IMMC: CELEBRATING 10 YEARS OF INFLUENCING EDUCATIONAL CHANGE

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The Consortium for Mathematics and Its Applications (COMAP) has had over 35 years of experience in running contests in mathematical modelling – at the undergraduate level with the Mathematical Contest in Modeling / the Interdisciplinary Contest in Modeling (MCM/ICM), at the secondary level with the High School Mathematical Contest in Modeling (HiMCM) and now at the middle school level with the Middle Mathematical Contest in Modeling (MidMCM). While these are international contests, we have never attracted more than 20 countries to participate, and entrants are primarily from China and the U.S. In an attempt to level the playing field, COMAP joined with NeoUnion ESC Organization (NeoUnion) of Hong Kong to create a modelling challenge based on COMAP's practice and the Olympiad model as well. And so, in the International Mathematical Modeling Challenge (IMMC or styled as IM^{2}C) each country or region is permitted to submit no more than two papers to the international judging round. This model has proved to be quite successful and pre-Covid we had 48 countries registering teams. Indeed, during the last ten years, the IMMC has played an increasing role in the education scene around the world. It has empowered students, teachers, and policy makers to place mathematical modelling at the center of curricula reform and educational change.

Our aim in this talk is to invite you to join us, not simply as a participating country, but also as a research partner with the shared goal to promote the value and importance of mathematical modelling as a critical skill all students should have the opportunity to learn. Of course, we are only at the beginning, but we now have an extensive database that we could (and should) make use of together. Currently we have access to student work from the first ten years of the IMMC, representing more than 400 teams from over 50 countries. We are excited to utilize this data to address questions such as: To what extent and in what sense does cultural context influence model development? What is the impact of developing a pre-selection competition in a country? What makes a math modelling task meaningful for an international audience? These are just a few examples; we look forward to sharing our data and hearing your ideas.

The second part of the talk will highlight one country's story. We will focus on what China does in IMMC and how attitudes towards modelling, including curricula, have dramatically changed over the past ten years. An emphasis on policy changes and influence, made possible through the IMMC, showing what a focus on mathematical modelling contests has made possible.

References

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