

COACHING DESIGN-BUILD PROJECTS IN ENGINEERING EDUCATION: SELF-PERCEIVED SKILLS DEVELOPMENT NEEDS BY FACULTY

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Abstract

The CDIO Initiative (Conceive, Design, Develop, Operate) is a worldwide partnership of universities to reform engineering curricula in each of the participating institution. In the framework of shifting towards a more competency-based approach, the Faculty of Engineering from the University College of Ghent joined the CDIO Initiative in 2004. The engineering education curriculum was redesigned, implementing design-build projects from the first year onwards. The new curriculum was first implemented in 2004-2005. During completion of the design-build project, each of the student teams is coached by a faculty member, usually a teaching assistant. Since none of the coaches was familiar with this kind of 'teaching', all of them were introduced to group dynamics and working with groups in a half-day course. Despite this course, most of the coaches felt quite insecure when being exposed to these new duties, even the second time of running the new curriculum. Hence it was decided to survey their skills development needs, as perceived by themselves. This should enable the leadership to identify these needs accurately and to provide appropriate staff development, tailored according the articulated needs. The paper offers a concise overview of the institutional policy paper on educational innovation which fostered the Faculty of Engineering's participation into the CDIO Initiative, tackles the competencies linked to the coaching of student teams in project-based learning, and describes the underlying motivation to set up the survey on skills development needs among faculty, the construction of the Likert-type questionnaire, the data collection and analysis as well as the interpretation of the results.

Key words

Project-based learning, engineering education, staff development, design-build projects, coaching skills