Females on Technology Courses in UK Colleges

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INTRODUCTION

This article reports the findings of a funded research project carried out in two further education (FE) colleges in the North West of England. The under-representation of women in the technology sector has been the focus of various initiatives in the United Kingdom (UK) over the last 30 years, and FE, with its emphasis on vocational and practical skills, could be seen as an effective route to redress this imbalance. However, data from colleges continues to show that student females are also under-represented on technology courses in the sector. The project is seeking to gain a greater understanding of the experiences of young women on a number of technology courses where the majority of students are male. The outcomes of the research are intended to inform the FE colleges' developing strategies on how to improve the recruitment and retention of females, so helping to redress the gender imbalance on the technology courses in the study.

Research studies of this nature are rare in the FE sector, as it is largely a neglected field of study for educational research in gender and technology. In this project, we provide a forum in which the experiences of the female students in the sector can be discussed. The research focuses on the young women who "have arrived" and are currently studying technology subjects in the colleges. We report that gendered notions of technology courses still prevail and these have an impact on the choice of course, progression to technology industries and issues of confidence with technology. Overall, we highlight some of the issues that make the female students' experience of occupying "male spaces" an uncomfortable one.

BACKGROUND TO THE STUDY

This research is based on the experiences of women in business and creative technology courses in two large general FE colleges in the North West of England. The FE sector in the UK provides education and vocational training for the post-16 age group. It is the largest sector in UK education, with more than 6 million learners, and is seen as "the engine room for skills" of the UK workforce (LSC, 2005, p. i). The emphasis is on vocational study, and its population includes both 16-19 year-old learners and adult learners as part of the UK government strategy of lifelong learning.

In this article, we report on the positive choices to study technology courses made by the young and mature women who participated in our study and their subsequent experiences. The study has investigated the rationale for our students' choice of subject as well as their future career aspirations, their confidence with technology and their experiences of studying in a field that has a "dominant masculine culture and how these factors influence their participation and progression in that field.

Theoretical Framework

The context of this research lies in the well-documented under-representation of girls and women in the field of IT education generally. Evidence shows that in spite of repeated initiatives to encourage women into technology, males dominate the use of technologies in all areas of society (Benn, 2004; EOC, 2004; DfEE, 2001; Connolly & Hellawell, 2001; Wilkinson, 2001). Despite a growing trend of women's increasing participation to higher educa-

tion in the last 10 years, in 2001, only 21% of undergraduates taking a first degree in computing, engineering or technology subject areas in the UK were women. While the UK government is launching new initiatives to attract more women to information technology industries, occupational segregation prevails in many areas associated with technology (EOC, 2004). The Equal Opportunities Commission (EOC, 2004) recently reported that the current proportion of women working in information and communication technologies (ICT) occupations is 15%, and in the spring of 2003, 151,000 women were working in ICT occupations, compared with 834,000 men. Continued occupational segregation restricts the pool of likely candidates and damages Britain's competitiveness as it continues to contribute to skills shortages (EOC, 2004).

Social studies of the relationship between gender and technology are well developed and demonstrate the complexities of researching in this area. Researchers adopt several theoretical and methodological positions. Some provide evidence that technology is not gender-neutral (Cockburn, 1985; Wajcman, 1991, 2004; Woodfield, 2000). Others argue that the dominant discourses around the use and implementation of ICTs are masculine (Clegg & Trayhurn, 1999; Clegg 2001; Grundy 2003), and that "computers, like cars and other forms of hardware, constitute a naturalised part of male heterosexual identity" (Clegg, 2001, p.314). No matter which way we interpret the findings, the situation remains less than optimistic and, as Wajcman points out, "the connection between masculinity and technology, reflected in women's under representation, is still pervasive" (Wajcman, 2004).

Existing research tends to concentrate on females in higher education, but it is clear (Ball, Davies, David & Reay, 2003; David, Ball, Davies & Reay, 2003) that gendered notions are formed earlier than this, and this limits the numbers of females applying to technology courses. Students from FE colleges make up a significant percentage of applicants to university courses, and it is therefore important to explore the rationale for students' choice of subject and their future career aspirations. Furthermore, we want to explore how issues of confidence with technology and the experiences of studying in a field that has a "dominant masculine culture" affected those career aspirations.

THE CASE STUDY

Table 1 lists the selected courses and student numbers by gender for the years 2002-2003 and 2003-2004. More information about the courses can be found in the Terms section.

The table shows that the gender imbalance persists to higher and lesser degrees depending on the course and the focus on technology; it would appear that where there is a greater emphasis on technology on the course, there are fewer female students.

Table 1. Enrolments on technology courses

Course name	Level	% Female students 2003-04	Total students 2003-04	Females 2003-04	% Female students 2002-03	Total students 2002-03	Females 2002-03
College 1							
ICT GNVQ Foundation *	1	31%	39	12	20%	41	8
ICT GNVQ Intermediate *	2	21%	48	10	17%	35	6
ICT AVCE *	3	22%	50	11	13%	52	7
ND ICT Practitioners *	3	0%	29	0	0%	31	0
College 2							
HND Music & New Media	3	56%	36	20	69%	35	24
ND Music Technology	3	21%	72	15	22%	64	14
ND Media	3	55%	64	35	47%	62	29
ND for IT Practitioners*	3	17%	23	4	26%	31	8
AVCE ICT *	3	27%	11	3	17%	23	4