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The Birmingham Grand Challenge Project: Enhancing Student Employability Skills across the STEM Disciplines

K. I. M. Hawwash¹

Professor in the School of Civil Engineering
University of Birmingham
Birmingham, United Kingdom
k.i.m.hawwash@bham.ac.uk

J. S. Illingsworth

Assistant Director, HE STEM Programme (Midlands and East Anglia)
School of Civil Engineering
University of Birmingham
Birmingham, United Kingdom
j.s.illingsworth@bham.ac.uk

Conference Topic: University - Business Cooperation

Keywords: Grand challenge employability skills, reflection, problem solving, communication skills, interdisciplinary teams

The Birmingham Grand Challenge Project was developed in 2010-11 and run as a pilot in the summer vacation of 2011 as a free standing module. This module aims to provide Masters level students with experience of working in a multidisciplinary team to propose solutions to an unknown, unfamiliar issue. This “real-world” scenario is posed by industrial partner(s) and gives the students some experience of the type of work they will encounter during their careers: problems with no one right or wrong answer. Working in cross-disciplinary teams, sometimes for the first time, students use their problem solving skills and scientific approach, and present their ideas to a similarly cross-disciplinary panel.

The pilot Grand Challenge took place in July/August 2011 for four weeks. The Challenge involved four teams of eight students from the Schools of Mathematics, Physics, Chemistry, Chemical Engineering, Mechanical Engineering, Electrical Electronic and Computer Engineering and Civil Engineering.

¹ K I M Hawwash, k.i.m.hawwash@bham.ac.uk



Grand Challenge included structured sessions, designed to help develop employability skills and confidence, presented by the University's Careers and Employability Centre, Alumni and participating companies. The sessions included teamwork and team building, communication skills, personal development, reflection, personality analysis, environmental considerations, Intellectual Property awareness, corporate responsibility & professional ethics. Companies taking part were those which usually target University of Birmingham graduates for employment and included BT, Accenture, PWC, QinteiQ, TeachFirst, Alta Innovations and Atkins.

The challenges were posed by IBM and by Atkins/Birmingham City Council, and although the students were at first daunted by the scale of these, they soon identified areas within each challenge on which they would focus. IBM challenged two teams to consider how to make Birmingham a smarter city and Atkins/Birmingham City Council asked the other two teams to propose how Birmingham might respond to the requirements of a European environmental award.

At the end of the four weeks the teams presented their ideas without the aid of any presentation software –no PowerPoint or similar. This meant that the audience was treated to sketches, posters and video clips rather than bullet points.

Students were assessed using a combination of peer review, a personal reflective essay and the group mark & presentation. They were also expected to complete a log book of personal skills which they would be able to utilise for graduate employment applications. Atkins and IBM each sponsored a small prize for the highest performing individuals from each challenge.

The paper reports on the evaluation that was undertaken of both the pilot and ht second year of running Grand Challenge. ■