Improving the interfaces of online discussion forums to enhance learning support

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Lalitha Jonnavithula

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Abstract

This thesis describes a research work aimed at improving the interfaces of online discussion forums (ODFs) in relation to their functional support to enhance learning. These ODFs form part of almost all Learning Management Systems (LMSs) such as WebCT, Moodle and Blackboard, which are widely used in education nowadays. Although ODFs are identified as valuable sources to learning, their interfaces are limited in terms of providing support to students, such as in the areas of managing their postings as well as in facilitating them to quickly locate and obtain specified information. In addition, these systems lack features to support inter-institutional cooperation that could potentially increase knowledge sharing between students and educators of different institutions. The interface design objective of this study therefore was to explore and overcome the limitations identified as above, and enhance the effectiveness and efficiency of ODFs' support to learning. Using a task centered design approach; the required features were developed, and implemented in a working prototype called eQuake (electronic Question answer knowledge environment). eQuake is a shared online discussion forum system developed as an add-on to a well-known open source e-learning platform (Moodle). This system was intended for use among inter-institutional students in New Zealand tertiary institutions that teach similar courses. The improved interface functionalities of eQuake are expected to enhance learning support in terms of widening communication among users, increasing knowledge base, providing existing matching answer(s) quickly to students, and exposing students to multiple perspectives. This study considers such improvements to ODF interfaces as vital to enable users to enjoy the benefits of technology-mediated environment. The perceived usefulness and ease-of-use of improved features in eQuake were evaluated using a quantitative experimental research method. The evaluation was conducted at three tertiary institutions in New Zealand, and the overall results indicated positive response, although some suggestions for improvement have been made in the evaluation. This thesis presents a review of the related literature, describes the design and development of a user interface, followed by its implementation in eQuake, and a description of the evaluation. The thesis concludes with recommendations for better interface design of ODFs and provides suggestions for future research in this area.

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