

The Mathematician Educator Special Issue: The Joy of Learning Mathematics

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Editors' Foreword

To align to the Mathematics Teachers' Conference (MTC) 2021 with the theme "The Joy of Learning Mathematics", the same theme was selected for this special issue. This was done in order to continue the tradition of the annual MTC (with the exception of a break in 2020 due to the covid pandemic) to leave some form of permanence for the conference participants, particularly the teachers who are the classroom practitioners. Previously, the speakers of the conference were invited to submit a paper to the annual yearbook of the Association of Mathematics Educators. This year we have decided to dispense with the publication of the yearbook but to produce a special issue instead, partly with the objective to reach out to a wider audience, among other logistic reasons.

We have a total of five papers, with three papers which were derived directly from the content of the presentations of MTC2021, and two other papers in which the content is related to the joy of learning mathematics. A short synopsis of the papers is provided below:

West (2022) compares the school and learning context of Singapore and Australia based on the TIMSS 2019 data and his personal experience in the Singapore schools. In comparison, he brings out the difference between students' performance and attitude towards mathematics in both countries. In particular, he highlights the importance of instilling in students the joy in mathematics at an early age. The content of the discussion brings about food for thought for teacher practitioners.

Cheng (2022) stresses the importance of mathematical connections in order for deep learning of mathematics to take place, and to enjoy the learning of mathematics. She exemplifies the different types of mathematical connections by using concrete examples relevant to the primary mathematics classrooms in order to address the aspects of task design that are related to making connections. She further illustrates the relationships between task design, anticipated pedagogies and student learning for teachers to make links and connections explicitly.

Shimizu (2022) advocates engaging students in "tinkering" with problems in order to experience the joy in learning mathematics. He argues, with examples, the importance of challenging the students to examine a given mathematics problems from multiple perspectives as part of the mathematical habits of the mind. He further provides practical ideas of tinkering with problems of the Japanese approach of teaching mathematics via problem solving.

Yeo (2022) applies the Self-Determination Theory to illustrate how teachers could motivate their students to learn mathematics, specifically at the secondary level. He illustrates how teachers could use real-life examples to make sense of what students are learning, and for the latter to relate to their own experience. He proposes the use of examples, guided discovery learning and proofs to provide autonomy support for students, and the structuring of procedural

skills using puzzles and gamification to make it enjoyable for students' learning of mathematics.

Toh (2022) proposes that engaging students to experience the “power” of mathematics rather than solely on the utility perspective could be one way to instill the joy of learning mathematics among students. He demonstrates with several exemplifications from the pre-university topic of complex numbers how problem solving could be used as a way for teacher teaching and student learning at the pre-university level. His approach aims to instill the joy of learning, and also reinforces the problem solving practice of the Singapore mathematics curriculum on the other hand.

References

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