

## Editorial

Dear Readers,

The March 2026 issue of Science Education International presents eight original research articles authored by scholars from seven countries, including the Philippines, Turkey, Finland, Germany, Kazakhstan, South Africa, and Indonesia. This issue reflects the journal's commitment to advancing high-quality science education on a global scale by addressing themes such as inquiry-based learning, digital transformation, and conceptual understanding.

The issue opens with a study from the Philippines that provides a scientometric review of inquiry-based learning in Science, Technology, Engineering, and Mathematics (STEM) education, mapping research trends and hotspots from 1997 to 2025 to offer a conceptual roadmap for future scholarship.

The second article, Rüdiger Tiemann and Anna-Lena Nitsche from Germany, present a systematic review of mental models in chemistry education. Their findings emphasize that dynamic visualizations and attention to multiple representational levels are essential for fostering conceptual development.

The third section of the issue focuses on the evolving roles and challenges of educators in the modern classroom. Zukhra Mukhambetaliyeva from Kazakhstan explores the integration of artificial intelligence into teacher training, highlighting its potential to enhance individual learning while cautioning that ethical artificial intelligence literacy must be a core component of professional development.

The fourth article, Burcu Senler, provides a qualitative study from Turkey on how in-service science teachers navigate the implementation of inquiry-based teaching within centralized, examination-driven systems, identifying a critical gap between policy rhetoric and everyday practice.

The fifth article then shifts to student-centered interventions and interdisciplinary partnerships. From Finland, Anssi Salonen and colleagues investigate a school-industry partnership involving a weather balloon project, which demonstrated that

practical engagement in real-world collaborations strengthens student agency and STEM orientation.

The sixth contribution, Hettie Terblanche and colleagues from South Africa report on the influence of technology-enhanced, brain-based learning on undergraduate engineering students, suggesting that neuroscientific insights can significantly improve science understanding for disadvantaged learners.

The seventh contribution concludes by addressing social awareness and specific conceptual challenges in science education. Tobias Schmidt and colleagues from Germany examine prospective science teachers' conceptions of sustainable nutrition, noting that while ecological aspects are well-recognized, health-related and cultural dimensions remain less integrated into their professional mindsets.

The eighth article, Mohd Zaidi Bin Amiruddin and colleagues from Indonesia, utilize a three-tier open-reason test to diagnose physics misconceptions among high school students, specifically identifying the belief that gravity does not act in a vacuum as a dominant obstacle to understanding free-fall motion. Together, these articles provide valuable theoretical insights and practical implications for researchers and educators alike.

Overall, the articles in this March 2026 issue collectively demonstrate how innovative pedagogical approaches, digital technologies, and authentic learning experiences can support the development of self-efficacy, creativity, research competence, and career awareness in science education. Together, they provide valuable theoretical insights and practical implications for researchers, educators, and policymakers, reinforcing Science Education International's mission to advance high-quality science education on a global scale.

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