

THE INSTITUTION OF ENGINEERS OF IRELAND



**THE GENDER GAP IN ENGINEERING**

**OUTCOME OF NOVEMBER 22<sup>ND</sup> 2002 CONFERENCE**

SUBMISSION TO

**MR NOEL DEMPSEY TD  
MINISTER FOR EDUCATION & SCIENCE**

December 2002



## ISSUES RAISED AT CONFERENCE OF 22<sup>ND</sup> NOVEMBER 2002:

### Opening Address – Sile De Valera TD - Minister of State, Department of Education & Science:

- The Report of the Task Force for the Physical Sciences highlighted a decline in interest in the physical sciences generally and the disproportionately low percentage of females taking physical science subjects at second level which contributes to fewer females than males being available to pursue engineering as a career.
- The Minister confirmed the continuing commitment of the Gender Equality Unit of the Department of Education & Science to work closely with the IEI in addressing the under representation of females in Engineering, Science and Technology (SET).
- Government's commitment to the new science curriculum in primary schools was confirmed.
- With a decrease in the numbers applying for SET courses and the level of non-completion of these courses, there is need for more initiatives like STEPS.
- The Minister commended the achievements of the STEPS Programme and pledged the Department's strong support and financial backing, in association with Forfas, for the STEPS Programme.

### SESSION 1 – SPEAKERS:

#### Women in Engineering - Facts & Perceptions

Sean McDonagh - Director Skills Initiative Unit, Department of Education & Science

#### Women in Engineering - The Experiences

Orla Mooney - IC Design Engineer, Analog Devices

#### Women in Industry - Issues on Recruitment & Progression

Darina Kneafsney - Senior Engineering Manager, Intel

### KEY ISSUES RAISED:

- Are we making the best use of statistics to identify the specific problems, and thus the actions required to address these problems? Are the statistics available sufficient?
- The issue of Apprenticeships needs to be addressed: -
  - ⇒ Recognition that progression is possible from craft through to certificate, diploma and even to degree level.
  - ⇒ Need to Identify and highlight the routes available to girls and the apprenticeship options. Apprenticeships are currently male dominated and therefore may not be perceived by girls as a possible career path option.
- There is a need to identify and actively promote female role model engineers.

- The perception that honours mathematics is a requirement for entry into the SET professions needs to be addressed. There is a need to inform students, and in particular girls who may not have an opportunity to pursue higher level mathematics that a certificate, a diploma, and even a degree can be obtained with pass level mathematics at Leaving Certificate level.
- The overall approach to mathematics at both primary and secondary levels needs to be addressed in order to get more girls to take an interest in mathematics from an early age.

## **SESSION 2 – SPEAKERS:**

### **Women in Engineering & Science – The Second Level Challenge**

Maureen Bohan – Senior Civil Servant, Gender Equality Unit, Department of Education & Science

### **Actively Promoting Women in Engineering**

Ita McGuigan – Project Manager, STEPS Programme, The Institution of Engineers of Ireland

### **Women in Engineering – the EU and UK Experiences**

Jackie Longworth – Past President, Women in Engineering Society (WES) UK

## **KEY ISSUES RAISED:**

- Those promoting engineering as a career need to work closely with parents who are a key opinion-forming group.
- The experiences that DIT have had with the “preliminary bridging programme” between 2<sup>nd</sup> and 3<sup>rd</sup> level should be assessed – it is a fact that those who progress from such programmes often make the best engineers. There is a strong need for more Government funding and support for such programmes.
- It is essential to implement the new science curriculum at primary level.
- The misconception that science is difficult needs to be addressed at a young age and emphasis placed on the fact that it leads to exciting, challenging and rewarding career options.
- The STEPS Programme should be extended to include primary schools. Additional funding will be required to do this.
- The UK experience is that girls outperform boys in SET at O Level and yet not as many girls pursue SET at A Level. There is a need to review if this is the case in Ireland and if so, to take remedial action.

- The UK also have a problem with mathematics in that only half of those who pursue honours mathematics at junior cycle continue to pursue it into senior cycle. A similar problem in Ireland needs to be addressed.
- There is need for more research on the impact of work experience and initiatives such as the STEPS School-Industry Partnership Scheme on student's career choices.
- There is a need to examine where work experience takes females to ascertain if girls only get the opportunity to follow the more traditional roles, therefore excluding engineering as a possible career option?
- The lack of confidence that girls seem to have in technical fields needs to be addressed – more “hands on” experience at an earlier age would be beneficial.
- The perception that honours mathematics is a “difficult option” needs to be addressed.
- Initiatives in other countries e.g. WISE and SETPOINTS in the UK, should be carefully studied.

### **SESSION 3 – SPEAKERS:**

#### **Mentorlink – Advancing Women in Engineering**

Lucy McAuley – Senior Lecturer, Tallaght IT

#### **Networking and Mentoring of Women in SET**

Dr Joan Mason – Chair, Association of Women in Science & Technology, UK

#### **WITS Role Model Project**

Caitriona Lambert – Secretary, Women in Technology & Science (WITS)

### **KEY ISSUES RAISED:**

- The benefits of female role models, mentoring and networking for female engineers were highlighted. There is need for the Department of Education & Science to get more involved in supporting work in this area.
- Need to highlight to females the lifestyle benefits of pursuing a career in SET.
- There is a need to make the traditionally male dominated SET third level courses more attractive to females.
- Second level classroom resources in the SET area need to be improved dramatically.
- The issue of childcare for women working in SET needs to be addressed.
- More communication and linkage between STEPS, Mentorlink, WITS etc. would be beneficial.

- An Act of Congress was passed in the US to monitor and implement actions to redress the problem of the shortage of women in SET. The increasing role the EU is playing in addressing the problem was highlighted. This raises the question of whether the promotion of SET should be put on a more formal, even statutory, basis in Ireland.
- Need to expand the role of The Institution of Engineers of Ireland (IEI) and increase its visibility within the engineering profession and encourage more IEI female membership.
- Promotion of SET at transition year may be too late - there is need to address primary and junior cycle students.
- “Waiting for equality will not work” and continued action is needed now.
- The problem of barriers to subject choice for physical science subjects was highlighted and the need to rename subjects e.g. metalwork to engineering.
- The shortage of teachers in the technology areas needs to be addressed urgently.

