

Chairperson: Dr Kevin McGuigan

Please reply to:
Dr. Sheila Gilheany
Policy Officer
Institute of Physics in Ireland
School of Physics
University College Dublin
Belfield, Dublin 4
T: +353 86 2600903
E: sheila.gilheany@iop.org

Ms Cathie White, Committee Clerk,
Room 416, Parliament Buildings,
Ballymiscaw, Stormont,
Belfast, BT4 3XX.

23rd August 2012

Re: Inquiry into Careers Education, Information, Advice and Guidance (CEIAG) in Northern Ireland

Dear Ms White,

The Institute of Physics in Ireland welcomes the opportunity to submit a response to the Committee for Employment and Learning inquiry into Careers Education.

The Institute of Physics in Ireland is a scientific membership organisation devoted to increasing the understanding and application of physics in Northern Ireland and the Republic of Ireland. It has over 2000 members, and is part of the Institute of Physics.

The Institute of Physics has a world-wide membership of over 40,000 and is a leading communicator of physics-related science to all audiences, from specialists through to government and the general public. Its publishing company, IOP Publishing, is a world leader in scientific publishing and the electronic dissemination of physics.

This submission was prepared in consultation with the IOP in Ireland's governing committee, with input from members of the Institute members in schools, third level education and industry.

The attached document highlights key issues of concern to the Institute.

If you require any further information or clarification, please do not hesitate to contact the Institute at the above address.

Yours sincerely,



Dr. Kevin McGuigan
Chairperson
Institute of Physics in Ireland

Inquiry into Careers Education, Information, Advice and Guidance (CEIAG) in Northern Ireland

Written Evidence to the Committee for Employment and Learning given by the Institute of Physics in Ireland

Organisation providing Evidence

The Institute of Physics in Ireland is a scientific membership organisation devoted to increasing the understanding and application of physics in Northern Ireland and the Republic of Ireland. It has over 2000 members, and is part of the Institute of Physics (IOP).

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This evidence has been prepared in consultation with its members and with input from individuals in teaching, industry and academia. Our area of expertise and interest relates to the provision of careers advice in the area of physics, in particular, and science/engineering in general and this is reflected in the evidence provided below.

The evidence provided has been grouped under the headings requested by the Inquiry's terms of reference.

Summary of Evidence

The Institute of Physics in Ireland considers it essential that all schools should have an integrated approach to the delivery of science career information. This should be delivered both by careers teachers and science subject teachers. There should be particular emphasis on ensuring students have access to accurate, timely information on science career options, particularly at key decision times during their education so that options are not closed off inadvertently. Girls especially need encouragement to consider their options in science, so particular attention should be paid to access to suitable role models.

Provision and access to labour market information is a key requirement for all involved in careers education. As a professional body with access to working physicists at various stages in their careers, the Institute of Physics in Ireland is very happy to work with the various statutory bodies to assist with the collections and dissemination of such information.

Given the rapid changes in this area, ongoing professional development is essential for all involved in the provision of careers education.

Provision of CEIAG delivery in primary and post primary schools, further education and higher education– may include consideration of the role of CEIAG in the Curriculum, delivery of CEIAG resources available to deliver CEIAG via the education system and methods which may improve delivery;

The Institute of Physics in Ireland recognizes and welcomes that in recent years there have been significant efforts to promote careers in areas related to Science, Technology, Engineering and Maths (STEM). It is imperative that this momentum is maintained and strengthened as, more than ever, young people need clear information about the nature of the economy in Northern Ireland and the likelihood that future jobs will be clustered around high-tech industry. It is particularly important that such careers advice is made available very early in their education, so that they are not cut off from STEM options by making an ill-informed decision to drop the physical sciences early or indeed, not even have access to the subject.

Primary schools

Even at primary school level it is important that students and their parents should be aware of the importance of access to STEM education, particularly when it comes to making choices about post-primary schools. Key questions that parents need to ask about any post-primary school should include:

What is the provision for physics teaching in the school?

Is physics offered at A-Level?

How many girls are taking physics at the school?

