Chapter 4.6
Using Mobile Communication Technology in Student Mentoring

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INTRODUCTION

Information technology (IT), computer science, and other related disciplines have become significant both in society and within the field of education. Resulting from the last decades' considerable developments towards a global information society, the demand for a qualified IT workforce has increased. The integration of information technology into the different sectors of every day life is increasing the need for large numbers of IT professionals. Additionally, the need for nearly all workers to have general computing skills suggests possibilities for an individual to face inequality or suffer from displacement in modern society if they lack these skills, further contributing to the digital divide. Thus, the importance of IT education has a greater importance than ever for the whole of society.

Despite the advances and mass adoption of new technologies, IT and computing education continually suffers from low participant numbers, and high dropout and transfer rates. This problem has been somewhat addressed by introducing mentoring programs (von Hellens, Nielsen, Doyle, & Greenhill, 1999) where a student is given a support person, a mentor, who has a similar education background but has graduated and is employed in industry. Although the majority of these programs have been considered successful, it is important to note that it is difficult to easily measure success in this context.

In this article, we introduce a novel approach to mentoring which was adopted as part of an ongoing, traditional-type mentoring program in a large Australian university. The approach involved introducing modern communications technology, specifically mobile phones having

an integrated camera and the capability to make use of multimedia messaging services (MMS). As mobile phones have become an integrated part of our everyday life (with high adoption rates) and are an especially common media of communication among young people, it was expected that the use of the phones could be easily employed to the mentoring program (phones were provided for the participants). Short message service (SMS), for example text messaging, has become a frequently used communication channel (Grinter & Eldridge 2003). In addition to text, photo sharing has also quickly taken off with MMS capable mobile phones becoming more widespread. The ability to exchange photos increases the feeling of presence (Counts & Fellheimer, 2004), and the possibility to send multimedia messages with mobile phones has created a new form of interactive storytelling (Kurvinen, 2003). Cole and Stanton (2003) found the pictorial information exchange as a potential tool for children's collaboration during their activities in story telling, adventure gaming and for field trip tasks.

Encouraged by these experiences, we introduced mobile mentoring as part of a traditional mentoring program, and present the experiences. It is hoped that these experiences can affirm the legitimacy of phone mentoring as a credible approach to mentoring. The positive and negative experiences presented in this article can help to shape the development of future phone mentoring programs.

BACKGROUND

Current education programs relating to information technology continue to suffer from low applicant numbers in relation to the available enrollment positions. In the USA alone, the number of computer science graduates dropped from a high of 50,000 in 1986 to 36,000 in 1994, reported by the Office of Technology Policy in 1998 (von Hellens et al., 1999). Many general IT

degrees also have high dropout rates, particularly in the transition from the first to second year of undergraduate studies. Student statistics also show that university IT degree programs are not attracting the high achieving students, some possible reasons include the low entrance level scores needed to enter the program, the attraction to high-entrance level degree programs such as medicine, law, and psychology and the confusion and uncertainty relating to what a career in IT will entail (ASTEC, 1995).

Misconceptions associated with understanding IT as a field specialized for those with masculine attributes exist and are reinforced by the teachings at secondary school level (Beekhuyzen & Clayton, 2004; Greenhill, von Hellens, Nielsen, & Pringle, 1997), thus often having a negative effect on students, particularly on females. Consistent results have been obtained in studies concerning high school physics, which faces similar difficulties and biased ideas as IT (Häkkilä, Kärkäs, Aksela, Sunnari, & Kylli, 1998). A remarkable number of university students choose their area of study without any preliminary experience in the particular field. With information technology, the students also often have unclear or distorted perceptions of what to expect later in their studies or after graduation, including what kind of employment their area of study can offer (Nielsen, von Hellens, Pringle, & Greenhill, 1999).

Within the IT context, university student mentoring has been introduced to offer students insight into the industry and to employment possibilities enabling them to have them a closer look at the everyday life of working in the field. The aim is to dispel some of the misconceptions associated with what IT work is all about. When entering into this mentoring program, the student is matched with a personal mentor who has a similar educational background and is currently employed in the IT industry. Conventionally, mentoring is carried out with face-to-face meetings, e-mail and telephone conversations between mentor and mentee. In line with many published

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