

EDITORIAL NOTE

If you wander into any random Asian Maths class where many students can solve thousands of Maths worksheets like a walk in the park, surprisingly the most difficult question you can pose to them would be to pick out their most-loved Maths problem. Countries on the other side of the globe, however, often witness another paradox: if someone is not good at spelling or cannot express themselves in words fluently, it is a social stigma, but it seems completely understandable if they are not good at Maths. Here we can see how countries across the world face phenomena of seemingly two extremes but indeed the same problem when it comes to Maths teaching and learning in school context: Maths is considered an arcane language which is of crucial importance to finish school, yet has vague connection, if any, with the real world.

As educational researchers and practitioners, we all know that the opposite holds true, that similar to the way we learn to put together letters to be able to go on and enjoy millions of pieces of literature, drilling those numbers and formulae are by no means all there is to Maths. Recognising the criticality of helping students, and also teachers, to overcome the rote memorization and reach the wonderful realms that Maths reveals, the Vietnamese Ministry of Education and Training (MOET) and the Vietnam National Institute of Educational Sciences (VNIES) have made strong and continuous endeavours in improving the mathematics teaching and learning across Vietnam. Apart from regular curriculum and textbook provisions, the Institute also concentrates on encouraging research activities that allow Vietnamese mathematicians and researchers to exchange knowledge with leading experts worldwide.

One example of such effort is our annual mathematics conferences, which are organised to provide an internationally recognised forum for researchers, educational managers, educators, as well as math teachers and students from the ASEAN region and around the world, to share, discuss, and evaluate state-of-the-art research findings in teaching and learning mathematics. In 2021, the International Workshop on Mathematics Education (IWME) was successfully held with the active participation from world-renowned researchers and leading experts from different parts of the world to discuss a wide range of topics in mathematics education, from curriculum development to innovative teaching approaches and the prerequisites for successful implementation of these approaches.

In the context of Vietnam mathematics education, several topics are particularly considered priorities in the current phase of the development plan, including curriculum development, teacher training, technology applications in maths education, mathematics in STEM, and gifted education. Apart from being widely discussed among the experts, these topics were also empirically studied in research papers to provide a strong foundation for any future implementation. Vietnam Journal of Educational Sciences, therefore, contributes a Mathematics Education Issue on reporting and summarising studies addressing these alarming subjects with an aim to synthesize and highlight the insightful findings that contribute to the improvement of mathematics education in Vietnam.

In terms of teacher training, the first article “*Continuing Professional Development of Mathematics Teachers in Singapore*” by Kaur suggests a whole new approach to effective teacher’s professional development. Instead of the traditional-based and offline forms of training, Kaur puts forwards a holistic method of training, that is “demand-side” and “online”, aiming to provide sustained support for mathematics teachers to integrate knowledge into classroom practice. More details on the issue of teacher teaching at a specific educational level can be found in the second article “*Making the Differences: Training Early Childhood Mathematics Teachers in STEM skills*” by Applebaum and Zamir, which analyses the current practices of teacher training at early years of elementary levels, suggesting specific components in the training process that lead to successful teacher training programs.

In terms of the mathematics curriculum development, Vistro-Yu’s paper “*Developing a Culturally Relevant Mathematics Curriculum Using Transdisciplinary Approaches*” suggests that in order to

capture the multi-faceted nature of mathematics and appreciate its relevance in one's lives, apart from the pure mathematical knowledge, students should be introduced to the values of mathematics from a social and community perspectives, and the origins of mathematics in their culture, rich history, evolution and development. This paper proposes initiatives in teaching “culturally and historically relevant mathematics lessons” to primary and secondary schools in Philippines and how effective these initiatives are.

Regarding the methods of teaching mathematics, Ta and Tran's study “*Attitudes Change during an Integration of Modelling Course in Year 10 – The Application of the ABC Mode*” highlights the importance of students' attitudes in their learning effectiveness. The study examines how students' perceptions of mathematics and its utility have changed due to the nature of the tasks, suggesting that choosing appropriate teaching methods and activities is extremely important in successful mathematics education. Another study conducted by Pham, “*GeoGebra as a Tool to Enhance Understanding of the Concept of Derivative of a Function and Develop Mathematical Competence*”, explores the usefulness of the software tool GeoGebra in designing appropriate mathematical tasks to enhance students' understanding of the derivative concept. On a relevant note, a study by Nguyen, Pham and Le, “*Developing Mathematical Modelling Competence for Students in Vietnam through Teaching Practical Problems on the Topic of Exponential and Logarithmic Inequalities*”, specifically examines the teaching methods and process to improve Vietnamese students' mathematical modelling, which is widely recognised as one of the core mathematical competencies.

The last topic of discussion that is crucial in the development plan of mathematics education is research on mathematics teaching and learning in specific domains of education, such as STEM and gifted education. Vasylieva and Hodovaniuk's study, “*Maths and Coding in STEM Education*”, focuses on analysing different approaches to teaching mathematics and coding as parts of STEM education in the context of Ukraine's educational system. It is expected that the insightful findings from this study will shape a general overview on the interdisciplinary links between mathematics and the rest of STEM (science, technology and engineering); therefore, appropriate teaching methods can be developed for effective teaching STEM in the context of Vietnam education. The last article by Hoang, Do, Bui, Vu, and Le “*Mathematical Gifted Education in East Asia and the West: A Comparative Review and Case Study of Vietnam*”, sketches a comparative view of the education of mathematical talents between Eastern and Western countries. The case study of Vietnam – a country with impressive achievements in international maths competitions – will be examined and from there, suggestions on how to approach and improve the teaching quality to foster mathematically intelligent children will be provided.

Indeed, each of these research studies has a particular contribution to the research collection on mathematics education. On behalf of the Vietnam Journal of Educational Sciences' editorial board, I hope that this special Mathematics Education Issue will provide our audiences including researchers, educators and policy-makers, with useful insights on how to improve our current mathematics teaching and learning practices, the quality of teacher training as well as updates on potential approaches to specialised education (including STEM and gifted education). We look forward to receiving more research interest in other fields of mathematics education, as well as innovative studies with new research direction.

Last but not least, we would like to express sincere gratitude to all authors for this Issue and participants of the Workshop. Thank you for your great contribution.

Editor-in-Chief
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