Such information is particularly important with the ongoing changes in Northern Ireland in relation to school transfer procedures. At present over 90% of students taking physics at A-Level are in grammar schools. However it is likely that in the future, students who would previously have gone automatically to a grammar school, based on academic selection, may well find themselves choosing schools on other criteria and it is essential that advice is available at primary level to parents on these issues.

Post-primary schools

Careers information in schools is often given primarily by one careers teacher. There is considerable variation in the background subject specialization of careers teachers as noted by the Northern Ireland Schools and Colleges Careers Association in evidence given to the DEL Committee in June 2012 and not all have a professional qualification in delivering careers education. Indeed, there is no such qualification currently available in Northern Ireland. Given this background and the complexity of science career options, it is not surprising that anecdotal evidence from IOP members suggests that there is considerable variation in the provision of STEM careers advice in schools.

Whole-school approach to STEM awareness

The Institute considers it essential that all schools should have an integrated approach to providing STEM careers advice, with science teachers, career advisors, industry partnerships and professional bodies all playing a significant role. A recent report for the Department of Education in England 'Good Timing: Implementing a STEM careers strategy for secondary schools' makes a number of points in relation to this, including:

The importance of 'buy-in' from the school's senior management – i.e. reward and recognition for achievement in developing good STEM career education practice in the school, and commitment of resources

Continuing professional development for STEM subject teachers as well as for career advisors that builds their knowledge and understanding of career options and the labour market

A whole-school approach to raising awareness of STEM careers should note the key transitional stages of:

- Year 8 - entry to post-primary,
- Year 10 – making GCSE choices
- Year 12 - progressing to A-Levels, FE and apprenticeship routes
- Year 14 – progressing to Higher Education//work

In addition at each stage there should be active recognition of the problems of gender imbalance particularly in the physical sciences. At present girls only make up around 30% of the A-Level physics cohort. Hence it is essential that they are given particular encouragement to consider their options in this area. The Institute of Physics has carried out much work in this area around the kind of conditions in schools which encourage girls to take up physics and continue with it.

Within the Learning for Life and Work section of the curriculum, there is perhaps scope for ensuring a well-planned, cohesive approach to STEM career guidance with inclusion of elements such as:

1. The process of students learning how to research career information – this is particularly important given the multiplicity of information available on STEM option. In addition, it is clear that with the complexity and multiplicity of information available on STEM careers, students need help on how to research this for themselves
2. Interaction with local industry – at present there are some business partnerships linked with schools funded by DENI, these are good but provision is very patchy across Northern Ireland and there is uncertainty about continued funding.
3. Using school alumni in the STEM area to give talks, which could be video taped and made available on the web, or provide short profiles for inclusion in school career resources. Careers in areas such as teaching, medicine and law are well represented in the media but the same is not true of STEM careers. Hence students need to hear about the day-to-day experiences of those working in science-based industry and understand the career choices which they have made.

Given the non-traditional nature of careers in STEM it is essential that parents should also be informed about such options, particularly in relation to salaries and career progression in this area.

Labour market information

There is a particular need for easily accessible, accurate, up-to-date information on salaries. Some of this is available through the Sector Skills Councils and bodies such as the Institute of Physics carry out surveys among members which give useful information on career progression. Such information is not captured by reports on

recent graduates which generally do not reflect salaries five-ten years after graduation when salaries for highly qualified scientists are rising significantly.

Similarities and differences in Northern Ireland Careers Service provision between Urban and Rural areas, such as availability of Careers Advisers and accessibility to CEIAG services;

There does not appear to be a significant difference between careers service provision in urban and rural areas.

The impact of the budget cuts on the delivery of CEIAG across Northern Ireland.

No comment

Assess the process of professionalisation of those who deliver CEIAG, particularly in post primary schools & colleges including what training is available and how accessible it is;

Training for careers teachers in post-primary schools is not consistent: throughout all stages in education and between different schools. However it is clear that career guidance teachers strive to do their best in what is a rapidly changing environment. Continuing professional development is clearly essential for all those involved in this area and that should also include subject teachers who play a highly significant role in opening up the possibilities of STEM careers.