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Research Article

3D SIMULATORS AS A DIGITAL RESOURCE FOR EDUCATIONAL LEARNING IN MEXICO

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ABSTRACT

The purpose of this study is to propose a model that shows new learning resources, in the alignment of IT with the educational strategy, in order to recognize and implement the 3D virtual software in educational institutions, to reach to comply with the institutional goals and have a correct perception of their strategic influence in the institutions. The results obtained up to this point indicate that it is viable to improve learning in institutions, which already practice the practice of the implementation of a 3D simulator, considering that the skills that stand out are communication and experience.

INTRODUCTION

Currently, globalization at an educational, political, social, cultural and technological level has revolutionized the ways of working inside and outside educational institutions, which leads educational institutions to face various problems. Educational institutions try to take advantage of technology for their capacity and obtain a competitive advantage, since the educational form requires changes in their environment and depends to a large extent on their influence on information technologies. Thus, educational institutions are constantly searching for innovative ways to timely apply different IT (Information Technology), which congruence with their business strategy, lead them to achieve their educational goals. It is definitive that the innovation capacity of an educational institution depends a lot on technological advances.

That is why this article exposes how 3D simulation has been a watershed part in the new educational forms of the new generations.

The review of the literature allows us to distinguish the coincidences that serve as a guide in the way towards the scientific limits of this research, the existing relationship between the different articles studied allows us to make a more efficient analysis.

The three dimensions (3-D) of textbooks promises many potential benefits for teaching and learning in environmental education (EE), research on this subject is relatively scarce in the literature. There is little information on how to transform physical environments into pedagogical tools for EE. (Rao, 2014)

In this article, the authors address this need by developing a 3-D design model of textbooks based on a qualitative case

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analysis conducted at the Green School, Bali. The data was collected through a series of interviews and at the observation site. These qualitative findings contribute to the development of themes and a design model that can be adopted by professionals and future researchers in this direction. In addition, this research contributes to the attention of practitioners, the topics and criteria that should be addressed in the 3-D design of Textbooks. Therefore, this study is a significant attempt to bring together architecture and EE with a potential contribution to a field of knowledge that encompasses design and educational sciences.

Environmental designers and educators interested in harnessing the potential of the physical environment as an instrument of knowledge transmission in schools finds this article useful. (Rao, 2014)

Digital animation is a very powerful tool that is currently used more for entertainment but there are already institutions that use it as learning systems.

Cleeren G. shows us how the results of this study show that 3D animations improved levels of knowledge among periodontal patients. This improvement is significantly greater compared to patients who received verbal explanation with real-time drawing. The knowledge scores were higher, not only immediately after watching the video, but also after 2-3 weeks of follow-up (Cleeren G, 2014).

One of the limitations of the study was that the scale used to evaluate memory of the information was designed specifically for this study. Therefore its properties as a measure remain unknown. In addition, there is no comparative data on the general levels of knowledge using this scale. However, there are no standardized measures of knowledge of periodontal treatment in the published literature (Cleeren G, 2014).

Theoretical

Educational institutions begin to enter virtual environments in educational practices. A pilot is reported on the use of an online 3D simulation environment (UNITE), within a Scottish Higher Education university. The objective of the pilot was to investigate the pedagogical value and the technical feasibility of using the UNITE environment to improve collaboration and communication among tertiary students of Computer Science. (JimScullion, 2012)

The virtual environment called UNITE was built using Wonderland Open, a set of open source tools for the creation of virtual worlds in 3D. Eight students participated in the last year of a Scottish four-year bachelor's degree honors. The qualitative data were obtained from the participants through a discussion group. The results of this pilot study suggest that the participants: consider the technical stability of the platform to be of great importance; consider being represented by an avatar to be a positive experience; suggest that virtual worlds should be more widely used in formal education; found learning within a virtual 3D space to be of value both in the development of collaboration and communication skills and in building trust; and regarding voice and text communication functionality as of high importance in a virtual space. (JimScullion, 2012)

The immersive 3D virtual worlds like Second Life and Active Worlds and their potential to support and improve superior learning, teaching and pedagogy. Academics from two Australian universities, Charles Sturt University (CSU) and the University of New England (UNE), are currently working on a project to carry out a systematic review and environmental analysis of the use of 3D immersive virtual worlds in higher education in Australia and New Zealand. This work is parallel and complementary to another, similar sector-level research completed in other countries. (BarneyDalgarno, 2011)

The project seeks to identify and examine existing applications of the 3D immersive virtual worlds by the highest educators throughout Australia and New Zealand, with the aim of developing an understanding of how technology is being used for learning and teaching in all institutions and disciplines. The project will also inform about the opinions and perceptions of older educators who are not yet using 3D immersive virtual worlds in their teaching, but are actively exploring the possibilities, as well as the experiences of those who have previously considered this avenue, but have chosen not to go ahead with it or be otherwise able to do so. (Barney Dalgarno, 2011)

METHODOLOGY

The investigation will be carried out in three stages, the first one, with the documentary review, the second one will describe the problem and the third one will present the results of the research work and generate a BETA 3D simulator.

Scope of the investigation

The research to be carried out is of a non-experimental type, because it is not intended to manipulate the variables; it is of transversal design, since the data will be collected in a single moment; it is of exploratory and correlational type because it is intended to measure how the 3D simulation affects the issue, to support the achievement of the goals of educational institutions; as well as in the generation of a new learning resource. The development we will do, through a design software, documentary analysis, descriptive and correlational; using as a tool for collecting documentary information, scientific research articles and in relation to descriptive correlational analysis, field research will be conducted through questionnaires in educational institutions.

General objective

Generate a model proposal that shows how 3D simulation software, in the alignment of IT, can improve learning in Mexico's education system.

Hypothesis

H1: The alignment of IT with the strategy of educational institutions for continuous improvement.
H2: The generation and implementation of new learning resources in Mexican educational institutions.

Variables

In order to make our model, we first analyzed the variables that are related to the alignment of the IT with the educational strategy, which are directly proportional to its success, as it refers (Jim Scullion, 2012), with the research of the university Scottish, about the virtual environment called (UNITE), The

qualitative data were obtained from the participants through a discussion group. The results of this pilot study suggest that the participants: consider the technical stability of the platform to be of great importance; consider being represented by an avatar to be a positive experience; suggest that virtual worlds should be more widely used in formal education; found learning within a virtual 3D space to be of value both in the development of collaboration and communication skills and in building trust; and regarding voice and text communication functionality as of high importance in a virtual space. (Jim Scullion, 2012)

Variable: Achievement of educational learning goals

Variable: 3d virtual software

Dimension: Recognition of the virtual software application 3d
Indicators: Projects that can improve student learning and satisfaction in the educational institution.

CONCLUSIONS

Currently it is required that educational institutions are at the forefront to face competition, which is becoming stronger every day due to globalization and market technification. For this, it is necessary that the organizational goals are met, which must be based on technological strategies, and that the elements of the educational institutions are aligned towards the same objective. 3D simulation software can be an excellent resource to improve the way of learning, so it is important to advance in the new techniques of educational education.

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