



Chapter 10

Virtual Reality With Horizons Architecture for Educational Innovation


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ABSTRACT

Encouraging the creation of new products, methods, and services of value for social impact involves processes of educational innovation. This chapter aims to analyse different types of innovation in two scenarios of graduate classes aimed at innovation and entrepreneurship. The question that guided the study was: What kind of educational innovation do students perceive as principal in graduate courses that integrate virtual reality? The method used was based on the analysis of two groups of graduate students participating in a class that integrated virtual reality and the strategy of horizons architecture. Through these observations, the authors analysed the perception of educational innovation by students who had the task of building innovative entrepreneurial projects to contribute to the objectives of sustainable development (ODS). The results show the types of educational innovation, the link with the strategy of architecture of horizons, and with the use of virtual reality in distance scenarios.

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INTRODUCTION

In the fields of education, educational innovation is presented as a process to establish the necessary improvements. Innovation in education has been impacted by the introduction of artificial intelligence, the impact on driving lifelong learning, the application of neuroscience to analyze how people learn, and the growth of investment in the education industry. Specifically, the instructional design for learning environments requires consideration of strategies, methods, techniques and resources that support the conduct of a creative and motivating user.

This chapter focuses on the analysis of the integration of educational innovations in the strategy and resources, in a course given in two different moments. Within the realm of innovative designs, we can find the Horizons Architecture framework (Barroso, Molina & Poiré, 2019). It proposes an adaptive model to assist in a qualitative and quantitative way the capacity to generate strategies (decision making), ventures (public) and future scenarios in complex systems and high certainty, within a specific period. This model is developed over time and through a simultaneous complexity integrated by the following axes: legacy, community, learning, technology, context and projects. Based on this initiative, a transfer was made to the field of educational entrepreneurship to work on postgraduate courses, integrating the management axis. This axis was added after researching the results of the development of entrepreneurial competencies in the first moment of the course (Ramírez-Montoya and González Padrón, In press).

The objective of this chapter is to analyse the perception of educational innovation by graduate students, with an innovative design course that integrated conceptual ideas from the Architecture of Horizons framework, as well as emerging virtual reality technologies, for the construction of entrepreneurial projects that contribute to the Sustainable Development Goals (UNESCO, 2015). The guiding question of the study is What kind of educational innovation do students perceive as principal in graduate courses that integrate virtual reality? The study begins by presenting a theoretical basis of educational innovation, virtual reality, then raises the method of cases that led the research, the results are presented and closes with conclusions that invite further study of the subject.

BACKGROUND

Educational Innovation

Educational institutions focus on pedagogical, technological, methodological and organizational transformations, identifying the most effective innovative strategies, methods and resources to change and improve the teaching-learning processes and the academic achievements of the students (Essien, Akpan & Obot, 2015; Fidalgo-Blanco & Sein-Echaluce, 2018; Pila, Andagoya & Fuertes, 2020). Furthermore, they promote the construction and reconstruction of knowledge by students, inviting them to acquire skills to cope with everyday situations and solve new problems in blurred scenarios. Thus, “student-centred learning and the commitment of teachers to quality training and innovation in teaching and learning methods” (Rodríguez, Rodríguez & Altamirano, 2019, p. 149), require initiatives that provide answers to socio-educational needs. The universities, as organisations of the digital society and knowledge transfer, are called upon to build an innovative culture (Zhu, 2015), whose members are committed to: making changes and improvements in their educational, academic and organisational practices; working towards

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