Chapter I
A Dynamic Structural Model of Education and Skills Requirements for Careers in Information Systems:
Perspectives Across Gender and Time

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ABSTRACT

This chapter presents a dynamic structural model of the relative contribution and importance of education and skills required of information systems (IS) professionals. Model development took into account the technical skills found in many tertiary IS programs, other business-oriented academic studies, and soft skills sought by employers in new graduates. The model also includes features of the working environment which influence the career progress of IS graduates. Acknowledging the importance of these four areas, the authors present a second-order structural model that links these areas and compares the application of this model to IS students and decision makers who employ graduates. The model fits the data for the two groups and exhibits some unexpected outcomes in the area of soft skills, with students attributing more importance to soft skills than IS managers. The model was employed to identify gender differences in perceptions of the relative contribution and importance of education and skills required of IS professionals. The model also includes features of the working environment which influence the career progress of IS graduates. The model was used to describe how attitudes and perceptions of IS professionals change across career stages as measured by age groupings. Changes in perceptions across four major age groupings show significant differences with respect to these factors according to age groups

and by inference, career stage. The model allows, with some confidence, a quantitative interpretation of the relative importance of the respective variables from the perspectives of the student and employer stakeholder groups toward the education and professional development of IS professionals. The model also suggests the presence of contrasting, gender-based quantitative views of the relative importance of the respective variables to the education and professional development of IS professionals.

INTRODUCTION

Are the aspirations of IS students and employers fundamentally incompatible? How can IS educators help to achieve a better fit between university study and professional IS practise? How do gender and age affect perceptions of the relative value of education, reward, and career development?

Employers are often critical of a lack of practical experience or unrealistic views and expectations perceived to be held by some new graduates. Students and new graduates necessarily lack experience, yet they sometimes seem to expect to begin their professional careers in senior positions.

Students and new graduates are first and foremost concerned with employability. They typically focus on developing sufficient skills and a base of knowledge to secure their first professional position following graduation, to survive in that position, and to insure that their education will prepare them for advancement in the medium term of 5 or more years (Knapp, 1993; Lowry, Turner, et al., 2004; Waterman, Waterman, & Collard, 1994).

Employers, on the other hand, often indicate that they want new graduates who can be immediately productive in their environment; who are teachable and loyal team players who work to deadlines; who possess the ability to make an intelligible presentation; and who can write understandable business letters, memoranda, and reports (Knapp, 1993).

How can a workable and satisfying balance between employer needs and graduate expectations be reached? How do gender and age affect perceptions over time?

PREVIOUS STUDIES

Considerable work has been devoted to investigating skill requirements of IS graduates including soft skills (Ross & Ruhleder, 1993; Van Slyke, Kittner, & Cheney, 1997), hard skills, and job features (McLean, Tanner, & Smits, 1991) that are motivating factors for IS graduates. Some of these studies compare various stakeholders such as academics and industry or student perceptions (Ahmadi & Brabston, 1998; Cappel 2001/2002; Farwell, Lee, & Trauth, 1995; Goles, 2001; Lee, Koh, Yen, & Tang, 2002; Orr & Von Hellens, 2000; Trauth, Farwell, & Lee, 1993; Williams, 1998; Wong, 1996; Woratscheck & Lenox, 2002). In the main they have been descriptive in nature covering curriculum emphasis, often rating skills in order of importance.

Interpersonal skills are viewed by some as just as important as technical skills (Young, 1996; Young & Keen, 1997). IS students need to develop skills and abilities in various "soft" areas including teamwork; creativity and communication; and time management. A capstone course has been proposed to achieve these aims (Gupta & Wachter, 1998). The changing role of the information systems and technology (IS&T) professional and the skills/competencies required for their development in the early 21st century have been identified (Kakabadse & Korac-Kakabadse, 2000).

Determining those skills sought by employers of new IS graduates is important for educators in designing curricula and advising students. Van Slyke et al. (1997) found that specific technical skills were less important than basic

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