

Women in Engineering survey 2009

Introduction

Two separate surveys have been conducted over the past week by the UK Resource Centre for Women in Science, Engineering and Technology (UKRC) in partnership with engineering staffing specialist EPCglobal and research company iCD Research.

It is the UKRC's belief that involving a greater number of women in these fields (science, engineering, technology and the built environment) will help alleviate the skills shortages reported by employers, ensure the fields' outputs better reflect society's needs and provide more women with fulfilling and well remunerated work, for their benefit and the benefit of the economy more generally.

Survey 1 is a repeat of 2006 research into attitudes around women in engineering, to establish whether any of the hard work invested by many organisations and individuals in ensuring women enter (and flourish in) this sector is bearing fruit in terms of changed attitudes and practices. It shows what the UKRC regards as advances in most of the key areas covered. Survey 2, which questions young students, the 2030 generation, about their interest in science, engineering and technology is overleaf.

Survey 1

Respondents:

- 2006: 2,191 engineers from every field responded from around the world. 700 were British, 28% women.
- 2009: 334 responded, about half from the UK and a third women.

Are women under-represented in engineering?

79% of respondents globally believe that women are under-represented, this remains static from 2006. However, 88% of British engineers believe that they are, an increase of 2% since 2006. (Only one third of respondents know the rough percentage of women in the profession (c.10%).)

Does it matter if women form such a small proportion of engineers?

The same majority as 2006, of 62%, thinks it does matter.

What is the most significant form of support that should be given to women who are in engineering?

The number believing nothing should be done has dropped from 18% to 14%. Non-discriminatory company practices and policies still come top for all engineers surveyed (38%). 27% of respondents now feel that flexible working should be provided, a jump from 19% in 2006. This is perhaps as a result of new legislation planned for introduction in the UK recently.

Womens' performance as engineers.

Whilst the proportion of respondents who think women can do as good a job as men has increased since 2006 (to 74% from 70%), it still remains that more than one quarter of engineers hold the opposite opinion of women in the sector.

Are workplaces gender diverse?

29% of UK-headquartered engineering employers are regarded by their employees to have a gender-diverse workforce at all levels, an improvement of 2% since 2006. Significantly perhaps, a smaller proportion of male respondents now believe this (29% in 2009 vs 34% in 2006) and a larger proportion of female respondents believe this (23% in 2009, up from 20%). A consensus may now be emerging as to what constitutes a gender diverse workforce, but the issue remains that three quarters of firms are still seen to be male-dominated.

Do employers actively take steps (concrete policies and practices) to encourage women to apply to and progress within your organisation?

In terms of action, 2009's engineer respondents are marginally less inclined to report such steps (59% vs. 60%).



If there are fewer women entering the sector than men, what is the most significant factor / barrier to entry?*

82% believe there are barriers of some sort, comprising three main factors:

- 1) Factors related to nature of the sector - 36% (this includes the image it projects of itself, its workplace culture, the prospect of working in a male-dominated environment, lack of role models and lack of flexible working)
- 2) Education-based factors - 28% (ambient culture reinforcing a stereotypical choice of subjects, teachers and careers advisors not understanding opportunities for girls in SET and male oriented-teaching of SET subjects)
- 3) Finally, societal factors - 19%.

*No direct comparisons are available to last year due to a small change in configuration of the survey.

Survey 2

Survey 2 questioned young students, the 2030 generation, about their interest in science, engineering and technology. It shows a large disparity between a strong desire to work in science and subsequent subject choice amongst children. It also picks up an early difference in enthusiasm levels between boys and girls.

Respondents:

107 children (and 1,000 adults for comparison, to rate changes in attitude to science). The children, sourced via the UKRC's partners in educational establishments, range in age from 7 to 17, with 82% at ages 11 and 12, and 64% of respondents were male.

Highlights:

There is a great desire amongst both girls and boys to work in SET to help tackle some of humanity's greatest challenges (61% and 68% respectively would like to do so). They are also twice as optimistic as adults about humanity's prospects of solving some of these challenges using SET. This desire and optimism needs to be channelled into their subject choice.

Nevertheless, SET is seen as inherently less interesting than other careers by twice as many girls as boys (33% vs 17%), so what might increase its appeal for them?

- Science and maths lessons which are more fun, practical or relevant - 61%.
- Proper career guidance about what a job in science involves and how to get one (47%). Interestingly, 50% of girls and 38% of boys claim to have received this from their school, showing that it is certainly only one influence on subject and career choice. Further, only 27% of adults said they received it from school, hopefully meaning it is now being taken more seriously by schools
- More encouragement by parents/guardians - 44%.
- Greater acceptability by peers of the subjects which you need to study - 39%.
- A tour of a relevant organisation - 36%.
- A talk given by a scientist/engineer - 36%.

Clearly, factors affecting subject and career choice differ in their effect on young women and young men, pointing to a need for a more nuanced approach. A major study by King's College London has just commenced and aims to uncover those factors and their relative weights.

Comments

"It is a step in the right direction that the proportion of female engineering graduates in the UK has doubled since 1984¹. We are calling on everyone involved, all employers, policy makers and organisations within engineering, to increase the pace of change so that all can enjoy the financial and productivity benefits of a more diverse workforce."

(Annette Williams, Director of the UKRC)

1. WISE Campaign

"The CBI said in 2007 that the UK will need to double the proportion of science and engineering graduates leaving university by 2014 or see skilled jobs go overseas. Its target is not being met: The Association of Graduate recruiters expects an 8.3% rise in engineering jobs for graduates this year, but there will likely be a shortfall. It's clear that more needs to be done to alleviate skills shortages and the best long term approach is to focus efforts on tapping the early enthusiasm of the next generation, especially girls and young women"

(Russell Dalglish, Managing Director of EPCglobal)

Find the results at www.epcglobal.co.uk or www.ukrc4setwomen.org after March 12th.

With thanks to respondents belonging to the UKRC, the Society of Operations Engineers, the Nuclear Institute, the Institute of Engineering Designers, Generation4Collaboration & WISE.

