

Students' Learning in Asynchronous Discussion Forums: A Meta-Analysis

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ABSTRACT

Asynchronous discussion forums are among the most preferred tools chosen to foster learning opportunities and knowledge construction. To reveal the cognitive engagement evidenced in the transcripts of the discussion forums, this study presents 51 papers. 17 papers reported research on students' attitude toward the use of ICT for learning, 16 papers revealed methodologies used in the field and 18 papers presented knowledge construction collaboration processes in online discussion forums. The primary sources for searching the papers were journals, proceedings and book chapters on educational technology. The starting point was the journals and proceedings that directly address ICT in education. The analysis shows that the majority of studies reported the level of students' knowledge construction remained in low level of cognitive engagement. The significance of the communication taking place through the mediation of computers seemed to depend greatly on the design of the classroom processes and explicit and tacit roles of teachers in providing straightforward guidance about students' participation in asynchronous discussions.

KEYWORDS

Asynchronous Discussion, Computer-Mediated Communication, Content Analysis, Knowledge Construction, Meta-Analysis

INTRODUCTION

The growing adoption of networked computers to mediate the process of education has long been the object of detailed investigation. Much of the research in this area focuses on how students communicate and negotiate meaning to achieve understanding. Asynchronous discussion forums are among the most preferred tools chosen to foster learning opportunities and knowledge construction. Even though there has been so much research conducted in the area of students' asynchronous discussion, it is important to investigate the evidence found in published research reports on how the research findings have contributed to understanding the natural processes of learning taking place in asynchronous discussion forums.

About fifteen years ago Salmon (2000) pointed out, "millions of words have been written about the technology and its potential, but not much about what the teachers and learners actually do online" (p. 11).

This meta-analysis reflects the imperative to follow-up Salmon's (2000) claim to discover what-learners-actually-do-online from published research. The literature describing online learning, claims of benefits, advocacy, and presenting success stories is extensive; however, there is a marked lack of

evidence-based research perspectives. The authors observed that many articles that have appeared in research journals, conference proceedings, and book chapters are provocative and promotional. Such articles are not presented as evidences of learning endeavors in online learning environments; and therefore, they are not the interest of the current analysis.

ONLINE DISCUSSION FORUM

The growing advancement of information and communication technology has enhanced communication between students and the instructor, and among students themselves. Many college instructors, due to easy access to communication technology tools, have moved or extended part of a classroom discussion to an online forum, where students and the instructor continue their discussion on course-related topics. The discussion forums, usually asynchronous, provide good data for both instructors and researchers to observe the quality of the interaction and the collaborative process of knowledge construction.

Woo and Reeves (2007), Heo, Lim, and Kim (2010), Pena-Shaff and Nicholls (2004) argue that knowledge, in the context of online discussion, is generally socially constructed. This perspective views learning as being distributed across people and tools. Angeli (2008) argues that higher order thinking cannot be understood by simply studying individual cognition per se; rather, one should investigate the whole system in which the individual operates. In the case of asynchronous discussion, the whole system includes the structure of the discussion, the individuals participating in the forum, and the flow of conversation.

Situated in online discussion forums learners are required to be active and interactive toward environments. The notion of active learning is highlighted in contrast to a traditional approach which treats learners as passive information recipients (Hughes & Daykin, 2002; McLuckie & Topping, 2004). Meanwhile, the notion of interactive learning refers to the student's interaction with both physical resources and other people (Sims, 2003; Tam, 2000). The online discussion forums provide learners with opportunities to construct their understanding by conjoining in online communication (Sims, 2003; Yakimovicz & Murphy, 1995). Here, the construction of knowledge has been represented by learners' contribution and interaction through electronic collaboration (Bonk, 2009; Bonk & King, 1998).

Woo and Reeves (2007) emphasize that knowledge construction occurs during social interactions. They quote Vygotsky's emphasis on the importance of social interaction and culture of learning. Learning in this regard is the result of a dynamic interaction between individuals, other people, information resources, and cultural artifacts including computer technologies, all of which contribute to the social formation of the individual minds (Engeström, 1999; Kozulin, 2002; Woo & Reeves, 2007). The environments from this view, should provide learners a venue for activities comprising communication and access to information resources through the information and communication technologies.

The traditional classroom has, so far, been a critical factor in the provision of learning environments. It provides a place where people can interact, experiment, collaborate, share, and create. At the same time, the teacher provides their expertise to explain, elaborate, observe, guide and give feedback. However, as digital technologies are in place, a new environment emerges. A classroom is no longer the sole venue for learning. Learners' play with computers and the Internet is one kind of participation in another kind of environment, apart from the traditional environments; they interact with peers, other people, and resources through the Internet mediation. The challenge is to understand how such learning technology ameliorates, improves, fills the gaps, and even transforms the traditional learning venues. In the case of this current study, online discussion forums provide a venue for students to construct their understanding collaboratively through sharing personal experiences, knowledge, and resources (Salam, 2012).

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