

## **Women in Science, Engineering and Technology: researching the arena of activity**

The focus of this thesis is the arena of activity around the issue of women's under-representation in science, engineering and technology (SET) in the UK. This arena has been expanding since the emergence of the 'education feminisms' (Arnot et al., 1999) of the 1970s, and now consists of a disparate collection of policies, activist groups and educational projects. These are linked to similar forms of activity in mainland Europe and North America. This thesis reports on a sociological study using a raft of theoretical tools to conceptualise this diverse arena. Bourdieu's theories provided a framework to conceptualise the arena as a *field*. Foucauldian notions of discourse facilitated an exploration of its languages and practices. Bernstein's concepts were used for microanalysis of the pedagogic interventions.

The research was qualitative and conducted using documentary analysis, interviews, observation and open-ended survey questions. The research design moved from macro- to micro-levels. The first stage involved constructing a conceptual history of the field and mapping its current form. A literature review was conducted, and 280 activists and co-ordinators of educational projects took part in two international web surveys. The second stage was concerned with the structural shapings of the field and the discourses deployed within it. Interviews were conducted with 21 policy-makers and activists in the UK, mainland Europe, and North America. The third stage focused on two educational projects in England. The first project aimed to give schoolgirls a 'hands-on' experience of science and technology, and the second was a training programme in construction and technology skills for women. The microanalysis focused on the pedagogic models of the projects, and the perspectives of their female participants concerning their impact.

The past thirty years' efforts to include women in SET have not been particularly successful. (Gilbert, 2001, Institute for Employment Research, 2003). Previous research has focused mainly on the *reasons* for women's under-representation, and there has been little analysis of the field of activity itself. This suggests it is necessary to look critically at its structural, discursive, and pedagogic shapings. This thesis identified a newly emergent state sector in the field, and a powerful economic discourse linked to globalisation and the 'elision of education with economic policy.' (Henry, 2001, p. 89). This economic agenda, and the liberal feminist discourse of 'equal opportunities,' are the current 'regimes of truth' (Foucault, 1977) in the field. However, these discourses *reiterate* the gendered binaries that have been used to keep women out of SET. The 'circle of reproduction' (Crossley, 2003) in the field, in which state influence interacts with a 'reformist habitus,' inhibits the emergence of more radical frameworks. One of the educational projects examined for this thesis was a *relatively* radical model, and the overwhelmingly positive reactions of its participants suggest that it warrants further study. However, it is arguable that feminist poststructural pedagogic perspectives which recommend that gender/SET relations should be examined as *part* of the curriculum need to be incorporated in order for projects in the field to be transformative.