

Level of Irish Maths Achievement is of Serious Concern to Employers

Expert Group outlines proposals to increase Ireland's Maths proficiency

The Expert Group on Future Skills Needs (EGFSN) today (Monday 15th December) outlined a set of proposals aimed at ensuring Ireland becomes one of the top OECD countries in terms of mathematical proficiency. The Expert Group highlighted the critical importance of mathematics for our economy and the need for a focused and long term approach to improve the quality and numbers of our national mathematical achievement.

Ms Anne Heraty, Chairperson, EGFSN commented, "Employers have indicated that the current level of our mathematical achievement is of serious concern. Boosting our maths skill levels is essential to realising opportunities for employment. Maths is a fundamental requirement for Ireland's development as a modern economy - important both for service and manufacturing jobs and for sectors of the economy with growth potential such as ICT, life sciences, business and finance and professional services."

"We must build and complement the significant developments underway with Project Maths¹. The proposals made by the Expert Group should be seen as part of a broad set of measures that need be implemented in a coordinated way to improve national maths achievement. This will require the support of a wide range of partners," she concluded.

Policy Proposals

Several complementary policy proposals are made by the Expert Group with the aim of increasing the level of our national mathematical achievement. In summary:

¹ *Project Maths* is a strategy for the development of curriculum, teaching, learning and assessment in mathematics for post-primary schools with emphasis on problem-solving skills, context and application. The project is led by the National Council for Curriculum and Assessment in collaboration with the Department of Education and Science and the State Examination Commission.

- **Provide professional development and recognition to Maths teachers at Primary and Secondary Level**

Adequate time should be allocated to the development of maths competence in teacher training courses.

Primary and Secondary Level maths teachers should be provided with additional professional development. Professional Masters degrees and higher diplomas in maths education should be developed.

A part time teacher degree aimed at those working in jobs with a high maths content should be considered. This may be particularly attractive to those seeking a career change and who are interested in maths teaching.

- **Develop a more interactive, imaginative approach to teaching mathematics**
There is a need to help students understand the fundamental importance of mathematics in subjects such as science, engineering and technology; business and finance; and social sciences. A more interactive teaching approach would help students understand maths concepts and see their relevance and application in the world around them. This approach should start at primary level and be continued and reinforced at second level.
- **Develop a more coherent progression of mathematics learning**
Students who struggle with maths should be given greater help at primary level to reduce the significant numbers failing maths at Leaving Certificate level. There should be coordination to ensure a smooth transition between maths learning at primary and second level. There should be a structured maths studies programme for Transition Year students to ensure continued development in maths competency between the Junior and Leaving Cert cycles.
- **Support for parents role in their children's maths education**
Provide web-based material aimed at enhancing the parent's role in supporting their child's maths learning. Schools could also provide parents with short instruction sessions on maths concepts and learning.
- **Incentivise students to take maths at Higher Level**
The Department of Education and Science could work with the education institutions to address the disincentives to studying Leaving Cert Higher Level Maths.
 - Promote the development and introduction of a system of bonus college entry points for Higher Level Leaving Certificate maths to compensate for the greater effort widely considered to be required for success in this subject.
 - Students could be allowed to take Ordinary Level Leaving Cert Maths in their fifth year and then have the choice of taking Higher Level later in their sixth year. This would mean that ordinary syllabus be a subset of the Higher Level syllabus.
- **Address the maths knowledge needs of adults in the workplace**
Establish workplace initiatives for the learning of mathematics and numeracy in line with programmes already available on literacy. Such learning should be practical and relevant to people in their jobs. Employers should communicate the practical way in which maths is important for careers paths.
- **Benchmarking and evaluation of national maths education performance**
Results of benchmarking and evaluating our maths performance in an international context could be compared annually against agreed national targets for maths achievement. Findings could inform policy and practice and help frame a promotional campaign aimed at increasing interest of maths among students, teachers and parents.

Notes to Editors

The *Statement on Raising National Mathematics Achievement* is available at www.skillsireland.ie

Ireland's Mathematical Performance

- At Junior Certificate levels the minority of candidates opt for the higher level syllabus. Nearly Two Thirds of Junior Certificate Higher Level Maths students drop to Ordinary Level for Leaving Certificate.
- A relatively low number of students (17% of total candidates) take Higher-Level Leaving Cert Mathematics. This outcome does not match the expected uptake of 20 percent to 25 percent at the time the current syllabus at Higher- Level was introduced in 1992.
- 5,000 students did not achieve a level D grade or higher in Leaving Cert Maths in 2008. Failure rates over recent years have remained stubbornly high, limiting the educational and employment prospects of a significant number of young people.
- Chief Examiner's Report on the 2005 Leaving Certificate expressed concerns about the slippage in both the quality of work and capacity of candidates to engage with problems that were not routine.
- There is a perceived difficulty level among students which is seen to influence the choice of subjects with a high mathematical content such as physics.
- The number of students entering honours degrees in computing and electronic engineering degree courses here has declined significantly in recent years.
- Ireland ranks 16 out of the 30 OECD countries for maths proficiency. Fewer Irish students achieved the highest maths proficiency levels compared to the OECD average (10 percent vs 13 percent). In the top performing countries 20 percent of students achieved these top levels.
- Countries such as Finland, with a high mathematics and science proficiency score, use such performance results to attract inward investment .

EGFSN

The Expert Group on Future Skills Needs (EGFSN) is a body appointed by the Irish Government to advise it on aspects of education and training related to the future skills requirements of the enterprise sector of the Irish economy. The Group was established in 1997 and is composed of representatives of business, employees, education, government departments and state agencies. **Anne Heraty** is the Chairperson of the Expert Group on Future Skills Needs. She is also founder and CEO of CPL Resources Ltd. The EGFSN operates under the aegis of Forfás which provides research and secretariat support to it.

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