43rd MERGA Conference 2021
5 – 8 July 2021
National Institute of Education
Nanyang Technological University
Singapore
Mathematics Education Research Group of Australasia
MERGA 43: Quick Reads

Many Pathways towards "Excellence" in Singapore Mathematics Education

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The Singapore society has been engineered to embrace "a pragmatic and competitive national paradigm grounded in economic rationalism" due to lessons learnt since its independence (Ang, 2006). This could have shaped the development of a competitive mindset, which explains Singapore's DNA in the pursuit of "excellence", in particular, excellence in education. This could perhaps explain the stellar performance of Singapore students in the various international comparative studies and competitions.

This pursuit of excellence is not restricted to the top elite students' drive for excellence in the various prestigious international competitions; opportunities to enable a wider student population to pursue their own excellence evolve.

Consider the example of the international mathematical Olympiad (IMO), a prestigious activity that was accessible to only among the best of the best students. The experience of IMO has been cascaded down to a level accessible to a wider student population to experience success: more regional and national mathematics competitions are organized and pitched at a level that is accessible to a wider student population. Such competitive activities encourage more students to participate in various mathematics competitive activities for them to strive for excellence within their means. Such activities have in fact resulted in popularizing mathematics among a much wider spectrum of students. The popularization of mathematics through competition have also impacted mathematics education and the general student population, as many of these competition questions have rich pedagogical values for classroom instruction (Toh, 2015).

The notion of mathematics competition has also been expanded beyond the traditional idea of a paper-and-pencil test meant for the high achieving mathematics students. The emergence of the various other forms of mathematics competitive activities, such as the collaborative mathematics challenges, enabling students to engage in authentic mathematics research, and mathematics essays to explore deeply in particular topics of mathematics, have evolved. The wide range of competitive activities has further widened the inclusion of a much wider more Singapore students on board the journey of striving for excellence in mathematics beyond the usual school curriculum. In this way, the notion of "excellence" has evolved and broadened to include opportunities for all students with various inclinations to reach excellence, that is, the best that they can be.

References

Ang, W. K. W. (2006). (Re) defining the essentials: Examining the challenges of promoting meaningful art education within a result oriented and competitive educational paradigm in Singapore public schools. *APERA Conference 2006, 28 – 30 November*.

Toh, T.L. (2015). Mathematics Competition Questions: Their Pedagogical Values and an Alternative Approach of Classification. In Sung, J.C. (Ed.), *Selected Regular Lectures from the 12th International Congress on Mathematics Educvation* (pp. 807 - 820). Springer.