

THE ART OF TEACHING MATHEMATICS

by:

Dyan A. Lintag

Teacher III, E.C. Bernabe National High School

Teaching mathematics involves more than simply presenting formulas and equations. It involves captivating students, encouraging curiosity, incorporating critical thinking, and developing an understanding of the objects in the world around us. Although some claim that mathematics is abstract and complex, a good teacher can make it an enjoyable, relevant, and satisfying experience. The art of teaching mathematics combines effective instruction with resourcefulness and practical strategies to make learning meaningful and engaging for students.

In the Philippines, some assessment results have been negative. Cruz (2021) of the Philippine Daily Inquirer noted that Filipinos ranked lowest among 79 countries in reading literacy and both mathematical and scientific literacy according to the Programme for International Student Assessment (PISA) results published by the Organization for Economic Cooperation and Development's (OECD), which were released on Tuesday. For example, in a web article by Magsambol (2020), Filipino pupils scored worse/lower than their peers in other nations in the international English, Math, and Science Study 2020 assessment. These two cited assessment results alarmed the Department of Education and triggered various local initiatives to enhance the development of students' mathematical skills and teaching instruction.

Some analysts believe that a country's education system can be effective only when the instruction and teaching methods are appropriate and sound; however, what qualities should teachers possess to improve such instruction?

Mathematics teachers need to be thoroughly conversant with the subject. This knowledge extends beyond the content of the curriculum to include the historical development of mathematical concepts, their application, and connections in the real world. This breadth enables teachers to tailor the subject more and effectively address the students' questions.

Everyone learns in their own way. Some individuals find it easy to explain abstract concepts, while others need to modify examples and teaching constants to practice concretely. Understanding all these aspects is crucial for teachers to know what, when, and how to engage students.

To measure how effectively a teacher teaches challenging mathematics, the teacher allows each student to take learning risks by answering high-level questions about their environment, whether inside or outside the classroom.

Teachers also encourage students to build strong self-confidence in answering mathematical questions. Some children enter mathematics class with a fixed mindset, believing that a person is either born good or bad at it. This can be mitigated by having the students adopt a growth mindset, which is the belief that skills can be developed through effort and determination. Students should be made to understand that there are no such things as mistakes to enhance their confidence and perseverance.

How the students connect concepts through math presents interesting real-world questions and reveals the beauty of mathematical patterns and structures. For instance, investigating the Fibonacci sequence in nature or the symmetry of geometric patterns can make math more enjoyable and meaningful. Students' learning can also improve their shared communication and critical thinking, thinking, alongside debate, which are beneficial strategies for learning from both mathematics and life.

Collaboration among students also enables them to be creatively engaged in mathematics. Several tactics by which teachers can make their math sessions more

engaging and participatory are essential in promoting collaboration and creativity. For example, students can visualize the concepts and work on various methods with the help of interactive software, graphing calculators, and internet tools. Virtual manipulatives and simulations can make abstract concepts more concrete.

In teaching applications, arithmetic examples such as percentages help students understand sales discounts, which relates to why geometry is an essential architectural design and learning. Statistical evaluation of sports data makes math in games and puzzles more understandable and interesting.

Storytelling math-based activities make abstract subjects such as Sudoku easier, logic and puzzles, and escape room challenges for learners. Improving teachers' engagement can foster critical and challenging thinking.

This suggests that practical teaching advances and suitable additional support in various strategies and methods for struggling students can solve the existing problem.

Teachers can interpret the work required to reduce and address anxiety through targeted instruction and diagnostic assessments. Some students may not care to learn the subject, but the teacher can enhance the learning tasks and encourage the students to learn while enjoying the subject. Using real-life examples, project-based learning, and explaining how math is used in everyday life and careers may help boost interest.

Teaching mathematics is an art that is constantly evolving. Therefore, teachers must continually update their methods through reflection and professional development. Teachers should review their lessons to identify what worked well and what could be improved. Some ways to achieve this include maintaining a teacher journal, gathering students' feedback, and analyzing assessment data. It is essential to require new knowledge of effective math teaching methods continually. Workshops, professional learning communities, teaching reflections, and innovative instructional strategies are ways to become effective educators.

Additionally, colleagues can share methods and practices for development. A group of teachers can exchange lesson ideas, discuss difficulties, and celebrate their success; it is critical that they strongly inspire one another. Thus, teachers who are enthusiastic about developing these qualities are preparing for an exciting future in their careers and for their student's holistic development, including character, work ethic, and dedication.

Effective teaching helps mathematics reach its rewarding full potential. With the right approach, including creating a positive learning environment, utilizing engaging education strategies, and committing to ongoing professional development, math teachers can make the subject interesting and enjoyable to learn. Consequently, they can help their students achieve their potential and, perhaps, set a positive path in mathematics. Through the arts of teaching today, we can ensure the competitiveness of this generation. Responsible students in school, as human capital, we can predict the future progress of our country.

References:

Cruz, M. (2021). Worst Ranking in Math, Science, Reading Prompts DepEd Review. Retrieved May 24, 2022 from <https://newsinfo.inquirer.net/1198208/worst-ph-ranking-in-math-science-reading-prompts-deped-review?fbclid=IwAR2DmNm6039F2HO6bvdIHsdFU94rEE5B55n3cG1vC694RdfcYQ77yv7v8eU>.

Magsambol, B. (2020). PH Lowest Among 58 Countries in Math, Science- Global Assessment. Retrieved May 24, 2022 from https://www.rappler.com/nation/filipino-students-lagging-behind-math-science-timms-international-results-2019/?fbclid=IwAR0ObbvLIEY3ykSAtJrMWRmX73ICVTNhgilZMkXI0REQj6TzYS6lu_YkSb