



Academicas Asesorias in the Open Wonderland Metaverse, Computer Technology “as a Good Alternative for E-learning”

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Abstract

The design of educational activities in immersive environments (3D virtual worlds) is an emerging perspective on the e-learning community research scope [1].

The objective of this work was to determine how viable is to teach into of a metaverse (also commonly known as virtual world) Open Wonderland, the research out was applied with 7 undergraduate students of two different educational experiences specifically. It should be mentioned that this is a pilot test and the beginnings of an investigation

The content of this work will be presented in the following way. In the part 1 we speak of: computer applications that in some way generate learning or knowledge on who use them, the problem that we observe to start with the research, its object of study, specific objectives, among others. Part 2 provides a reference of the institution in which research, were applied the theoretical foundations for the development of this work, mainly on the theories of the learning context and meaningful learning. Part 3 describes how this work was developed since the selection of students, the preparation of the advice and the implementation of such advice in the metaverse. In order to check the results of this work, in the part 4 shows a series of questions that was asking to students and teachers with qualitative answers. The interpretation of the results and the closing of this work are exposed in the part 5. And finally we show what is currently working.

1. Introduction

Education at distance, this modality in education is very important for it has been a great alternative for those who cannot study in a traditional way for a number of persons, this modality has faced several transformations through the years due to the swift improvements technology and communications in such a way that in old times courses would be taken by mail, nowadays, with the advantage of Internet, education at distance can be received at home and in diverse geographical locations.

2. Background

Thanks to the great advance in technology, especially in computer applications, plenty of this kind of applications supported by these improvements have been developed, always focused on generating knowledge, such as the following.

2.1 Metaverse

Neal Stephenson coined the term Metaverse in his postmodern novel Snow Cash (1992), where it represents a fictional virtual world. For the author Metaverse is a lifelike private and public utility, an extension of the physical world's real space within an Internet virtual space [2].

Castronova identifies three keys traits that all virtual worlds share [3]:



1. **Interactivity.** A virtual World must allow users to interact with it and with others users in ways that influence the world and the experiences of its others users.
2. **Physicality.** A virtual world must provide a graphical, three-dimensional simulation of an environment that can be generally perceived from a first-person perspective. Rather than providing a field of vision that actually represents the character avatar's field of vision (a viewpoint that approximates "looking through the avatar's eyes").
3. **Persistence.** A virtual world must continue to exist online and maintain its characteristics, and be affected by other users whether a user is present or not.

2.2 Virtual Reality

Very promising technological development for the consumption of media products, and, therefore, for the education of the future, whose development is being promoted by the increase in Internet virtual worlds or documents designed to be perceived in three dimensions. Besides the three-dimensional representation must be real-time an interaction and use conditions that allow the user to speak immersion. "This would not be a spectator or external manipulator of a canned reality", to enter or immersed in the virtual environment [4].

2.3 Simulation

The technique of imitating the behavior of some situation or process by means of a suitably analogous situation or apparatus, especially for the purpose of study, or personnel [5]. In contemporary life, however, simulation has generally come to be equated with science and technology and is viewed as synonymous with computation and the digital computer. Undoubtedly, one essential reason for his development is the amount of computing power that has become available over the last twenty-five years, and it perhaps not inappropriate to think of simulation as "computer simulation," so strongly connected is simulation to the computer and computer science [6].

3. Research problem

In the in-presence education model, a commitment should exist between the teacher and student in a permanent way, such commitment resides in its name; the presence of both, may it be for the academic part, counseling or tutorship. At times the students turn to teachers to solve doubts about a subject and the letter just do not have a space in the moment to support them; the necessary time to aid them; or, if they can aid them later, the student will be unavailable by then.

It high also be the case that an institution's infrastructure is not enough to receive a larger number of students who require a specific educational level (elementary high school or college). In the case of a university, there is a considerable demand for enrollment but possibly it cannot rely on more infrastructure or resources to expand the building in order to accept a larger percentage of students.

