A network-based virtual community for innovative project collaboration

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Abstract:

In the construction industry, project participants from different disciplines work together to develop a building project from its initial design stage to construction stage. Multi-disciplinary efforts are required throughout the project period and every project participant is expected to work collaboratively in order to achieve project success. Thus, university students shall be equipped with strong communication and teamwork skills that facilitate them to get prepared for their future career in the industry. In Semester A of 2015/16, ACE Department launched a new course named "Integrated Building Project Development (IBPD)" that provides an excellent learning opportunity for final-year students to acquire these skills. The IBPD course aims to develop students' capabilities in creativity, innovation, team collaboration as well as communication. Under the IBPD course, the students from the five different Majors namely architectural studies (AS), building services engineering (BSE), construction engineering and management (CEM), civil and structural engineering (CVSE) and surveying (SURV) join together to develop innovative building projects. This year the whole IBPD group is made up of almost 300 students, academic faculties and industrial tutors. Although the IBPD course is exceptional in class size among the local institutions that offer similar project-based courses, it is delivered under traditional lectures and face-to-face small team meetings. Such teaching arrangement causes obstacles to students' learning in the perspectives of digital information exchange, innovation diffusion and students' interaction among the whole IBPD group. In this regard, a discovery device that encourages creativity, knowledge sharing and relationship building is necessary to enrich student learning experience in the IBPD course. On-line social networks have become increasingly attractive in the past decade and they enable people to build and sustain relationships for certain purposes. With regard to the significant role of several on-line networks in personal and commercial interactions in recent years, the possible outcomes arising from effective networking are creativity, expertise and collective intelligence. However, the existing e-platform of the university like Canvas and AIMS cannot fully support any on-line networks that promote team collaboration and interpersonal relationships. Thus, a systemic network designed for the IBPD course is ideal for involving students, academic faculties and industrial tutors in virtual community engagement. Additionally, the proposed cloud-based architecture establishes an integrative platform that can store, share and manage all project issues in a convenient and efficient way. Under the cloud-based virtual community, documents are stored on remote servers in cloud and multiple network members can achieve real-time collaboration. As such, the students can learn anywhere, at any time and with any device.