An Holistic Approach To Skill Development

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ABSTRACT

This poster is the result of the author's doctoral research which examined the use of project-based learning in IT degrees. It identifies a holistic approach to IT education, starting from secondary school level, which the author believes would lead to better graduate outcomes for the IT sector.

Categories and Subject Descriptors

K.3.1 [**Computers and Education**]

General Terms

Human Factors, Theory.

Keywords

Capstone projects, project-based learning, professionalism

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1. INTRODUCTION

The author's doctoral research set out to answer two questions. Question One asked whether there was a demonstration of IT skills exhibited by students during a capstone project, and Question Two attempted to determine how a project-based learning approach contributes to the initial development of IT professional skills. This poster paper presents the answers to these questions and proposes a holistic approach to IT education and professional development.

2. RESULTS

The research for Question One identified that the students who undertook the project gained from the learning experience, increased their confidence and developed their technical and non-technical skills. Question Two showed that project-based learning, as undertaken in a capstone projects, could not directly be linked with the development of IT professional skills and values. The capstone projects, however, did provide students with a sound basis to commence work within the profession. Their completion of portfolios of work provided each with an advantage when seeking employment. There was no evidence to suggest students develop a better understanding of professional ethics, values and practices through their capstone projects. This is not to say this cannot be achieved, nor that there may have been no 'latent' learning that may emerge later in their careers. The poster is a diagrammatic view of how IT skills could be enhanced with the participation of all stakeholders.

3. CONCLUSIONS

The challenge for the IT sector is the creation of the professional society. There are many working in the sector at present who have no professional qualifications and do not see the need to belong to a professional body. That horse has bolted. There is an opportunity however to develop a framework through education that reinforces the benefits of a professional approach underpinned by a professional body. A holistic approach to the structure of IT education and professional career development is required if New Zealand is to develop as a competitive contributor to the global knowledge economy. In an effort to address this goal the following steps are proposed.

All IT programs should be accredited by the IITP using the ACS framework. This could include registering all project-based courses. As discussed in the previous chapter, this process is already under way with initial discussions and development being held between IITP and the ACS. The adoption of this certification will initially be in addition to the program certification and review undertaken by the NZQA. It is a necessary step for the IT sector, through the IITP, to gain ownership of the development of future IT sector employees. The proposed process is no different to that undertaken by the nursing profession in New Zealand, where the
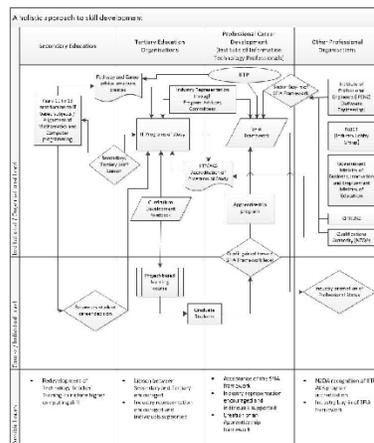
Nursing Council is actively involved with curricula validation and the registration of graduates. Once the initial group of institutes have their curricula validated and accredited by the IITP it will be difficult for others to remain outside of this regime as accreditation is an important factor in course promotions.

All students enrolled in an IT program should be registered with the IITP as student members. Such a membership currently exists, but is optional. Coupled with the previous suggestion of curricula accreditation, this would encourage continued membership prior to the beginning of students' professional careers. This would also result in students becoming exposed to the purposes and values, and learning its code of conduct of the IITP much earlier.

All TEOs with accredited IT programs should be required to develop pathways of study with their local secondary schools. This IITP has been actively involved in the review of the secondary teaching units with a focus on a career in IT. These teaching units have been introduced into the Year 11 curriculum in 2011, Year 12 curriculum in 2012 and are to be introduced to the Year 13 curriculum in 2013. This provides an opportunity for all TEOs to develop a pathway of IT education from secondary students into tertiary study.