HARNESSING TECHNOLOGY FOR MATH EDUCATION: THE DEPED–KHAN ACADEMY PARTNERSHIP IN THE PHILIPPINES

by:
SHEINA JANE D. ISIDRO
Teacher II, Pablo Roman National High School

Mathematics education in the Philippines has long faced systemic challenges ranging from outdated teaching methods to low student performance in international assessments. However, a recent and promising development is the Department of Education's (DepEd) expanded partnership with Khan Academy Philippines (KAP), which introduces a new era of digital learning into the national curriculum. This initiative, particularly its integration of artificial intelligence (AI) tools such as Khanmigo, represents a significant shift toward evidence-based, technology-driven instruction. As the nation grapples with basic math literacy and equitable access to educational resources, the partnership between DepEd and Khan Academy presents a scalable, innovative, and student-focused method for teaching mathematics.

What began as a pilot program during the 2023–2024 academic year at 34 schools in Metro Manila and Dumaguete quickly grew to encompass more than 1,500 schools across the country for the 2024–2025 academic year (Khan Academy Philippines, 2024). The primary aim of this initiative is to enhance basic math skills for students in Grades 1, 4, 5, and 7 by utilizing digital resources that are in line with the Philippine K to 12 curriculum. The Khan Academy platform provides students with instructional videos, interactive practice activities, and instant feedback. Crucially, it provides educators with a dashboard to monitor student performance, identify gaps, and customize interventions as needed.

What sets this initiative apart is the introduction of Khanmigo, an AI-driven virtual tutor and teaching assistant created by Khan Academy. Introduced in late 2024, Khanmigo uses generative AI to guide students through problem-solving processes, respond to queries

in real-time, and help teachers create lesson plans aligned with national standards within minutes. With Khanmigo, learners are not merely passive recipients of knowledge but are actively engaged in dialogue-based learning, which fosters critical thinking and metacognitive skills (Khan Academy, 2024). This integration of AI in classrooms positions the Philippines as one of the first countries in Southeast Asia to utilize artificial intelligence at such a broad scale in primary and secondary education.

As of early 2025, the collaboration had already supported over 130,000 students and more than 1,500 educators nationwide. The objective is to reach one million learners by December 2026 (Department of Education, 2025). Initial responses from the schools involved have been exceedingly favorable. Educators have noticed a significant reduction in the time spent preparing lessons, an enhanced capability to tailor instruction, and more substantial student involvement during math classes. At the same time, students show increased enthusiasm and understanding following regular use of the platform. These enhancements are particularly significant given the long-standing challenges Filipino students have encountered in mathematics, as evidenced by the country's poor placement in the 2018 Programme for International Student Assessment (PISA), where the Philippines ranked 78th out of 79 nations in math (OECD, 2019).

The Khan Academy platform tackles a significant challenge in Philippine education: the considerable gap in access to quality teaching between urban and rural communities. By providing standardized content that is available online, students in remote and underserved areas are now able to utilize the same high-quality resources as those in cities. Additionally, the analytics dashboard allows educators and policymakers to make decisions based on data. Teachers can pinpoint which competencies their students find most challenging, while the Department of Education can monitor national trends and implement targeted strategies.

Despite these successes, the initiative still faces considerable hurdles. Infrastructure limitations remain a barrier to full implementation, particularly in schools without stable

internet connections or sufficient digital devices. While Khan Academy resources are accessible via mobile phones, an optimal experience—especially with Khanmigo—requires larger screens and consistent connectivity. Furthermore, not all teachers are equally equipped to integrate technology into their pedagogy. Ongoing professional development is necessary to ensure that educators can maximize the platform's potential. Khan Academy Philippines has responded to this need by organizing workshops and support networks, but scaling this training across all 1,500 schools is a monumental task (Khan Academy Philippines, 2024).

There are also concerns about sustainability and equity. While the partnership is currently supported by non-profit organizations and private donors, long-term success will depend on continued investment and institutional support. If the initiative becomes overly dependent on external funding, its future may be uncertain. Moreover, ensuring equitable access remains a challenge. For instance, even among schools equipped with basic technology, disparities in teacher training, community support, and student readiness can influence outcomes. DepEd must work collaboratively with local government units and private partners to ensure that the benefits of this digital transformation are truly inclusive.

Nevertheless, the program's data-driven approach provides a clear framework for evaluating effectiveness. By continuously monitoring performance indicators, the government and its partners can refine content, adapt training methods, and address challenges in real-time. This emphasis on measurable impact sets the initiative apart from many previous reforms that lacked adequate follow-through or evaluation mechanisms. Furthermore, the integration of AI through Khanmigo has the potential to revolutionize not just how math is taught, but how students across the board interact with academic content. Personalized learning, once a luxury confined to elite institutions, is now being introduced to public schools on a national scale.

Looking ahead, the success of this partnership could serve as a model for integrating technology across other subject areas such as science, reading, and even social studies. With the global economy increasingly reliant on data literacy and STEM competencies, enhancing math education is more than an academic goal—it is an economic imperative. The Philippines cannot afford to lag behind. By equipping students with strong foundational math skills through innovative platforms like Khan Academy and Khanmigo, the country takes a significant step toward closing the achievement gap and preparing its youth for the demands of the future.

In summary, the partnership between DepEd and Khan Academy marks an important moment in the educational framework of the Philippines. While challenges persist, the initiative's use of AI, digital tools, and data analytics represents a forward-thinking approach to solving long-standing issues in mathematics instruction. If sustained and scaled effectively, this program has the potential not only to raise national math performance but to fundamentally reshape how Filipino students learn. For a country long burdened by education inequality and underperformance, this is a timely and much-needed innovation.

References:

Department of Education. (2025). DepEd expands Khan Academy partnership to 1,500 schools. https://www.deped.gov.ph

Khan Academy. (2024). Introducing Khanmigo: AI-powered tutor and teaching assistant. https://www.khanacademy.org

Khan Academy Philippines. (2024). Khan Academy Philippines 2024–2025 Program Overview. https://www.khanacademy.ph

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