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An online collaborative document creation exercise in an ODL research project module

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ABSTRACT

Online technologies to support collaborative learning provide lecturers in distance higher education with ever more opportunities to extend their teaching in beneficial ways. Students are also increasingly familiar with the online environment via social networking sites. How well this familiarity with online environments translates into the online collaborative learning space in an open distance learning context was examined. We report here on one cycle of an action research project involving 11 fourth-year computing students producing shared survey questionnaires and interview questions collaboratively online. Feedback on the collaboration exercise was obtained by means of a questionnaire which was analysed using grounded theory techniques. The expectation was that collaborative text creation software would be used but somewhat surprisingly, given their academic background, the students used email as the tool of choice. The students' reflections on the collaborative process showed that they noted and appreciated the benefits of collaborative work but also confirmed some of the previously reported frustrations of online collaborative work – in particular differences in levels of commitment and effort, and the free rider effect. Overall, the results pointed to the need for lecturers to be involved in a collaborative process to critically question and guide choices being made.

1. Introduction

The educational landscape has increasingly been influenced by technology-supported learning, and online environments offer lecturers in higher education a variety of new opportunities for extending their teaching into the online collaborative space (Koh & Lim, 2012; Matheson, 2012). Also, the social software of Web 2.0 allows students to interact in ways not previously possible, and allows them to produce content collaboratively online (Parker & Chao, 2007). In addition, Broussard (2008) posits that the use of computing tools by students at all levels of study continues to increase, and that students are not only computer literate, but are completely at ease with online information and online learning tools. It has been argued that such students expect the interactivity of Web 2.0 environments in their online studies (Singh, Mangalaraj, & Taneja, 2010). The topic of this paper is to examine how well this familiarity with online environments translates into the online collaborative learning space in an open distance learning (ODL) context. In particular the paper considers how ODL students working on a shared document creation task choose a collaboration tool, what their perceptions of collaborative work are, and the value of using such approaches for the participants.

Specifically, it was expected that students studying computing would be knowledgeable about, and comfortable with, online collaboration tools, and the research was motivated by a desire to test which of the array of available tools that *could* be used to support collaboration *would* be used by these students. With a single task in mind, that is, the collaborative, online development of documents, the level to which these students would find these tools beneficial could be used to confirm findings where similar approaches have been used elsewhere. This then would contribute to the body of knowledge on the use of collaboration tools by distance and online students and the extent to which these new opportunities can be, and are, used (Cleveland-Innes & Garrison, 2012).

The paper begins with a review of the literature on the use of online collaborative learning and document creation. The research design (an action research study involving fourth-year computing students completing an online collaboration task) and methodology

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(questionnaires and grounded theory analysis) for the study are then presented. The results of an analysis of the data follow. The next section contains a discussion of the results, including recommendations for making the collaboration more effective for the lecturers and the students in future offerings of the project, limitations of the study, and proposed future work based on the results of the study. The paper concludes with the lessons learned from the study.

2. Literature review

A background to the use of collaborative learning in general is provided for context, and then its online equivalent is briefly discussed. The advantages and disadvantages of such approaches are also explored, as well as the use of collaborative document development. As various tools are proposed to support such online collaborative work, some of the more important of these are reviewed.

The aim in this study is to focus specifically on collaborative efforts rather than cooperative ones. The distinction that will be followed here is that collaborative tasks are those where students work together on a single document, whereas cooperative tasks are those where the task is divided into sections and students work individually, and independently, on the sections before they are reassembled into a single completed document (Hadjerrouit, 2013).

