Using Computers to Facilitate Formative Assessment of Open-Ended Written Assignments

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Abstract

This thesis presents an e-learning solution to facilitate formative assessment of electronically submitted open-ended written assignments.

It is widely accepted that formative assessment is highly beneficial to student leaning. A number of researchers are active in developing specialized approaches and software systems for assisting formative assessment of student work. However, no comprehensive e-learning solution exists for facilitating formative assessment of students' open-ended written work. The project presented in this thesis has developed a new approach for using computers to facilitate formative assessment of electronically submitted open-ended written assignments.

Based on the literature review of the education theories around formative assessment and current computer software technologies, this project has developed three principles for e-learning support for formative assessment of open-ended written assignments:

1. It needs to facilitate all the activities that are potentially required for formative assessment of student assignments (for example, the creation of assessment criteria, the submission of assignments, and the analysis of the assessment results), not only the marking activity to create feedback on assignments.
2. It needs to provide an onscreen marking tool which enables human markers to mark open-ended written assignments in an intuitive and efficient way by replicating their paper-based assessment approaches.
3. It needs to provide a generic solution for facilitating formative assessment of open-ended written assignments from all disciplines, not a limited solution restricted to some specific domains (for example, computers science or business courses).

Based on these principles, a specification of an e-learning system for facilitating formative assessment of open-ended written assignment was developed and a system was implemented accordingly. This system, called the Written Assignment

Assessment (WAA) system, has been already used in the assignment marking of several courses at Massey University.

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Publications

Publications related to this research are:

Zhang, J., Heinrich, E. (2005). Using Computers to Support Formative Assessment of Assignments. *Proceedings of Ed-Media2005 World Conference on Educational Multimedia, Hypermedia & Telecommunications*. P. Kommers, G. Richards (Eds.), Association for the Advancement of Computing in Education, Norfolk, USA, pp4510 - 4515.

Zhang, J., Heinrich, E. (2005). A System Designed to Support Formative Assessment of Open-Ended Written Assignments. *Proceedings of the 5th IEEE International Conference on Advanced Learning Technologies 2005 (ICALT 2005)*. Kaohsiung, Taiwan, pp88-92.

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