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#### CHALLENGES IN MATHEMATICS EDUCATION IN THE PHILIPPINES

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Mathematics, often regarded as the backbone of scientific and technological advancement, plays a critical role in national development. However, the Philippines has faced persistent challenges in its mathematics education system, which hinders student achievement and overall educational progress. From systemic issues in curriculum design and teacher competency to sociocultural factors and economic limitations, the problems are multifaceted and deeply rooted. Addressing these challenges is crucial for the country to foster a generation of competent, problem-solving individuals capable of navigating and contributing to the 21st-century global landscape.

One of the most pressing issues is the low performance of Filipino students in international and national assessments. Results from the Programme for International Student Assessment (PISA) 2018 revealed that Filipino students ranked among the lowest in mathematics proficiency, placing 78th out of 79 countries. This alarming result underscores the critical deficiencies in the way mathematics is taught and learned in the country. Similarly, the Trends in International Mathematics and Science Study (TIMSS) and the Southeast Asia Primary Learning Metrics (SEA-PLM) have consistently reported poor performance by Filipino students in math. These assessments highlight not only knowledge gaps but also the inability of students to apply mathematical concepts in real-life situations – a skill that is essential for lifelong learning and employability.

Curriculum-related issues are at the heart of the problem. While the implementation of the K to 12 Basic Education Curriculum aimed to boost foundational skills by aligning with international standards, its execution has faced many challenges. Critics have argued that the curriculum is overloaded, with an overly ambitious scope that leaves little time for mastery. Teachers often struggle to cover all required topics within the school year, resulting in a superficial understanding of concepts. Additionally, the spiral progression approach—where concepts are introduced and revisited with increasing complexity across grade levels—has been criticized for causing confusion instead of building competence. In mathematics, this approach can lead to fragmented learning if not properly scaffolded, particularly when students do not fully grasp basic concepts before moving to more advanced topics.

The shortage of qualified and well-trained mathematics teachers worsens the problem. Many teachers, especially in remote or underfunded areas, lack the necessary content knowledge and teaching skills to instruct math effectively. Teacher training programs in the country have been criticized for being outdated and overly theoretical, with little emphasis on practical classroom strategies and ongoing professional development. Additionally, low salaries and limited opportunities for career advancement discourage talented individuals from entering or staying in the teaching profession. This creates a cycle where students receive poor instruction, perform poorly, and grow up lacking interest or confidence in teaching mathematics. The lack of adequate teaching materials and resources also hinders effective mathematics instruction. Many schools, particularly those in rural or impoverished areas, lack basic supplies such as textbooks, calculators, manipulatives, and visual aids. In an increasingly digital world, the absence of technology-enhanced learning tools further disadvantages Filipino students. The COVID-19 pandemic has magnified these inequalities, as the shift to remote learning exposed significant gaps in access to the internet and digital devices. As a result, students from marginalized communities have fallen further behind in math learning, exacerbating the achievement gap.

Language is another critical but often overlooked factor. Mathematics is traditionally taught in English in the Philippines, which is a second language for most Filipino



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students. While English proficiency is part of the national curriculum, many students struggle to understand mathematical terminology and instructions in a foreign language. This language barrier can obstruct comprehension, making it difficult for students to engage with mathematical problems at a conceptual level. Some educators have advocated for the use of mother tongues in early math instruction to build stronger foundational understanding, though implementation remains inconsistent.

Socioeconomic factors also play a significant role in mathematics education outcomes. Students from low-income families often face multiple disadvantages that affect their learning, including undernourishment, lack of parental support, and the need to work part-time to support their families. These conditions can limit study time, reduce school attendance, and decrease overall motivation. Furthermore, there is a cultural perception in some communities that mathematics is inherently difficult or only for the "gifted," leading to a fixed mindset that discourages persistence and effort among students.

Another structural issue lies in the limited use of assessment data to improve instruction. While national achievement tests are conducted regularly, their results are not always effectively used to inform teaching practices or policy reforms. There is a need for a more robust feedback loop where student performance data is systematically analyzed and used to tailor interventions, provide targeted teacher training, and allocate resources more equitably.

In recent years, the Department of Education (DepEd) and various stakeholders have made efforts to address these challenges. Initiatives such as the National Educators Academy of the Philippines (NEAP) reform, teacher upskilling programs, and the development of localized instructional materials aim to enhance the quality of math instruction. However, these programs often suffer from inadequate funding, fragmented implementation, and lack of continuity. For any reform to be effective, it must be holistic, sustained, and responsive to the actual needs of students and teachers on the ground.



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In conclusion, the problems in mathematics education in the Philippines are deeply interconnected, requiring a comprehensive and coordinated response from the government, educators, communities, and the private sector. Raising the quality of math education entails not just curriculum reform, but also improved teacher training, equitable resource distribution, culturally relevant pedagogy, and systemic policy support. Addressing these issues is not merely an educational concern—it is a national imperative. Without substantial improvements in mathematics education, the Philippines risks falling further behind in global competitiveness and in preparing its youth for an increasingly complex world.

#### References:

Department of Education (DepEd). (2020). Basic Education Learning Continuity Plan. https://www.deped.gov.ph

OECD. (2019). PISA 2018 Results (Volume I): What Students Know and Can Do. https://www.oecd.org/pisa/publications/pisa-2018-results.html

TIMSS & PIRLS International Study Center. (2019). Trends in International Mathematics and Science Study. https://timssandpirls.bc.edu

SEAMEO INNOTECH. (2018). K to 12 Toolkit: A Guide for Parents, Students, and the Community. https://www.seameo-innotech.org

Bernardo, A. B. I. (2005). "Bilingual education in the Philippines: Code-switching and grammar." Linguistics and Education, 16(2), 177–193.





Reyes, M. C. (2021). "A Critical Look at the Spiral Progression Approach in the K to 12 Mathematics Curriculum." Philippine Journal of Education, 96(1), 15–28.

UNICEF Philippines. (2021). Learning During the Pandemic: Evidence from the Philippines. https://www.unicef.org/philippines

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