# Encouraging women to reconsider their choice of computer education course

**Marie K. Hutchinson**
Department of Applied Communication & Tourism
Waikato Institute of Technology
Hamilton, NZ
comkh@wintec.ac.nz

**Dr C. Kay Weaver**
Department of Management Communication
The University of Waikato
Hamilton, NZ

Given the retraction in student numbers in some Information Technology (IT) courses, attention needs to be refocused on two areas: attracting a more diverse range of students and researching the fact that some women, who are quite comfortable with Interactive Communication Technologies (ICTs,) do not consider IT as an as an educational course or career option. This paper investigates how women retraining for work make choices about computing education courses. They are currently one of the largest groups entering tertiary education and some tend to choose Office Technology (OT) courses rather than Information Technology (IT) computing education courses. They still tend to perceive the IT industry as a 'male domain' and are unaware of the range of career options that could be available to them with IT qualifications. Some of these women are still stereotyping in relationship to this technology. This paper does not look to reinforce these stereotypes but to understand what is happening. The findings indicate that factors involved in *not* choosing IT courses and qualifications for these women included a lack of knowledge about IT courses, perceived male domination of the IT industry, lack of confidence, and traditional gendered perceptions of appropriate roles and careers for women.

## Keywords

Women retraining for the workforce, ICTs, career choices, computing education.

## 1. INTRODUCTION

In New Zealand tertiary education, as is the case in many other national contexts, more men than women are choosing to study IT. There is currently one 'kiwi' female school leaver and two International females studying in the first year BIT degree at Wintec. When this study was carried out only 25% of the respondents studying for any IT qualification at Wintec were women. In spite of many intervention programmes over the years, women's participation rate in such courses has not improved overwhelmingly. This compares unfavourably with current trends with other disciplines including law and medicine where women can now outnumber men in enrolments. Along side this some IT courses could become unviable if the student numbers continue to go down and rely on the fickle International market.

With a current government policy to encourage beneficiaries to return to or retrain for the work force, changing roles for women and a need to be competitive in the workforce, many women are choosing to gain or enhance their computer skills. However they are generally choosing computer-application courses, that is, Office Technology (OT) rather than IT courses as a means of enhancing their employment potential. Therefore an understanding of their motivation for study, and dismissing some of their preconceptions about IT, could encourage women to broaden their horizons and look beyond the traditional office skills careers.

## 2. LITERATURE REVIEW

### 2.1 Lack of women in information technology education and careers

A recurring concern in the literature including Leathwood, (1999); Selby Young & Fisher, (1997) and Trauth, (2002) is that the numbers of women entering IT courses have been declining for the last twenty years. This is of concern because some of the fastest growing job categories are computer related and have the highest average pay rates.

One explanation for differences between female and male participation in computer-related courses has been in the general social conditioning and stereotyping of females and males. As there has been more of a focus on the technical aspects of computing (as opposed to the practical uses) males have been more drawn to the field (Freedman 1997). Henwood *et al.* (2000) found that there were some

strong negative perceptions regarding women's suitability to be programmers by the male respondents in their study.

### 2.3 Women's study of computers

Some women clearly have no problem enrolling in programmes that involve aspects of computer technology, and recognise that to be competitive in the workplace they need computer skills (Durndell & Thompson, 1997).

There is also evidence (Siann, 1997 cited in Leathwood, 1999) that women may choose some computing courses when they are offered in combination with other disciplines that emphasise social issues and computer applications. This suggests that using computers to learn, as opposed to learning about computers, may be less gendered. This could account for the numbers entering office technology-type courses rather than IT ones. One of the other issues is that women have tended to underestimate their skills in relation to males' perceived skills in spite of the fact that they have proved themselves able to learn computing and IT (Henwood et al. 2000).

We need then to look at some of the social structures in the IT industry and courses before we can expect changes. In the meantime it is useful to examine the views of women retraining for the workforce to ascertain their motivations for study and identify some reasons why they did not choose an IT course.

