Culture in Engineering Education: CDIO framing intercultural competences

As engineers today often work in intercultural projects and contexts, intercultural competences must be part of the learning objectives in engineering educations. Cultural aspects of engineering education should not just be treated as a question of appropriate communication and teaching; cultural aspects are basically part of engineering disciplines, work challenges as well as the contextual elements in engineering curriculum [1,2]. This is reflected in the aims of the CDIO programme [3,4]; however, the programme, as well as the teaching practises, undoubtedly needs to further develop approaches to cultural aspects in engineering education. Hence the key-question of this paper is how CDIO support the development of intercultural competences in engineering education. The paper explores the implementation of CDIO in an intercultural arctic engineering programme in Greenland that since 2001 has been enrolling students with special focus on developing intercultural competences. The discussion draws on the socio-technical approaches to technology and professional engineering practises [5,6]. We conclude that intercultural teaching is not just a matter of teaching in spite of cultural differences; it involves the ability to communicate across differences and foster mutual learning processes and approaches to problem solving. We also point to methods and lessons learned to address this challenge in practice. The discussions and findings of the paper have relevance in several ways. Firstly, it addresses the continuously development of CDIO, including the current discussion of a new principles [7]. Secondly it has practical relevance to the engineering education, which to a growing degree has to cope with the potentials and challenges of internationalisation of educations and thus intercultural classrooms. Thirdly it has a more general relevance for educational development as engineers most often are working in projects within different cultural settings and contexts and in culturally diverse groups.

General information
Publication status: Published
Organisations: Planning and Management of the Built Environment, Department of Management Engineering, Innovation and Sustainability, Section for Arctic Technology, Department of Civil Engineering
Contributors: Hoffmann, B., Jørgensen, U., Christensen, H. P.
Number of pages: 1,136
Pages: 651-663
Publication date: 2011

Host publication information
Title of host publication: 7th International CDIO Conference 20th-22nd June
Place of publication: Kgs. Lyngby
Publisher: Technical University of Denmark (DTU)
ISBN (Print): 978-87-985272-6-8
Keywords: Community networking, Engineering context, Programme development, Intercultural competences, Authenticity
Electronic versions:
proceedings cdio 2011[1].pdf
URLs:
http://www.cdio2011.dtu.dk/About/Proceedings.aspx
Source: orbit
Source-ID: 284208
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2011 › Research