4. General objective

To use the Open Wonderland metaverse as a means to provide counseling for university students as a teaching-learning process in different subjects.

5. Specific objectives

- To develop a counseling space in Open Wonderland
- That the main communication media be human voice
- To give all the attendants a brief tutorial for metaverse development

6. Justification of the proposal

The counselings can be offered in determined schedules in which participants agree and they must not necessarily be in the same geographical location. The metaverse use is totally for free and it met requirements other metaverses do not offer, for instance only registered users can access the metaverse



preventing other user to interfere with the course of the counseling. It is an interesting option for education at distance.

7. Limitants of the proposal

There might be technical failures in whether the server in which the metaverse is installed or in the user's equipment thus damaging the evolution of learning activities.

8. Contextual framework

Counseling was applied to students from Calpulalpan Campus the Multidiscipline Academic Unit, UAT, In the Computer Engineering Program.

The Multidiscipline academic Unit was created in 1999 and it currently has a register of 1020 students in 8 programs; The Computer Engineering Program has 95 students in 4 semesters (2nd, 4th, 6th, & 8th). The students with which research was done were from the 2nd and 8th semesters; for the students in 2nd semester ages range between 19 and 21 years old (They were three: E5, E6, E7), for the students in 8th semester ages range between 23 and 27 years old (They were four: E1, E2, E3, E4). The reason why research was done with engineering students and not other program was not because they were more skilled in computer usage but because these are students the teacher who applied the test works with in the program, besides students were not selected by their skills but by simply requesting the considered to be viable applying in them the tests concerning the metaverse.

9. Theoretical fundamentals.

Edgar Dale in the last two levels of his Cone of Learning that we tend to recall about 90% of what we say and do after two weeks [7], for this reason the counselings were planned according to Meaning and Situated Learning Theories.

Virtual worlds can offer students and teachers favorable conditions for enduring learning to exist. Such conditions are mentioned as follows [8]:

- Potentially meaningful learning attitude in the student.
- Presentation of a potentially meaningful material. This requires:
 - On one hand, that the material has a logical sense.
 - On the other hand, the existence of anchoring ideas or adequate subsumers in the subject thus permitting the interaction with the new material.

Virtual environments are highly motivational for meaningful learning, since students are willing to keep learning about the current subject in an environment of collaboration and mutual help. The professor's task in the virtual worlds is one of a supplier and assistant collaborating in the quest for knowledge of his students [9].

10. Description of the proposal

In this project it was verified how viable is metaverse usage as an educational platform. The test performed was about counseling in specific subjects, such as a pre-degree "Research Seminar I" and "Modern Programming Paradigms", in the Seminar counseling was about subjects as "Research and Objective Problem" for the Paradigms subject it was about comprehension of the term object and its creation at a programming level.

The fig. 1 shows some of the asesorias into of metaverse.

Counseling sessions were five: 2 for 2 students at a time, and three individual, each of them having a duration of about 30 to 45 minutes after 9:00 P.M., Monday through Friday.

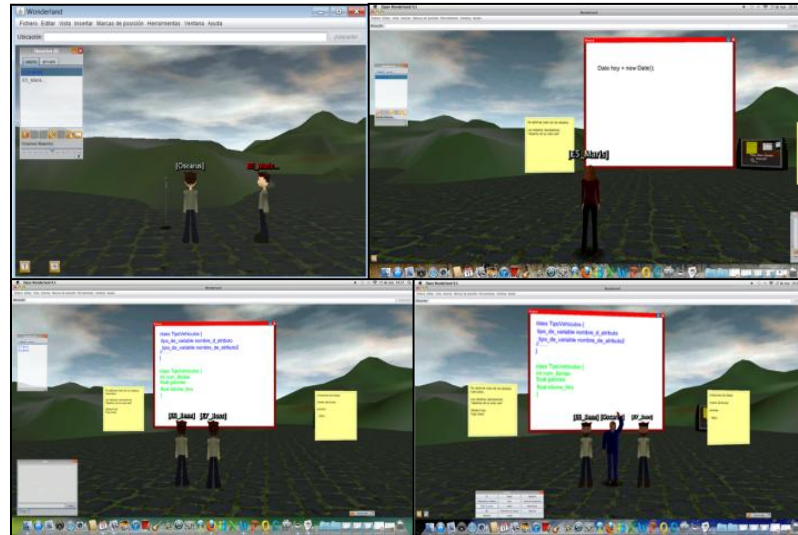


Fig. 1 Images of some of the asesorias Academic Classes Taught.