2.1. Collaborative learning

Collaboration is defined as a project where two or more people work together to create, modify, review, and revise a common understanding (Hadjerrouit, 2013; Lomas, Burke, & Page, 2008) where that common understanding could be a shared document. Collaborative document creation is thus a social process (Koh & Lim, 2012), a cornerstone of Vygotsky's social constructivist approach to learning (Schreiber & Valle, 2013). Here the core understanding of learning is that students construct knowledge rather than simply acquire it, for example, via transmission from lecturer to student, and that this construction of knowledge happens through interaction, co-construction, and negotiation with peers (among others) (Kearney, 2004; Powell & Kalina, 2009; Schreiber & Valle, 2013). It has also been argued that such collaborative learning improves effective internalisation of knowledge (Powell & Kalina, 2009). In the process of reaching a consensus, students have to critically articulate and examine their own views, respond to the multiple and challenging views of others, and negotiate shared understandings (Kearney, 2004; Schreiber & Valle, 2013).

It has been widely noted that collaboration leads to the demonstration of, and sharing of, content knowledge, as well as to the building of teamwork competencies expected in the workplace (Capdeferro & Romero, 2012; Garcia, 2012; Matheson, 2012; Padilla-Meléndez, Garrido-Moreno, & Del Aguila-Obra, 2008). Further, collaborative writing is a skill that is required in both academia and industry as it combines cognitive, communication, and social skills (Southavilay, Yacef, Reimann, & Calvo, 2013).

However, collaboration has its drawbacks (Capdeferro & Romero, 2012; Garcia, 2012; Parker & Chao, 2007; Roberts, 2004). Frustration is a common complaint by students undertaking collaborative work. The sources of this frustration are coordinating time for group members to meet together, differences in levels of commitment and effort, and the associated free rider and sucker effects. Furthermore, not all students respond favourably to collaborative or group-work approaches (Dirkx & Smith, 2004), nor do they all see the value of the use of information technology in the learning process (Padilla-Meléndez et al., 2008). In addition, not all students benefit equally from such collaborative work (Oliveira, Tinoca, & Pereira, 2011).

2.2. Online and distance collaborative learning

Distance education has moved from print-based to synchronous and asynchronous online classes (Cleveland-Innes & Garrison, 2012), and so there is often an overlap between distance and online modes of education. Further, as distance education moves online, it needs to become more constructivist, interactive, and collaborative, introducing dialogue and engagement back into the learning process (Cleveland-Innes & Garrison, 2012; Guerrero & Crites, 2013; Singh et al., 2010).

Online collaboration can be seen as individuals using electronic technologies to accomplish the task of creating the common understanding (Padilla-Meléndez et al., 2008). Although, strictly speaking, electronic technologies includes the use of telephones and teleconferencing as a means of communication in the collaborative process (Graham & Misanchuk, 2004; Kock & Nosek, 2005), in this study we are only looking at the use of computer-mediated online collaboration. It is partly in the creation and editing of shared documents that students share understanding, and change the way that knowledge is generated and distributed (Guerrero & Crites, 2013). However, there is no need to rely on a single technology in such collaboration, as needs change during different stages of creating content, and different tools can be used as necessary (Karpova, Correia, & Baran, 2009). For example, experience has found that a single communication means such as an online document development tool may not be enough, and that better results may be obtained from including verbal discussions (via a tool such as Skype) (Smith, 2006; Wink, 2009). Also, it does need to be noted that asynchronous collaboration may be preferred over synchronous approaches as this allows participants time to reflect critically on the discussion and wording before responding (Russell, 2013).

Further benefits for collaborative online document creation include the possibility of increased student participation in learning and improved document quality (Hadjerrouit, 2013). Karpova et al. (2009) also note the benefit of learning to use online collaboration tools and using these tools to learn. A further benefit could be to help overcome feelings of isolation often experienced by online and distance learners (Parra, 2013).

When collaboration is online, there are other possible drawbacks. Further frustrations relate to time lags between successive contributions and problems with Internet connectivity, as well as an indication that such collaboration demand more effort and are more time consuming (Hadjerrouit, 2013). The lack of non-verbal cues is a further challenge in text-driven communications (Karpova et al., 2009), and a lack of familiarity between geographically separated participants leading to lack of trust (Singh, 2013). It has also been noted that the social affordances of some online collaborative environments may distract students from the joint task at hand (Koh & Lim, 2012).