ABSTRACT

Collaborative learning (CL) is an educational approach for teaching and learning that involves groups of students working together to solve a problem. In many regions, CL has gained attention from a huge population and has been selected as an environment to promote high quality learning via internet in modern education. In order to support the CL approach, a web-based environment called Collaborative Environment for Teaching and Learning Science (CETLs) is developed where the students can interact with each other and their teacher through online. CETLs is designed for learning science subjects. CETLs uses collaborative tools such as e-mail, bulletin board, discussion groups and chatting modules whereby the assessment of the students is integrated using Think-Pair-Share techniques. CETLs is capable of handling tasks such as uploading and downloading notes and assignments, email and chatting. CETLs is implemented using ASP technology and Microsoft Access as a database. The system is developed using object-oriented approach which exploits the Rational Unified Process (RUP) Methodology. CETLs employs three-tier client-server architecture to enable web-based technology that opens the door for remote interaction. The system is tested for its usability by the teachers and students who are the primary users. The data has been gathered and analyzed using Microsoft Excel and SPSS. The result shows that teachers and students agreed using CETLs is an effective and interesting teaching and learning environments. Therefore, this collaborative learning environment can provide a platform for students group activities in their learning process and working together to improve their communication and individual skills.