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The impact of Google Docs on student collaboration: A UAE case study

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ABSTRACT

This study had a two-fold aim; (i) to investigate the impact of Google Docs on enhancing four types of collaboration, and (ii) to identify the factors limiting student collaboration via Google Docs. Data collected through questionnaires and semi-structured interviews. The findings revealed that Google Docs is a valuable application to promote student–student and student–instructor interactions. In addition, it was found that Google Docs has the power to improve student–content and student–interface interactions through the resources and features offered by the application. Finally, the findings revealed a number of factors limiting the use of Google Docs for collaborative purposes.

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1. Introduction

The use of collaborative technology to enhance constructive teaching approaches and support collaborative and socially oriented theories of learning is a major trend in higher education (Thorsteinsson, Page, & Niculescu, 2010). According to Lipponen and Lallimo (2004), collaborative technology “enables and scaffolds the construction of communal ways of seeing, acting and knowing, and production of shared knowledge and new practices for successful future action” (p. 436). It is widely believed that the use of these tools in education improves students’ academic achievement and performance. Collaboration tools have the power to promote students’ active participation and engagement, improve knowledge construction, and enrich the learning process (Oblinger, 2005; Parker & Chao, 2007; Ravid, Kalman, & Rafaeli, 2008; Zorko, 2009).

Nevertheless, it is essential to realize that technological applications themselves do not assure developing a collaborative learning environment that leads to good educational outcomes (Sikkel, Gommer, & van der Veen, 2002). Effective students’ collaboration requires more than introducing students to a particular type of technology because they may not use it (Brook & Oliver, 2003). Therefore, it is important for teachers to understand how students perceive, react and actually use this technology. In addition, the successful use of collaborative technology requires teachers to design virtual learning tasks that correspond to activities for students to perform in the authentic environment (Chapelle, 2001). Since very limited research studies have been conducted about the potentiality of Google Docs, as an example of collaborative technologies, in facilitating collaborative learning environment, this study aimed at examining the impact of Google Docs on enhancing collaboration with peers, instructor, content and interface, and to identify the factors that limit student collaboration via this application.

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2. Literature review

2.1. Collaborative technology and education

Numerous studies have reported positive impacts of the use of collaborative technology in the educational context (Ishtaiwa & Abulibdeh, 2012; Oblinger, 2005; Parker & Chao, 2007; Ravid et al., 2008; Zorko, 2009). For instance, Zorko (2009) reported that the Wiki as a collaborative technology stimulated several collaborative behaviors, such as enhancing the opportunity of students' learning from each other and interacting with the instructor. More recently, Ishtaiwa and Abulibdeh (2012) found that collaborative technologies (asynchronous discussion board, blog and email) improved students' interaction with peers, instructor and content. The strengths of collaborative technology include its potentiality to provide an interesting and motivating learning environment that is suitable for the characteristics of today students, provide a practical and flexible platform for thinking, reflection and discussion that allows students to participate anytime and anywhere, and minimize obstacles of learning which include deficiency of communication skills, cultural limitations, or shyness (Arnold & Ducate, 2006; Ishtaiwa & Abulibdeh, 2012; Oblinger, 2005; Zorko, 2009).

However, the usage of collaborative technology is not without a number of challenges. Students who used collaborative technology have complained of lack of immediate feedback, low quality of conducting a discussion, lack of opportunities for intellectual conflict and higher order skills, deficiency of some students' commitment for effective participation, and inadequacy of involvement and guidelines from the instructor (Arnold & Ducate, 2006; Ishtaiwa & Abulibdeh, 2012; Johnson & Johnson, 2004).

Despite the fact that these challenges of collaborative technology deserve attention, it is still a powerful tool that could be used to support instructional collaboration. The research literature documented that several authors attempted to define the elements of collaborative learning. For example, Moore (1989) has defined three main elements of collaborative learning explicitly: interaction with students, instructor and content. Later on, Hillman, Willis and Gunawerdena added the interaction of both the teacher and the learner with an interface as a new element of interaction. Building on that, Curtis and Lawson, (2001) argue that the effective online collaboration requires four types of effective interaction: interaction with classmates; with teachers; with learning resources; and with the technology interface.

2.1.1. Student–student interaction

Student–student interaction is defined as an interaction between students that can occur between a student and another, between a student and several other students, or between several students as a group. It could be with or without the actual presence of the instructor (Thurmond, 2003). Several studies highlighted the characteristics of student–student interaction in the effective collaboration. Burge (1994) notes that for effective online collaboration, four types of peer behaviors are required, namely: participation, such as giving alternative perspectives and attending to the experiences of others, response, such as answering questions, providing effective feedback, and focused messaging.

According to Johnson and Johnson (1998), major types of behaviors in collaborative learning situations should include working in small groups, observing each other's works and efforts, helping each other to achieve their group goal, giving and receiving constructive feedback, sharing learning resources, information and insights, peer tutoring, and discussing and challenging each other's contributions. In addition, Curtis and Lawson (2001) emphasize the importance of the synchronous and interactive response to a goal, problem, or need that is jointly shared by all the members, organizing group work, initiating further collaborative activities, and explaining and elaborating information. In terms of online collaboration, Curtis and Lawson (2001) add the presence of social elements to supplement face to face interactions and commenting and reflecting on the medium and its features.

Other behaviors are also anticipated. For example, autonomous learning (Arnold & Ducate, 2006), a willingness to listen to others (Beatty & Nunan, 2004) and critical thinking (Arnold & Ducate, 2006) were considered as necessary behaviors for effective learning collaboration.

2.1.2. Student–instructor interaction

Student–instructor interaction means interaction that takes place between students and their instructor. This type of interaction is aimed at increasing students' understanding of the learning content or getting clarifications (Thurmond, 2003). Moreover, it improves students' motivation to learn and maintains their interest in the learned content (Moore, 1989). Berge (2002), Gunawardena (1995) and Swan (2001) agree that student–instructor interaction is a multifaceted relationship of numerous variables including instructor's level of social presence, quality and value of feedback, and depth of engagement in intellectual dialogues.

Successful teachers strive to organize and facilitate learning to help learners do and manage things in the right order (Schneider, Synteta, Frété, Girardin, & Morand, 2003). Apparently, the amount of instructor's contribution may differ from one learning situation to another because learning would be a flexible process that would go beyond any particular plan. According to Collis (1998), the communication forms between students and their teacher should be flexible and dynamic. All students need to ask questions and receive answers from the instructor immediately or shortly. Moreover, students should have opportunities for one to one interactions and communications with the instructor to meet their individual needs (Curtis & Lawson, 2001). Instructor's timely feedback and intellectual and emotional support in the form of supervision, assistance, encouragement and advice were also considered as key factors for effective students–instructor interaction in the effective collaboration (Alonso, López, Manrique, & Viñes, 2005; Curtis & Lawson, 2001).

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