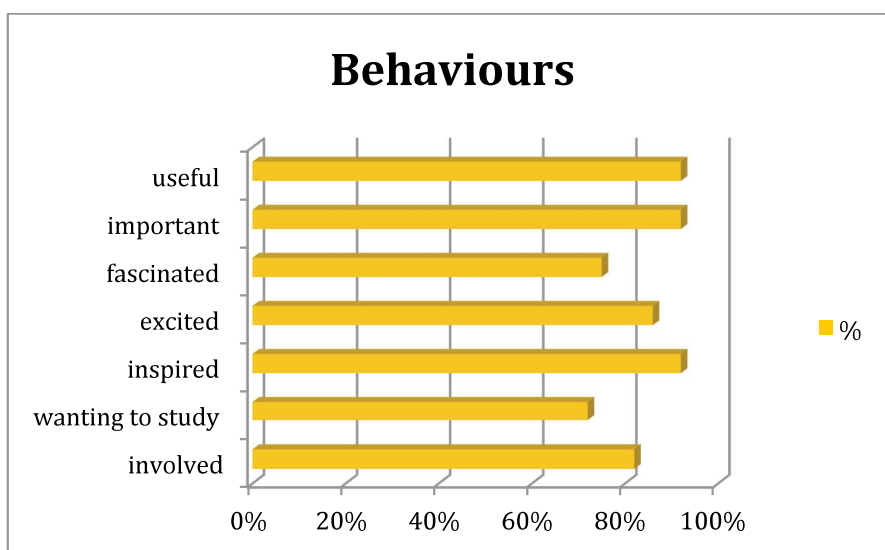


Figure 2. Students' behaviours after online sessions

Student strategies for the use of Second Life, such as thinking about creative solutions to problems and planning the use of time among others point to a better integration of curricular matters and seemed to be successful tasks. Also the surveyed group of students seemed to be informed about the advantages and disadvantages of specific skills that these technologies can provide in their learning outcomes. This has already been pointed out on previous studies from Munguba, Matos and Silva (2003) which confirm that electronic media can help structuring strategies improving awareness, attention and motivation.

The strategy performed in this virtual environment was developed in order to meet the expectations of young people in the classroom and in their academic preparation. And so students assessed that discussing the strategies according to the new methodology and study time which included topics such as optimization of the time, healthy work and educational skills in identifying and solving problems, promoting analysis and synthesis, proposed a different study, capable of promoting a better reflection and the successful execution of tasks. These results pointed out the need for schools to reflect on their teaching practices and study strategies improvement. Taking advantage of the use of virtual environments, such as Second Life would provide students with *metacognition* skills, helping them to self-regulate their learning. These are some of the challenges faced by schools in the future moving towards the implementation of new technologies to overcome and reconcile tradition with participation curriculum contexts that will allow knowledge to make sense.

Conclusions

Second Life has been shown to be a great platform that can be used to make teaching and learning experiences more creative and participatory. Towards this objective, this research proposed a way to use this revolutionary tool in order to put into practice individual and collective intelligence increasing opportunities for group experiential learning, multiple perspectives exploration and using collaborative learning to develop and share alternative views. This was possible because Second Life provides a virtual experience to individuals with a high degree of similarity with the experience they would have if the activities were to be performed in the real world.

As Second Life is a 3-D virtual world with high resolution graphics it allows real interaction between users. The interaction is the basis of communication. Therefore, Second Life has been proven to be highly motivating and engaging for our students. This study also showed that educational work in Second Life requested a few requirements:

- Technical requirements on bandwidth, processor speed and most important a good graphics card.
- Users should get familiar with the use of new technologies.
- Teachers should be able to at least solve some minor technical problems.
- Technical manager to assist users if needed.

It should be noted, however, that the uses of Second Life in education are not limited to lectures, conversation and discussion of issues. On the contrary, in the *metaverse* it is possible to do other virtual interaction experiences as differentiated practices on various educational topics with positive outcomes. As has been reported by the students, they enjoyed the experience and they appeared to learn the information. Overall, this technology was positively received, although some students expressed concerns over the technology challenges associated with its integration into classes. The dominant presence of the exploration frame suggests that Second Life is both a new technology with much to be examined and a tool that can encourage the exploratory aspects of the practical learning process.

With students requesting more flexible teaching schedules and more creative learning experiments, virtual environments like Second Life are necessary in the development of the teaching methods. Future investigations should attempt to isolate the key factors that may influence the effectiveness of online instruction.

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