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Minerva Plaza - a new technology-rich learning environment

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Abstract

This article focuses on a new learning environment called Minerva Plaza that was opened in 2012 at the Faculty of Behavioural Sciences at the University of Helsinki. The purpose of the study is to find out how the new space has been used and received by the students, teachers and visitors, and to form a good overall picture of the strengths and weaknesses of the space as a technology-rich learning environment. Plans for the use of the space at Minerva Plaza are also discussed. The research is a case study where the Informant is a person who has worked as an educational technology coordinator at Minerva Plaza since it opened. One of the main goals is to make the most of the broad practical experience, insight, and theoretical knowledge that the Informant has about the use of the space.

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1. Introduction

The challenge in today's schools is to be transformed into environments that encourage lifelong learning and equip the students with 21st-century skills and capacities. Global awareness, creativity, collaborative problem-solving and self-directed learning are some of the most important skills for the future and learning environments can have an important role in developing them. (Groff, 2013; Groff & Mouza, 2008; Yelland, 2007; Hannafin & Land, 1997; Riel, 1994). Furthermore, today's students, who are digital natives (Prensky, 2001) prefer a new way of

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learning and different kinds of learning environments. For example, studies have shown that learning environments that are equipped with proper technology can allow teachers and students to adopt new behaviours and responsibilities consistent with the realities of a rapidly changing technological society (McGhee & Kuzma, 2003).

It appears that the preparation of teachers in the educational uses of technology is a key component in almost every improvement plan for education and educational reform efforts (Thompson, Schmidt, & Davis, 2003; Gupta & Fisher, 2012; Latham & Carr, 2012). In fact, teacher education institutions have an important role in modelling the integration of technology and student-centred pedagogies for their students (Ertmer & Ottenbreit-Leftwich, 2010) by making it possible for them to experience these alternative means of learning and thinking (Gibson, 2005). Nowadays, most of the teacher education students are also digital natives and skilled at using technology in their personal lives. However, as teachers they also need to understand how technology can support and facilitate meaningful learning (Angeli & Valanides, 2009; Ertmer & Ottenbreit-Leftwich, 2010).

Technology is inevitably one of the main agents of educational change today. It has the potential to facilitate students to engage in interesting learning contexts (Bitter & Pearson, 2002). Many researchers have investigated different technological means to support more effective collaboration and knowledge creation (Hong, Chang, & Chai, 2014). By educational technology, refers to “artefacts that mediate deliberate learning” (Crook & Lewthwaite, 2010, p. 437). This means that technology is only a tool; tools are designed for a purpose and their effectiveness can only be assessed within the context of that purpose (Lajoie, 2005). Decisions about educational technology should be driven by teaching aims rather than the use of technology for its own sake (Laurillard, 2002; Latham & Carr, 2012). According to Sutherland et al. (2004), there is a tendency to think that information and communications technology (ICT) is so “new” that its use should be accompanied by “new” pedagogies that will somehow transform teaching and learning. This notion may be true, but general theoretical perspectives about teaching and learning, which are central to all teaching, with or without ICT, should not be ignored (Sutherland et al., 2004).

However, the research of learning with technology suggests that computer-related tools can actually facilitate constructivist-oriented teaching and learning (Kim & Reeves, 2007); however, the mere presence of computers or other tools guarantees the success of these kinds of practices (Jonassen, 2000; Schmid et al., 2009, Bitter & Legacy, 2008). In the end, the productive use of technology is dependent on the social organization of the learning activities (Rasmussen & Ludvigsen, 2010, p. 401).

1.1 Technology-rich learning environments

In this article, we see the learning environment as “a place or community where people have access to various resources they can use to be able to understand different things and develop meaningful solutions to different problems” (Wilson, 1996, p. 3). It also includes the social, psychological and pedagogical contexts in which learning occurs (Fraser, 1998). According to Groff (2013), many learning environments have looked to technology in their efforts to redesign teaching and learning. Technology integration has long been a key area of concern in education and the intersection of technology with the rapidly transforming educational landscape is profoundly framing the nature of technology in education in new ways (Groff, 2013).

Lajoie and Azevedo (2006) identify the most relevant principles for supporting the design of technology-rich learning environments (TREs) that enhance teaching and learning. Instead of reviewing teaching machines, they describe some of the theories of teaching and learning that can be applied to the design of effective TREs. According to them, technological advances in teaching and learning should always be designed based on a theory or model of learning and instruction, and meet the needs of learners. In fact, they define a TRE as a learning environment that is designed for an instructional purpose and uses technology to support the learner in achieving the goals of instruction. The way the teacher and the student act in these learning environments depends on both the purpose of instruction and the theory guiding the design of the TRE (Lajoie & Azevedo, 2006).

On the other hand, Garrick et al. (2013) use the term “technology-rich learning environment” (TRiLE) to describe technology paired with interactive teaching approaches. With this term, they “emphasize the necessary synchronization that must exist to balance and align the curriculum (content knowledge), instruction, and assessment (pedagogical knowledge) with the instructional technology features employed”. They believe that for the results to be effective these components need to be synchronized and evaluated with thoughtful attention paid to the educational objectives and principles of learning (Garrick et al., 2013). The term ‘technology-based learning

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