

# Chapter 1.7

## Making the Case for Case-Based Learning in Computer Information Systems

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### **ABSTRACT**

In this chapter, we report the results of a study comparing current student's perceptions of computer information systems with student's perceptions of 12 years past. We found that students continue to prefer more interaction than they perceive an IS career to provide. Given this we (1) report on some programs available in high schools to interest students in a CIS career and (2) discuss case or problem-based learning as a means to provide students with the interaction they desire and show them that it is an integral part of a CIS career.

### **INTRODUCTION**

More than a decade ago, Mawhinney, Callaghan, and Gale (1989) looked at undergraduate business students' perceptions of the information systems (IS) profession and found that their perceptions were inaccurate and narrowly focused. Have such perceptions changed over the intervening years? Have, for example, the World Wide Web and publicity about dot.com companies and millionaires influenced the perception of computer information systems (CIS) careers?

The motivation for the original study was a national decline in IS enrollments in the late 1980s that was adversely affecting staffing in the information systems industry. There is still a need to explore this topic because a decade plus later there is a demonstrated lack of qualified workers. According to the Information Technology Association of America (ITAA) over three-quarters of a million skilled workers are currently needed (Bredin, 2000).

Mawhinney et al. (1989) believed that the decline in enrollments was due to misperceptions about IS on the part of high school students. The popular understanding was that information systems professionals worked in isolation writing computer programs. This perception is partly true if you look at the majority of the entry-level positions for an IS person.

Another reason for a low number of people entering the field may be that this career opportunity is simply not heavily promoted in high schools. A study out of Australia by von Hellens and Nielson (2001) notes that engineering, mathematics, and science receive more press from high schools than IS. They also report, (a) “overall perceptions by both male and female students of the IT degree as difficult and demanding” (p. 46) and (b) perceptions from solely female study participants are that IT people work alone, have little contact with other people and the profession is strongly associated with high math skills. The findings of Mawhinney et al. (1989) were similar. Both the Mawhinney, et al. and the von Hellens and Nielson studies were conducted in the mid to late 1980s, though the later study has collected data through 2000. Statistical data comparing any differences-over-time were not included in the article so it is not clear if perceptions have changed.

There are high school programs that are encouraging young people to explore information systems careers. For example, Wings 21, a successful program (Greensberg, 2000) located

in Omaha, NE, provides long-term exposure to technology and technology careers. This kind of long-term positive exposure to computer technology may be a means to promote accurate information regarding IS jobs as well as alleviate anxiety related to use of technology, particularly computers.

In addition to a lack of understanding related to what an IS worker does in his/her job, the dropout rate within entry-level college IS courses is a problem (Myers, 2001). Many students feel they are computer literate until they enter an IS program. The skills that they possess and the skills needed within an IS degree are likely to be disparate. Rather than a sink or swim attitude on the part of colleges and universities, time spent coaching and encouraging students on relevant computer skills for the IS degree may help them feel confident and able to complete the program (Compeau, 1999). This means more than showing students the benefits of technology or how to use a computer. It may require providing meaningful situations in which to use technology (Venkatesh, 1999).

Using the same questionnaire with minor adaptations for our institution, we revisited the original study by Mawhinney et al. (1985) and looked at perceptions held by current undergraduate business students. In this chapter we describe the study, the results and report ways in which CIS is being promoted in high schools and discuss the merits of authentic learning environments, particularly problem-based learning.

## **METHODOLOGY**

### **Hypotheses**

The first hypothesis tested was the same as the one tested by Mawhinney et al. (1985). It compared the current students' perceptions of IS position

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