## 3. METHOD

Questionnaires were completed by 170 IT and OT students studying at Wintec, Hamilton. This included 38 Likert-type scale questions asking students about their views on and uses of computers. Forty female OT students then completed a further survey questionnaire or participated in a focus group session. Questions focused on their motivation for study, perceptions of advantages and disadvantages for them as women studying computers and consideration of another technology course and what stopped them if they had considered it.

## 4. RESULTS

### 4.1 Demographics

Of the 92 students studying all qualifications in IT, 4% (n=4) were school leaver females and 21% (n=19) were non school leaver females. This contrasts with 30% (n=23) female school leavers and 68% (n=53) non school leaver females studying OT from a total of 78 students. Forty one percent (n=21) were over the age of thirty years.

### 4.2 Uses and views on computers

From the 38 Likert-style questions on all students' uses and views on computers for 65% (n=25) of the responses there were no significant statistical differences between groups. The main differences were in the non school leaver female's lower self rating of computer knowledge before starting a course, perceived lack of competence and nervousness in using a computer.

### 4.3 Consideration of another technology course

Over half of the OT respondents had considered taking another technology course. Their own lack of confidence, knowledge about IT and skills as well as perceived age and gender precluded any further consideration. Responses included "IT being too competitive a field" and "We think of it as a man's domain, we are not so mechanically minded." This result is also consistent with studies by Henwood et al. (2000) and by Selby, Young and Fisher (1997). This means that these respondents were studying courses that they knew about, were comfortable with, and of course are traditional for women. Therefore gender differences continue to be a factor.

### 4.5 Attitudes to do with gender

In terms of the advantage for women in studying computers, many responses related to work. "Better jobs using up to date technology," "Work is out there for women with computer literacy," and "I think that everyone should study computers as without this knowledge they will be ignored and gradually pushed out of the workforce." Fourteen percent (n=5) of the advantages related to gender issues, including: "You are now competing in a males once dominated field," "We can have a monopoly," and "More office jobs available for women." The perception is therefore that males no longer dominate the field and that women still work in offices. Two respondents felt the advantages were helpful to their family in terms of being able pass on their knowledge to their family. There was a perception that women were more adaptable and good at multitasking compared with men. One concern was

that: "The only disadvantages I've seen … are that women may become too career minded and less family oriented." One respondent did feel that males could: "frown upon them as inferior," and another one thought: "that men are in control." What is apparent is that, for some of these women, some old stereotypes persist about the role of women in terms of their place within their families, having a 'job' rather than a 'career,' and the perception of males being in a position of superiority. Choices regarding careers are being made on the basis of these stereotypes.

# 5. CONCLUSION

There is still a gender difference when it comes to women choosing their ICT courses. Women are still flocking to traditional office training and are not considering a career in IT as an attractive career option, which may offer them more of a career in terms of financial rewards and status. Many interventions have been tried over the years to overcome this imbalance with limited success. Many women are quite happy and prepared to study computers and work with them in conjunction with their other roles but do not seem prepared to look more widely for a job. Given a general lack of knowledge about the range of career options by these women within the IT industry this is not surprising.

It also appeared that because of socialisation (Trauth, 2002) it was acceptable to get a 'job' and be supportive to one's family but not to get a 'career' with the implication that the family's needs would come second. Studying OT allowed for 'getting a job in an office', given it was a traditional female occupation. The IT industry appeared to be seen more in terms of a 'career', which could conceivably undermine the family, without respondents looking at the long-term benefits to both themselves and their families. These benefits could include providing positive role models for their children in terms of study, increased financial rewards, increased autonomy in a job, being at the forefront of technology rather than as a user of it. Given the expectation that most women will want a 'job' to support their families or themselves, and that the retirement age is more likely to go up rather than down, maybe women need to start looking at their work in terms of a 'career' rather than a 'job' An IT computer education course could provide that.

## 5.1 Recommendations



1. That students' horizons be broadened and they be introduced to the wide range of career options