Impromptu Design as a Vehicle for Developing Team Work and Problem Solving Skills in Design Engineering

Carl Reidsema (reidsema@unsw.edu.au) and
Stephanie Wilson (stephaniewilson@unsw.edu.au)
Clare Netherton (c.netherton@unsw.edu.au)

University of New South Wales, Australia

Abstract

Design Synthesis is a mixture of art and science, and as such is still poorly understood. Engineers today are often physically divorced from the process of making an object. The last century has seen the disappearance of the engineer as craftsman and manufacturer and this alienation from the object of design places an even greater importance on understanding (and thus teaching) the *how* of design. A current focus of design engineering education is in the development and assessment of students' design problem solving skills both individually and in teams that incorporate creative and rational aspects of reflective practice as suggested by Schon. Success in this area is seen as critical to any significant improvements in the quality of engineering education and is best implemented in the first year curriculum. Several reports have suggested that employers perceive engineering graduates to have insufficient problem solving, creative thinking, teamwork and communication skills. New competitive strategies for industry such as Concurrent Engineering which place critical importance on collaboration between participants from many disparate areas of expertise suggest that demand for these skills is only likely to increase. This paper discusses the role of Impromptu Design as an activity within an Experiential Learning Framework that focusses on developing these skills as well as encouraging students to enjoy the intellectual excitement and challenge of studying in their field in ways that the students perceived as exciting, interesting, fun and relevant.