



A Cathaoirleach,

Good morning and thank you for the opportunity to speak with you today. The Irish Mathematics Teachers' Association welcomes the chance to put forward the views of our members, who have serious concerns about recent developments in the direction of mathematics pedagogy. Before we can address the future of STEM in Irish education, we need to address the present and there are several small things that could be done to address these concerns.

The IMTA is an extremely open organisation that benefits from rigorous discussion and debate, and our views are backed up by statistics, research and anecdotal evidence. Mathematics teachers in this country care deeply about their subject and know how crucial it is to the continuing development of a strong, vibrant educated workforce and we are acutely aware of its importance in the realm of STEM subjects. Mathematics teachers, in the main, embrace change well and are open to reflecting on their teaching practice and embracing new approaches, ideas, technologies and resources. Mathematics teachers rolled in behind changes to the mathematics syllabi under the umbrella of Project Maths. Mathematics teachers embraced the use of digital technologies in their classrooms for pedagogical purposes long before covid made them necessary.

The IMTA believes that STEM education is essential for the future of our country, and we are committed to playing our part in ensuring that Irish students have access to the highest quality STEM education possible. Given that mathematics education is our primary area of concern and the basic importance of mathematics in STEM, our submission primarily focuses on mathematics education.

Our submission includes a range of recommendations aimed at improving the teaching and learning of mathematics in post-primary education. We have focused on five key areas related to mathematics education: Junior Cycle mathematics, Leaving Certificate mathematics, teacher education, female participation in STEM, and mathematics at primary level. Regarding Junior Cycle mathematics, the IMTA expresses concerns over the revised Junior Cycle specification, which we believe is too long and cannot be adequately delivered due to decreased class contact time in many schools. The IMTA also notes a demotion in the importance of fully understanding the topic of algebra in the new specification and calls for the reintroduction of a second exam paper at Higher Level with adequate choice. Furthermore, the removal of the Foundation Level mathematics course and examination at Junior Cycle level is a matter of concern for the IMTA, and our members believe that it has adversely affected the education of students who find numeracy and literacy challenging. Regarding classroom-based assessments, the IMTA suggests that only one assessment (on statistics) should be completed in a coordinated timetabled fashion with other subjects, rather than the current nine assessments across all subjects in each of second and third years.

We are also concerned that the gap between JC and LC maths (at all levels) is huge. Students who do not do TY in their schools are particularly disadvantaged. As there isn't sufficient time at JC level to drill down into the skills required and to develop the understanding needed of topics (particularly in algebra), the jump to LC is then massive and is having a detrimental effect on our students and standards in general.

In the case of Leaving Certificate mathematics, the IMTA believes that the syllabus is too long to be completed in the allocated time and that some elements of choice should be introduced into exam papers. Additionally, we would call for a review on the impact of bonus points for Higher Level mathematics.

The IMTA is concerned about the shortage of qualified mathematics teachers in Ireland and recommends incentivising teachers through financial arrangements. We also suggest that we ringfence places for STEM education courses and provide more support to newly qualified teachers.

We call for more investment in and resources for encouraging female participation in STEM subjects in general. The IMTA recommends launching a large-scale advertisement campaign to attract more women to the profession.

In summary, we are calling for the reintroduction of an examination at Foundation Level mathematics at Junior Cycle to support the thousands of students for whom L2LP is not accessible and find the level of literacy and numeracy too difficult.

There must be an element of choice on all mathematics papers at all levels to help reduce the anxiety felt by many students.

A 2nd examination paper at JC level should be reintroduced, again with adequate choice on the papers.

We call for a rigorous, independent academic review of the current JC before any work is done on reforming LC/SC. The benefit of CBAs, while useful in many subjects, are questionable in mathematics and the voice of teachers on this must be listened to. Again, 98% of teachers are calling for at most 1 CBA in maths, with many questioning their use at all in mathematics.

We believe the length of the course at JC and LC is too long and impossible to deliver rigorously in the time given to mathematics.

A review of the impact of bonus points at LC HL must be carried out.

We believe that our recommendations, if implemented, can help to ensure that Ireland remains a world leader in STEM education and that our students are equipped with the knowledge, skills, and confidence they need to succeed in the 21st century economy.

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Ciarán Duffy

IMTA Council Chairperson