Support Structures for Women in Information Technology Careers

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ABSTRACT

This paper examines issues of support for women with Information Technology (IT) careers. Data was collected from interviews with 38 women, which lasted about 90 minutes. Questions were open-ended regarding aspects of their careers and career paths. The women represented a wide variety of experience and nine different industry sectors and at varying organizational levels. Research on the lack of women in STEM disciplines focuses mainly on undergraduate education and attracting women to STEM disciplines, focusing on “filling the pipeline.” This paper examines what it takes to have a successful, satisfying career, highlighting areas of support for women that may influence their success in IT careers.

Keywords: Information Technology and Gender, Information Technology Careers, Information Technology Profession, Mentoring Women in Information Technology Careers, Support for Women in Information Technology Careers, Women in Computing

Women are underrepresented in Science, Technology, Engineering, and Mathematics (STEM) disciplines and in Information Technology (IT) careers. Many attribute this to a lack of women seeking degrees in technology-related disciplines, a phenomenon which has been dubbed the ‘pipeline’ problem. The ‘pipeline’ problem, of women not selecting technical majors, is well documented (Blickenstaff, 2005; Camp, 1997; Soe & Yakura, 2008). Mitigation strategies have resulted in changes to IT academic curricula, the establishment of mentoring and role model programs, as well as the development of women’s networking programs to reduce feelings of isolation among women. The assumption is that if IT curricula are more accessible to people without programming backgrounds, more women may be attracted to the discipline (Sloan & Troy, 2008). Courses that are not focused on technology for technologies’ sake, but that take into account the context and implications of technology, may better attract and retain women students (Stiller & LeBlanc, 2003). Mentoring programs and anti-isolation programs help to support women in IT academic and professional careers (Simard, Henderson, Gilmartin, Schiebinger, & Whitney, 2008). However, even with these widely-promulgated efforts to attract and retain women,
the number of women in IT careers is at an all time low.

The Information Technology Association of America reported that in 1996, women made up 41% of the IT workforce. In 2002, the number dropped to 34.9% (Hollis, 2003). An NCWIT report (Ashcraft & Blithe, 2009) indicated that in 1991, 36% of the IT jobs were held by women and that that percentage has steadily declined to 24% in 2008. The NCWIT report also noted that women seem to face a mid-career ‘fight or flight’ moment, in which many of them opt out of the IT profession. This is despite the fact that 74% of them were highly satisfied with their careers.

Many researchers in the areas known as STEM or SET (Science, Engineering, Technology) education have focused on the reasons for the dearth of women in these disciplines, either as students or faculty (Bystydzienski & Bird, 2006). Sappleton and Takruri-Rizk (2008) described the myriad approaches, from many different disciplines, employed to study the problem, and explained that the reasons for the under-representation were very complex. In addition, Guzman, Stam, and Stanton (2008) noted that IT has a distinct occupational culture. Thus, while IT careers are similar to SET or STEM careers, they cannot be assumed to be identical.

In research on women and IT careers, the issue of “opting out” by women who have successfully navigated finding an IT job is an interesting one. Some researchers explained the opting out of IT careers as the decision of women to start families (Armstrong, Riemen-schneider, Allen, & Reid, 2007). Other studies demonstrated that men and women differed little in why they were attracted to IT careers or what factors they valued if they persisted in them (McKinney, Wilson, Brooks, O’Leary-Kelly, & Hardgrave, 2008; Kuhn & Joshi, 2009). In an interview with ComputerWorld (Melymuka, 2005), Dorie Culp explained women’s attrition by saying, “Our research shows that work/life balance is an excuse women give when they leave so they can leave gracefully. But the reality of why they leave is the culture the way it marginalizes women.”

Faulkner (2007) similarly addressed these issues for women in engineering, asserting that it was not the socialization of women that needed to change, but rather the discipline that needed to change so that women are not devalued. In her ethnographic study of engineers in a building design engineering consulting company, Faulkner (2007) described in detail how engineering professional identities and practices conform to (and not conform to) understandings of gender: “Thus, many men engineers cleave to a technicist engineering identity because it feels consistent with versions of masculinity with which they are comfortable” (p. 350). Faulkner (2007) argued that engineering culture can and should change, and that

“Engineering as a profession must find ways to foreground and celebrate heterogeneous understandings of engineering and heterogeneous engineering identities” (p. 351).

Several empirical models examine the motivations of IT professionals. Schein (1990) introduced the concept of career anchors, and identified ten anchors that could describe people’s motivations and decisions in their career choices. IT scholars adopted this model to investigate the issue of motivation for technical work, finding several different and conflicting results. The number of motivators and their importance to IT professionals varied. Crepeau (1992) found that career anchors were independent of each other and that lifestyle and creativity were not relevant to IT professionals. Sumner, Yager, and Frankie (2005) found four relevant career anchors: creativity, autonomy, identity and variety. Attempts to understand the differences through clustering of the anchors created several more taxonomies of career motivators, particularly focusing on what women want (Ferratt, Enss, & Prasad, 2006; Ituma, 2006). Quesenberry and Trauth (2007) examined women in IT careers, and found that women had very different career anchors depending upon their individual context and that over time, women’s career anchors changed. Later studies by Trauth and Quensenberry (2008) examined
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