CURRICULUM DESIGN MODEL FOR THE DEVELOPMENT OF TRANSFERABLE SKILLS IN ENGINEERING

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Engineering professional bodies worldwide have been embracing a number of transferable skills criteria in the expected programme learning outcomes for engineering programme accreditation. Problem solving, creativity, teamwork, lifelong learning, communications and research ability are all expected transferable skills for a well-rounded engineering graduate (Bertelsen and Chadha, 1999; Staddon, 2002). Higher education institutions are given the tasks to re-design the curriculum in order to embed and embrace these skills in the curriculum. This has caused numerous issues and concerns across the sector. Often transferable skills courses are designed as quick fix add-on courses to address the immediate issues such as credits, learning outcomes and diversity from the management top-down. They are often designed and delivered without the understanding of previous and current academic and work experience of students, and with little concern on how students may engage with the learning. There is a certain amount of haziness from the perception of both the students and the teachers on the awareness, the understanding, the delivery of learning and the assessment of such skills. It is important to remember transferable skills are not by tradition part of a degree curriculum. Many academic professors do not actually have the personality or skill-sets to demonstrate such wisdom (Chan, 2005). Often the learning methods are not relevant to the skill-sets they try to teach or not related to authentic examples, there is little coherent link between course outcomes, methodology and assessments. In addition, students are often not explicitly explained what the learning outcomes of such skills deliver. To address the skills agenda, it is vitally important to understand the students' and staff perceptions to ensure their expectations are matched. In this study, we present a model based upon research conducted in the field of engineering at an Irish Higher Education Institution in a 5 year timeframe. It is proposed here as a theoretical model for developing skills by enhancing our conceptual understanding of both students' and teachers' perceptions and expectations of transferable skills and by relating what is important to them. It amends as well as complements the outcome based student learning approach model. It gave some guidance in the process of course design on the learning outcomes, delivery and assessment under which transfer is most likely to occur. The findings have raised transferable skills awareness and allow potential improvement amongst staff for aligning students' perceptions of transferable skills with the learning activities and learning outcomes. This has also provided a pathway for designing and embedding some diverse teaching activities and assessment for transferable skills in the curriculum.