Conference Review Procedure

These proceedings are a published record of the Fourth Biennial Conference of the South African Society for Engineering Education (SASEE). The purpose of these proceedings is to disseminate original research and new developments within the discipline of Engineering Education.

All papers and extended abstracts accepted for this conference went through a multiple-review process prior to publication. Authors initially submitted extended abstracts which were double-blind reviewed by three reviewers. Based on the outcome of this review, authors were invited to either develop this extended abstract into a full paper, or were invited to revise their extended abstracts based on the reviewers' comments for resubmission. The resultant papers were then further reviewed by three reviewers using a double-blind peer review process. Authors were required to consider and implement the suggested changes where required.

The reviewers for the papers and extended abstracts were drawn from the SASEE Executive, SASEE membership, and the Centre for Research in Engineering Education (CREE) as appropriate.

The rejection rate for extended abstracts was 12% and for full papers was 7%.

SASEE Biennial Conference Organising Committee, 2017

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Prof Jenni Case UCT)
A/Prof Brandon Collier-Reed (UCT)
A/Prof Marshall Sheldon (CPUT)
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Service-learning in engineering education: Developing group collaboration

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Background

The Faculty of Engineering, Built Environment and Information Technology at the University of Pretoria includes a compulsory module, Community-based Project (JCP), for all its undergraduate students. This is the only compulsory service outreach programme for these students during their undergraduate degree programmes and accounts for eight credits that constitute 80 notional hours. This module gives students the opportunity to function in groups.

Groupwork as a core element of the module

In a previous study, alumni of the JCP module reflected on the soft skills they had gained from the module and indicated that groupwork (74.0%) and time management (70.2%) were the most critical skills acquired.

Research

The aim of our research is to identify key aspects that contribute to the proper functioning of teams. The study used a survey to investigate the roles the students played in their groups and the impact of these roles on the group, how decisions were made in the group and to what extent expertise and teamwork skills were utilised in the group.

Students have specific roles in the team, such as team leader, spokesperson, administrator, treasurer, motivator or quality control. Of the students surveyed, 68% indicated that they preferred to work in a group; 78% stated that, if given a choice, they would rather work in a group; and 87% indicated that the group rather than the lecturer prescribed what they needed to do in the project.

Even though the students do not always have the experience needed for the particular project undertaken, most of them (80%) were of the opinion that their teams possessed a variety of skills and that the team members’ skills complemented each other. The outcomes of the study indicated that most students prefer to be in self-selected groups and that the project should be aligned with their expertise.