Chapter 6.7
Information Systems Education for the 21st Century:
Aligning Curriculum Content and Delivery with the Professional Workplace

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ABSTRACT

In this chapter, we consider how information systems educators might revise curriculum content and adopt student-centered/active learning pedagogical approaches to achieve a better fit between the workplace and the university 'studyplace'. In considering What to Study, numerous research findings suggest a repertoire of 'soft' skills that are seen as essential to success for new IS professionals. The research findings discussed in this chapter present evidence that traditional business subjects such as Marketing, Economics, or Finance do not equate to the 'other' or soft business skills that employers of IS graduates are seeking in new hires. Soft skills are cultivated elements of professionalism that derive from example, reflection, imitation, and refinement of attitudes, personal capabilities, work habits, and interpersonal skills. Soft skills are seldom taught in dedicated subjects in tertiary information systems curricula. Somehow, the soft areas such as teamwork, communication skills, ability to accept direction, and others are expected to be picked up along the way through an unspecified, osmotic process. Turning to How to Study, a critical and contentious issue is determining the appropriate learning environment to best help new graduates develop soft skills and higher order thinking. Course delivery paradigms may be characterized

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as traditional, passive 'teacher-centered learning' and active 'student-centered learning'. We argue that student-centered/active learning approaches may be more effective in helping students to cultivate and refine soft skills than those currently in use. The chapter concludes with a discussion of IS curriculum reform issues and strategies for reducing confusion, overcoming tradition and inertia, finding resources, and neutralizing vested interests, to meet the educational needs of students.

INTRODUCTION

Information systems professionals contribute to the achievement of business and organizational goals through the use of information technology. The information systems profession is team-oriented and project-based.

Students are first and foremost concerned with future employability. Employers, on the other hand, often indicate that they want new graduates who can be immediately productive in their environment.

Are the aspirations of students and employers fundamentally incompatible? How can IS educators help to find a workable and satisfying balance?

In the sections that follow, we will consider how information systems educators might modify curriculum content and pedagogical approach to achieve a better fit between the workplace and the university 'studyplace'.

EDUCATION FOR YESTERDAY'S WORKPLACE: WHY WE MUST RETHINK CURRICULUM CONTENT AND DELIVERY METHODS

The authors began their careers in the 1960s, before the development of the IS profession. As young academics, our students typically studied computing in science faculties, often in mathematics and computer systems engineering departments. Curriculum content consisted of a mixture of mathematics, such as discreet mathematics and numerical analysis, of computer science focused on the properties and (mostly) limitations of the hardware of the day, and first-, second-, and third-generation *high-level* procedural programming languages. We recall students whose professional preparation consisted of the ability to build machines and to program in eight or ten languages, such as machine language, Assembly language, Algol, FORTRAN, and COBOL. After several years service as a journeyman programmer, the more 'people-oriented' programmers became *systems analysts*. Systems analysts were very experienced programmers who had an interest in clients and their needs, who understood the need for information systems to contribute to organizational goals. A great deal has changed, yet tertiary curricula and delivery methods have changed more slowly in content and delivery than the needs of the professional workplace.

Universities have rapidly begun to lose their short-lived and always shaky monopoly on professional entry into information systems careers. A growing number of aspiring young IT professionals are selecting certification by software vendors over university study as a means of preparation and career entry. After one year of focused technical study, followed by an inexpensive, independent examination, many newly certified vendor-trained *solution developers*, *systems administrators*, and *Web site developers* command salaries and working conditions equal to or often superior to new information systems graduates.

The critical question facing information systems educators in the new century is, surely:

How can university information systems courses add enough value to students that they will choose to study in higher education for a full university degree rather than opt for a one-year certification

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