Chapter 14
Reassembling the Problem of the Under-Representation of Girls in IT Courses

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ABSTRACT

The percentages of girls in developing countries undertaking information technology subjects in the post-compulsory years of education has remained persistently low: often under 25%. This is despite the fact that this particular phenomenon has been the subject of sustained international enquiry for at least three decades. This article investigates data collected during an Australian Research Council Linkage Grant project (2005-2007) that aimed to identify some of the contemporary reasons for this under-representation in Australian schools. The original phases of data collection proceeded from the belief that there was a clear and agreed understanding that the low numbers of girls was a problem worthy of analysis. As the project evolved, however, significant differences between the researchers’ perception of the under-representation and the participants’ views about the same issue. In this paper we make use of actor-network theory to ask key questions about the extent to which the enrolment of girls in IT is indeed ‘a problem’.

INTRODUCTION

The percentages of girls in Australian schools who elect to enrol in post compulsory information communication and computing technologies units has barely changed over the past twenty years hovering consistently around (and often below) 25% (James, et al., 2004). Analysis of this statistic (and its persistence) has often focused on such factors as the impact this under representation has upon the total numbers of students studying information technology or related courses at university (hereafter referred to as IT); the looming personnel shortages in information technology professions (Wentling & Thomas, 2004); the implications that opting out of IT as an area of study has on girls’ future career paths, including the potential to reduce their chances of employ-
Reassembling the Problem of the Under-Representation of Girls in IT Courses

ment within lucrative and “in demand” industries, and, indeed, curtailing their ability to contribute to the construction of the kinds of technologically mediated futures that impact upon their lives into the short and long term future (Wajcman, 1991).

Despite the fact that these various versions of “a problem with girls and IT” have received a reasonable amount of attention from researchers and industry professionals over the past twenty years, during this time there has been little impact upon the numbers of girls following the pathway to tertiary study of information technology. Indeed, the numbers of girls studying IT in schools are actually trending down (AAUW, 2000; James et al., 2004).

In response to this complex set of factors a range of researchers and industry partners from NSW, South Australia and Victoria designed a mixed-method project intended to identify the processes that lead to this gender gap and possible ways in which the situation could be challenged. The project was titled: From High School to Higher Education: Gendered pathways in information communication and computer technology education and ultimately received funding through the Australian Research Council (ARC) Linkage Project scheme. The project aimed to:

- identify the educational pathways and career outcomes for males and females in IT fields;
- ascertain why the proportion of girls who enter education pathways leading to IT careers is so small;
- identify strategies that might lead increased numbers of girls to qualify for, choose, and enter IT courses at the higher education level.

Over the three year period, the research team collected data from across 28 schools and more than 1400 students. As a result of the themes found within questionnaires, focus groups and interviews, the research team identified a range of factors that influenced girls’ and boys’ subject selections, and the reasons why they would choose or reject post-compulsory IT pathways. In response to this data the team put forward a number of recommendations discussed in detail elsewhere (see Lynch, 2007) but summarised briefly here:

- Provide more accurate and timely career advice and subject information, to counter common misconceptions This includes differentiating between the different kinds of IT career pathways
- Emphasise the relevance of senior IT subjects to university studies in software engineering and information technology.
- Use learning activities that align with work practices in IT industries and that make links with the local community. Make particular use of group based learning, project learning, and ‘real world’ tasks.
- Make use of new leisure and lifestyle technologies to help break down the divide between everyday technologies and IT studies.
- Recognise that many students will achieve high levels of computer literacy at home and will need a more challenging IT program if their interest in the IT field is to be sustained.
- Affirm girl’s interest and competence in difficult technical tasks; affirm boys’ interest and competence in communication and design activities; and, affirm the behaviours and attitudes of girls who express an interest in computing technology.
- Provide opportunities for commonly held notions about gender and IT to be aired, debated and challenged.

This list of recommendations—like many formal documents—points to some of the key issues to emerge from the project and offers important advice to practitioners, curriculum developers and, indeed, those working in teacher education.