Acceptance and Use of Game-Based Learning in Vocational Education and Training: An International Survey

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ABSTRACT
This paper presents findings from a study carried out between May and October 2013. Based on a survey, which was developed by the MoGaBa VET project partners, the study aimed at understanding the factors that influence the way vocational instructors perceive and use game-based learning. A total of 267 trainers from eight European countries took part in the survey. Results indicated that even though educational games were regarded effective and useful with regard to motivational aspects or learning to use ICT; however, it also revealed that the integration and widespread use of mobile GBL solutions faced several challenges linked to technical, institutional and also organizational aspects.

Keywords: 21st Century Skills, Digital Learning, Digital Pedagogy, Educational Games, Game-Based Learning, Teachers ICT Use, Vocational Training

1. INTRODUCTION
At present, many vocational education and training centres (VECs) struggle to retain students and to engage them in a meaningful way. It is agreed that VEC student retention may be due to the media and methods used for teaching. Students may have a low self-esteem, feel uncomfortable asking for help in a physical classroom, and prefer a media that leverages the technologies that they are familiar with (e.g., mobile or gaming). In addition, traditional settings may also make it difficult for students to learn from their mistakes and/or learn through failure as per Jarvis’ (2009) theory of experiential learning, for example.

On the other hand, mobile and gaming technologies seem to be able to address many of these issues, because of their pervasiveness, implicit motivational aspects, and above all, a structure and mode of interaction that many digital natives are familiar with. As a result, game-based learning approaches in the sense of “finite, rule-based problem-spaces that offer players different means

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to solve problems with a precise feedback and reward system” (Egenfeldt-Nielsen, 2011) seem to offer intuitive solutions to improve training in VECs and more importantly to ensure that students could improve both skills and self-confidence in a safe and motivating environment.

However, many instructors are reluctant to use such approaches for their teaching (Jackson, 2012; Kebritchi, 2010) and even though they have an interest in using such technologies (Demirbilek, 2010), they rarely make use of it. The reasons for this reluctance are diverse. Educational practitioners argue with tight time schedules that do not allow for the search and integration of games into their pedagogical work. They don’t know where to find relevant resources (Felicia, 2011; Prestridge, 2012, Wastiau, Kearney & Van den Berghe, 2009) and the few ready-to-use games, which are approved and available, are not commonly known and last but not least, the acknowledged effects of learning games are not consistently communicated in a convincing way. What is missing are ICT beliefs and practices representative of teachers who recognize “the role of ICT as a knowledge construction tool through collaborative activity, the relevancy of ICT to society and future employability, and the orientation towards authentic problem - based approaches to teaching and learning” (Prestridge, 2012, p. 455). Also, successful professional development that includes teacher efficacy in using the software, pedagogical issues and school culture is missing most of the times (Ketelhut & Schifter 2011).

Thus, for many the issue remains diffuse and is associated with an increased workload and unclear learning outcomes. But still, studies indicate that the interest to use digital games for learning is high and that most teachers acknowledge and even value the assumed motivational potential such games have for learning, especially for learners at-risk who are increasingly difficult to reach by traditional education and training. They often face “barriers to learning” that are difficult to overcome, such as low motivation or behavioural problems (Simmons & Thompson, 2011). However, study results provide evidence that game based learning approaches meet their needs and provide effective means to bring them back into learning (cf. Mitchell & Savill-Smith, 2004; Ulicsak, 2010, Schmitz & Czauderna, 2011).

2. REVIEW OF THE LITERATURE

For the past decade, game-based learning (GBL) has been investigated for both formal and informal learning environments and research has provided evidence for the educational benefits it can provide (Schmitz, Klemke, & Specht, 2012; Tobias, Fletcher, & Wind, 2014), such as mastery skills and decision-making (Kebritchi, 2010). Gaming environments offer opportunities for social interaction, which represents a vital aspect for the process of learning and which teens are willing to engage in (Fraser, Shane-Simpson & Asbell-Clarke, 2014). Research has shown that games improve motivation to learn academic topics and encourage students to become experts in a particular field by facilitating scientific inquiry, data analysis, and theory-building skills (Asbell-Clarke, Edwards, Rowe, Larsen, Sylvan, & Hewitt 2012) and make more aware of global issues (and consequently show more empathy) such as pollution (Klopfer & Squire, 2008) or health (Baranowski et al., 2008; Plant & Taylor, 2012). Results on the outcomes of video games for children and adults, for example, showed that the use of video-game-based intervention promoted changes in attitude and health behaviour. The motivational aspects and emotional dimension of video games constitute key elements for their introduction in environments where skills and knowledge may not be sufficient if emotions are not managed properly and accordingly.

Previous studies have found that engagement in video games depends on the game mechanics but also on players’ preferences, motivation, and internal regulations (Deen & Shouten, 2011). Based on their personality, and emotional states, players may seek different types of interaction,
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