

# Developing professional skills: introducing students to graduate attributes in first year engineering at RMIT

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## Abstract

Engineering at RMIT University is structured into four schools: Aerospace, Mechanical and Manufacturing Engineering (SAMME), Civil, Environmental and Chemical Engineering (SCECE), Electrical and Computer Engineering (SECE) and Engineering TAFE. In 2009, SAMME trialled the PebblePad ePortfolio system in the final year Aerospace Thesis Projects course where students had to submit their thesis via PebblePad and also keep a blog to evidence progress through the semester. In SCECE, students entering fourth year had to complete a Profile in PebblePad for their Vacation Employment course, a mandatory, non-credit bearing subject in which students complete the equivalent of 12 weeks full time work experience in which they need to evidence Engineers Australia's Stage One, Professional Competencies in order to qualify for professional accreditation.

Following the general success of these pilot projects, the three Higher Education Engineering schools considered broader adoption of ePortfolios to improve Professional Skill development in their programs, satisfy program accreditation standards with Engineers Australia (EA), and provide students with opportunities and mechanisms to evidence their development of EA's graduate attributes. As a result, the decision was made to introduce ePortfolios into all first year Engineering programs across the three schools in the core, multi-disciplinary, problem-based learning course, related to the Engineers Without Borders (EWB) challenge project. This is the first stage of introducing ePortfolios across all undergraduate Engineering programs: in 2011, ePortfolio use will be extended into second year, then 2012 into third year and finally fourth year. Therefore by graduation, students will have developed their ePortfolios across their programs and use this to evidence their learning, skills and professional competencies. This research forms the initial stage of a broader longitudinal study of developing and evidencing professional graduate attributes as well as how ePortfolios support student engagement and reflective practices.

This paper discusses the implementation of ePortfolios into Professional Practice 1 in SAMME. This course has approximately 350 students, many of whom are school leavers commencing at university. SAMME was keen to improve both student transition and the first year experience. Specific interventions included redesigning the school orientation program and curriculum to embed ePortfolio activities, explicit linking of professional skills development and regular reflective practices through student blogs and increased and timely feedback to students. Initial Course Experience Survey (CES) results showed student satisfaction ratings jumping from 45% to near 80%. A factor which contributed substantially to this increase in student satisfaction was enhanced levels of feedback which were provided to support student reflective practice that was enabled by use of PebblePad.