

## Chapter 8.11

# From Active Reading to Active Dialogue: An Investigation of Annotation- Enhanced Online Discussion Forums

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### **ABSTRACT**

*Our research aims to improve online discussion forums. The authors identify typical problems in on-line discussion that create difficulties for learners and describe a pedagogical approach emphasizing the importance of moderating in dealing with these problems. The usual design of discussion forums in learning management systems is not helpful but can be improved by specific add-ons. The authors describe a software add-on to the Moodle discussion forum called Marginalia that was designed to implement our preferred pedagogy. They focus on annotation, aiding the retrieval of archived material, helping participants build upon one another's ideas, and encouraging participants to write "weaving" messages that connect ideas and summarize the discourse. Preliminary studies of this software found a number of uses, some of them unexpected. The chapter concludes with an analysis of two trial classes employing Marginalia.*

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## INTRODUCTION

Human interaction through text based discussion forums is widely employed in online education today. Over the past two decades, many researchers have written about the pedagogical potential of forums for reflection, critical thinking, and collaborative learning. But a number of recent studies have found that there is a lack of deep engagement, and that students do not view forums as a space for critical discourse (Fahy, 2005; Friesen, 2009; Gao & Wong, 2008; Garrison, Anderson, & Archer, 2001; Lee & Jeong, 2009; Osman & Duffy, 2009; Rourke & Kanuka, 2007; Shea & Bidjerano, 2009).

Why is this the case? Are forums essentially useless, or can they be improved to promote active and critical engagement? In our previous research we have argued that leadership or moderating is one of the key factors determining the quality of learning in online forums (Feenberg, 1989; Feenberg & Xin, 2003; Xin & Feenberg, 2007). This claim is supported by a number of studies (Celentin, 2007; Meyer, 2003; Garrison, 2001; Luebeck & Bice, 2005). We proposed a set of moderating functions that are fulfilled primarily by the teacher but that can be more or less distributed among the members of the class. These functions bear both social and intellectual content. They include many activities we associate with leadership of discussion in a face-to-face context, such as recognizing participants' contributions and summarizing discussion at key points. The effective performance of these functions initiates, sustains, and advances dialogue online as well as in the classroom.

Unfortunately the technical environment in typical web forums does not facilitate moderating. The lack of adequate moderating may explain the failure of many forums to add much value to online courses. Widely used forums, such as those in popular course management systems like WebCT, Blackboard, and Moodle, are little different from those used in the early days of web-based course

management systems. Indeed, apart from cosmetic changes, most current forum interfaces are quite similar to the original newsgroup programs from which they descend. Some pedagogically advanced systems have been developed, such as Knowledge Forum (Bereiter & Scardamalia, 2003; Scardamalia, 2004), and TextWeaver (Xin & Feenberg, 2002), but thus far they have not succeeded in entering the mainstream.

Knowledge Forum, for example, is based on the theory of "knowledge building" through "scaffolding" user contributions with tags that signify their function in the discourse. It has a rather complex interface and requires a difficult apprenticeship. As a result, it has not achieved widespread adoption despite being well regarded by many educational technologists. Our TextWeaver software was a user-friendly education specific program designed to support a pedagogy emphasizing moderating. In theory such a pedagogy should lead to more and better interaction and intelligent reuse of the forum posts. But TextWeaver was conceived as an application program just before such programs were supplanted by learning management systems running on the web. It too failed to reach a wide audience.

In an attempt to address both the pedagogical limitations of existing forums and the problem of adoption, we have developed Marginalia as a web based descendent of TextWeaver (Marginalia, 2010; Xin & Glass, 2005). Marginalia is an open source extension to Moodle that adds annotation and several other features useful for enhancing online discussion. Annotation has gained a certain popularity on the Web as a technique to make interactions more effective. A number of studies have found it helpful for online learning and collaboration (Bateman, Brooks, Mccalla & Brusilovsky, 2007; Carusi, 2003; Farzan & Brusilovsky, 2008; Huang, Huang & Hsieh, 2008; Kaplan & Chisik, 2005; Lee & Calandra, 2004; Nokelainen, Miettinen, Kurhila, Floréen & Tirri, 2005; Wolfe, 2008). By leveraging the popularity of Moodle, we are able to introduce many people

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