11. Future works

Two works are development for obtain degree of program Computation Engineering and they the next:

- Design and construction of Virtual Autonomous University of Tlaxcala with Oral Law suits Room
- 3d model of the digestive system for its teaching and the Nahuatl language
- 3d earth globe for teaching your layers

12. Conclusions

- Objective was met by the responses of the students and the teacher. With respect to the specific objectives were also met.
 - Two examples of a question with some answers (some answers were funny, but significant for this job).

Question: It was nice to get the advice within the virtual world?

E1 answered: Yes, it is a more practical, since for different matters cannot have live classes, and classes take advantage of this.

E5 answered: Yes, because it was an alternative that helped to dispel my doubts

Question: What difference you founded to receive asesorias compared with those given classroom education?

E2 answered: Well a really great was that I felt like that with more freedom, I do not know if because nobody was watching, i was in the comfort of my home or what happened?, but if I felt that way, at first it was strange, but when the teacher began to speak as I entered and to work. The short time we were in the virtual world was extremely fast.

E4 answered: That I was in my house, in my bed!, by taking a smoothie and receiving asesoria and not it was problem.



E5 answered: Only we do not have to be in "uni" for to receive classes, can be from anywhere in the world.

- Would be interesting that such asesorias and the entire work process was applied to students from other degrees.
- The use of a metaverse in the teaching-learning process could become a very good option to improve it.
- To prepare and give a complete class to check other results

References

- [1] Teresa C. Rodríguez García and Miguel Baños González, "E-Learning en mundos virtuales Una experiencia educativa en Second Life," *Icono 14*, pp. 39-58, 2011.
- [2] Nelson Zagalo, Leonel Morgado, and Ana Boa-Ventura, "Virtual worlds and Metaverse Platforms, New communication and Identity Paradigms," in *Virtual worlds and Metaverse Platforms, New communication and Identity Paradigms*. Hershey PA, United States of America: IGI Global, Agosto 2012, ch. 10, p. 150. [Online]. http://books.google.com.mx/books?id=Xu0UmVv9JUC&pg=PA150&dq=term+metaverse&hl=es&sa=X&ei=v-VjUfLtDKXn2QX7_YDADw&sqj=2&ved=0CC0Q6AEwAA#v=onepage&q=term%20metaverse&f=false
- [3] James D. Ivory, *Virtual Lives*. Santa Barbara, California, United States of America: ABC-CLIO, LLC, 2012.
- [4] Alfonso Gutiérrez Martín, *Educación Multimedia y Nuevas Tecnologías*. Madrid, España: Ediciones de la Torre, 1997.
- [5] Mauro Mancina, *Psychoanalysis and Neuroscience*. Milan, Italia: Springer, 2006.
- [6] Günter Küppers, Johannes Lenhard, and Terry Shinn, *Simulation "Pragmatic Construction of Reality"*. Netherlands, Netherlands: Springer, 2006.
- [7] Wine Ryce, *Generation to Generation*. Cincinnati Ohio, United States of America: Standard Publishing, 2010.
- [8] David Ausebel P., *Adquisición y retención del conocimiento, "Una perspectiva cognitiva"*. Barcelona, España: Paidós, 2002.
- [9] Inés Evaristo Chiyong and Carlos Fosca Pastor. (2010, Noviembre) Los mundos virtuales como entornos motivadores y generadores. VI Congreso Iberoamericano de Docencia Universitaria.