

# Abstract

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## **The impact of information and communication technology (ICT) on architectural form of higher educational spaces.**

Virtual Reality (VR) has been proposed as a technological breakthrough that holds the power to facilitate learning. Most efforts within the VR community have focused on applications designed to fulfill purposes of training, such as vehicle simulators, medical and military training. The application of VR is important on higher education level it is also imperative to explore how this style of interaction could be used to help students in understanding and exploring more proper mental models of complex systems and processes, abstract models and other non-intuitive material. The hypothesis is that VR can successfully be used to support such complex understanding by stimulating and exploring all human senses whereas traditional notions of learning tend to focus on purely intellectual skills. The study will examine the constructive philosophy of learning and discuss how it may be supported by the use of VR to provide examples of different classes of VR applications that, for educational purposes, focus on learning. Learning-based virtual worlds are growing more popular in schools and among children. The virtual educational spaces (classrooms...etc.) have become a student-centered learning environment, in contrast to the teacher-centered environment of the Traditional Educational Space (T.E.S). The traditional E.S is designed as a kind of broadcast medium, a stage for the instructor's presentation of knowledge. In the networked E.S, however, emphasis falls on the processes by which students engage with one another, with the instructor, with the course materials, and with the virtual environment itself, in an on-going process of creating new knowledge. This thesis is composed of an introduction, two main parts and conclusions the first part is a literature review that includes two chapters, while the second one is application represented in three chapters. The purpose of the study is expecting the transformation in the form of architectural educational spaces with response to the wide range of ICT and use of VR applications especially in Architecture Design Studio (ADS). It is also identifying the new configurations and characteristics of (ADS) in Communication Era. The results of this study were related to the architecture educational process and developing the concept of digital architecture design. Development of the tools of Computer Aided Architectural Design (CAAD) as computer software and its application gave the impact on the form of (ADS) as a result of the development of communication technology.