Chapter 12

Google Educational Apps as a Collaborative Learning Tool among Computer Science Learners

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ABSTRACT

The purpose of this chapter is to investigate students' engagement using Google Educational Applications as educational social media tools to support teamwork. The participants of the study were a cohort of Computer Science students enrolled in the State-of-Art Technologies in Education (SOAT) online course at the University of Eastern Finland. The data was collected through pre- and post-Google Educational Collaborative Applications experience questionnaires and an interview. Based on the findings, it is evident that social media, and more specifically Google Educational Applications, can support social-constructivist models of pedagogy and that Google Educational Applications (as social media tools) have the potential to play an important role in the future of learning environments. The chapter provides experimental evidence that the use of Google Educational Applications can increase student engagement, and thus, Google Educational Applications can be used as an educational tool to support teamwork.

INTRODUCTION

Social media have evolved into mainstream technologies used by many institutions for educational purposes in numerous, innovative ways (Conole & Alevizou, 2010), even to the extent of such tools being utilized in traditional face-to-face classroom situations (Redecker, Ala-Mutka, Bacigalupo,

Ferrari, & Punie, 2009). Bruns (2008) proposes that "the World Wide Web has been radically transformed, shifting from an information repository to a more social environment where users are not only passive receivers or active harvesters of information, but also creators of content" (p. 22). Furthermore, Suter, Alexander and Kaplan (2005) state that Web-based technologies are encompassing the socializing features of the virtual spaces that emerged as zones for information sharing, community formation, collaboration and extension. It is noteworthy that a revised version of Bloom's taxonomy of educational objectives (Anderson, Krathwohl, & Bloom, 2005) has been extended to include the relevant terminology needed to describe the learning process through the use of social media tools (Churches, 2007) indicating the drift of adoption of such tools into modern education.

The motivation for this study stems from the researchers opinion that there is a lack of empirical studies on the specific use of Google Educational Applications as an instructional tool, particularly in Higher Education. There is still much to be investigated concerning the use of Google Educational Applications, which is often viewed as a much marginalised educational tool. Therefore, the aim of this study is to investigate the experience of using Google Educational Applications as an educational social media tool. A cohort of Computer Science students, enrolled in State-of-Art Technologies in Education (SOAT) online course at the University of Eastern Finland, participated in the study. The students used Google Educational Applications in their group work when dealing with the course topic, Social Media. They had to create a plan (scenario) for deploying state of the art technologies in education (SOAT) in real learning settings. In their scenario they had to identify a specific learning situation where the SOAT technology would be applied to support the learning process of the learners. We collected data regarding students' views and experiences *before* and *after* they had used Google Educational Applications to complete their coursework. The project aimed to answer the following research questions:

1. How familiar are the Computer Science students with the specific social media tool, Google Educational Applications?
2. What is the students' level of acceptance and how do they perceive the use of Google Educational Applications as an educational tool?

The experiences and feedback relating to the use of Google Educational Applications were gathered by means of pre- and post-course questionnaires, as well as by interviewing some of the participants. This paper will also discuss the experiences and challenges faced by the researcher in designing a teaching and learning project which integrated the use of Google Educational Applications. Finally, potential implications and recommendations for future implementations will be discussed.

BACKGROUND

Web 2.0 and Social Media in Education

In the 21st century modern education is becoming increasingly complex due to the technological environment within which it operates. This new environment offers exciting new possibilities but also raises challenges. Low cost, ubiquity, accessibility and ease of use are all potential affordances, which are making social media technologies an attractive option for transforming teaching and learning environments.

During the last years different authors (Alexander, 2006; Zimmer, 2008; O'Reilly, 2008) have tried to define Web 2.0 from many different view points. Despite the fact that almost all the definitions are debatable, none of them exclude

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