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Breaking Down Barriers: Teenage Girls' Perceptions of Engineering as a Study and Career Choice

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B **ackground:** Stereotypically perceived to be an 'all male' occupation, engineering has for many years failed to attract high numbers of young women [1,2]. The reasons for this are varied, but tend to focus on misconceptions of the profession as being more suitable for men. In seeking to investigate this issue a participatory research approach was adopted [3] in which two 17 year-old female high school students interviewed twenty high school girls. Questions focused on the girls' perceptions of engineering as a study and career choice. The findings were recorded and analysed using qualitative techniques. The study identified three distinctive 'influences' as being pivotal to girls' perceptions of engineering; pedagogical; social; and, familial.

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Pedagogical Influences: Pedagogical influences tended to focus on science and maths. In discussing science, the majority of the girls identified biology and chemistry as more ‘realistic’ whilst physics was perceived to more suitable for boys. The personality of the teacher, and how a particular subject is taught, proved to be important influences shaping opinions.

Social Influences: Societal influences were reflected in the girls’ career choice with the majority considering medical or social science related careers. Although all of the girls believed engineering to be ‘male dominated’, none believed that a woman should not be engineer.

Familial Influences: Parental influence was identified as key to career and study choice; only two of the girls had discussed engineering with their parents of which only one was being actively encouraged to pursue a career in engineering.

Discussion: The study found that one of the most significant barriers to engineering is a lack of awareness. Engineering did not register in the girls’ lives, it was not taught in school, and only one had met a female engineer. Building on the study findings, the discussion considers how engineering could be made more attractive to young women. Whilst misconceptions about what an engineer is need to be addressed, other more fundamental pedagogical barriers, such as the need to make physics more attractive to girls and the need to develop the curriculum so as to meet the learning needs of 21st Century students are discussed.

By drawing attention to the issues around gender and the barriers to engineering, this paper contributes to current debates in this area – in doing so it provides food for thought about policy and practice in engineering and engineering education. ■

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