

Chapter 7

Virtual Learning in Smart Education

ABSTRACT

This chapter expands the knowledge about virtual learning in smart higher education, and how these processes can be a tool for motivated and student-centered learning in a resource-enriched virtual learning environment with technology-embedded tools. Methodologically, selected articles are reviewed to expand the knowledge about virtual learning in smart higher education and with an example analysis of an open question (N=57) among teacher educators (N=105) about what kind of education they need for using a virtual learning environment with different tools. Theoretically, the analysis of the answers is based on the TPACK model and Gees five learning principles. The findings highlight that higher education and academic researchers have much to learn about teaching and learning in a virtual learning environment and in virtual reality that can enhance student-centered learning and reveal the pedagogical surplus value in their own teaching and learning context through the use of technology for an educational purpose.

BACKGROUND

Digitization have gone through a several paradigms shift where structures, processes and behaviours are fundamentally changed, as well in education as in the society, thereby changing even the teaching (Koschmann, 1996; Wegerif, 2007). Due to the rapid changes, they are changeable and pervasive

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because they are used in many different ways in everyday life (Koehler, Mishra & Cain, 2013). However, the potential implications of these emerging technologies have tremendous potential for teacher educators, classroom teachers, and students (Dieker, Hynes, Hughes & Smith, 2008). Virtual learning environments, VLE are providing lecture materials encourage and facilitate interactions and additional course content, which allows students to build and develop their own learning space (Kennedy & Dunn, 2018). However, education that uses widespread technology, such as a smartphone, tablet or laptop, is considered to be primarily used for informal learning and lifelong learning, especially for young adult students (Herrador-Alcaide, Hernández-Solís & Galván, 2019).

This article expands the knowledge about virtual learning in smart higher education, and how these processes can be a tool for motivated and student-centered learning in a resource-enriched learning environment with technology-embedded tools. The word ‘smart’ is an acronym for self-directed, motivated, adaptive, resource-enriched, and technology-embedded, and refers to wisdom as bounding together the ability of using and motivating self-directed learning, knowledge building, problem solving, critically reflections, collaborating and evaluating different circumstances in a resource-enriched virtual learning environment with technology-embedded tools (Hwang, 2014; Zhu, Yu & Riezebos, 2016). The following questions are addressed:

- In what way can teachers a) design and b) use different virtual learning activities and tools that are appropriate for student-centered learning and active participation?
- How do the students experience the virtual environment and tools for their learning?
- In what way can the virtual learning and tools be analyzed comparing to the students’ performance?

Virtual reality, VR can be defined as a computer-generated simulation of a three-dimensional image or virtual learning environment, VLE with which a person can interact with different tools. VLE is a gateway to a variety of resource-enriched and technology-embedded tools, such as lecture material, lecture recordings and / or images, online face-to-face webinars, F2F, online quizzes, chat, blogs, discussion forums, and other online resources (Kennedy & Dunn, 2018). VR is based on three basic principles: a) Immersion/engagement, b) Interaction/collaboration, and c) User involvement/participation within the computer-embedded simulation technology and the narrative to making

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