

The Accidental IT Worker: Women's Informal/Alternative Pathways to IT Jobs By Shauna Butterwick & Kaela Jubas

For the past two years, working in partnership with ACTEW (A Commitment to Community- Based Education and Training for Women)—a Toronto based non-profit umbrella organization, we have been conducting a study of how women without traditional IT credentials in computing science or engineering learn their Information Technology (IT) skills and knowledge and acquire IT related jobs. Although many studies note the very small numbers of women working in IT, at least as programmers and software engineers, women's representation is increasing in IT positions such as project manager and technical communications. In our study we wondered how women acquired their skills through informal and alternative routes, what that learning involved, and whether their skills and knowledge acquired through alternative routes were recognized and rewarded. We were not so much interested in IT learning as we were in focusing on a sector of the labour market where first of all, women were under represented, second of all, it's a sector often identified as gender neutral and third, it's a job that requires constant and rapid upgrading of skills.

We have completed about 75 interviews. Overall our participants were well educated, white and middle class. Most had some kind of undergraduate degree and many had taken a variety of short-term IT training courses. They ranged in age from their early 20s to 60 and overall few had children. We also talked to women participating in a women's only community-based IT training program; one third of the women in this site had children and several thought that employers' expectations of long work hours were not family-friendly. Other participants who were still fairly young wondered how they would continue their IT work if they had children down the road. Many participants described a professional or middle class background. For immigrant women, barriers to transferring international learning and work into the Canadian IT labour market often disrupted this status.

While most participants worked in the private sector, we spoke to some who worked in the public or voluntary sector. Those who reported working in a unionized setting were in public institutions or government offices. A few described themselves as self-employed consultants or contractors, although they often took part-time jobs as employees to earn a living wage. From programmer to librarian, software engineer to secretary, business analyst to marketing manager, professor to director of operations, job titles sometimes reflected and sometimes hid participants' IT work. The few women in our study who had acquired formal IT credentials after high school began their careers in the IT field and stayed there, moving into higher paying, more responsible positions. More often, career pathways looked like a game of "snakes and ladders" with moves sideways and upward, and downward slides occurring during downturns in the IT sector.

In our preliminary analysis, we noted several themes:

1. **Mixed approach:** Learning pathways have typically involved a complex blend of formal (i.e., degree or diploma programs), informal (i.e., short certificate programs), non-formal (e.g., workshops, seminars, networking), on-the-job and independent learning.
2. **Quality of IT training:** Participants had mixed reviews of IT training programs. Several described their learning needs as unpredictable and programs to meet their immediate needs were not always available. Some participants mentioned their dislike for the rigid, formulaic approach taken in the more formal training programs.
3. **Collaborative learning:** Many participants emphasized the importance of team learning and problem-solving, because nobody can have all the necessary knowledge and skill in a sector which changes and grows as rapidly as IT. Some participants described employers' attempts to foster such learning: "lunch and learn" sessions or buddy systems, for example. Many also commented on the importance of so-called "soft skills," such as listening, watching, questioning, interpreting and intuiting, to pull information from colleagues.
4. **Relating to IT:** Several participants spoke of how they "clicked" with computers. Some enjoyed playing around, figuring out how things worked. Others described a combination of excitement and anxiety at being "thrown into the deep end" in the workplace, having to learn without formal training or, sometimes, much support.
5. **Understanding "self":** Working in a male-dominated field taught many participants about themselves: how to be more assertive and fight for recognition and participation in decision-making. Sometimes this learning was problematic, as social backlash was experienced. Several participants noted how good it felt to look back and realize how knowledgeable and skilled they were.
6. **Learning/teaching:** Many participants commented that they share what they learn with others. This helps them cement their learning. Those who were involved in IT training, team leadership or writing IT learning materials often described themselves as "translators" or as a "bridge" between those who develop code and the so-called IT end users.
7. **Lifelong learning:** Participants agreed on the constant need to upgrade their skills. Most found this exhilarating, but for some it was also frustrating and tiring. Some participants dealt with this by specializing and limiting their skill sets. When asked who should be responsible for their learning, most of the participants indicated they felt responsible, with a few referring to their employers.
8. **Barriers to learning:** Lack of time was the most common barrier to learning. The cost of training was also a barrier for some participants, as was social isolation. For self-employed women, every day taken for a training session was a day of lost income.

If you want to find out more about our study, contact Shauna Butterwick at shauna.butterwick@ubc.ca. Other details about our study can be found at www.edst.educ.ca/faculty/butterwick