

Coaching Mathematical Thinking: ExDiD (Explore, Discover & Develop) Approach

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Abstract

Mathematics is built upon carefully structured concepts developed through logical and systematic procedures. When these procedures are reflected in teaching, learners are more likely to develop deep understanding rather than rely on memorization. This talk presents the ExDiD (Explore, Discover, and Develop) approach as a practical framework for coaching mathematical thinking in meaningful and structured ways. The ExDiD framework guides learners through a sequence of three stages that promote active engagement, critical thinking, and conceptual clarity, enabling them to think, reason, and act like mathematicians.

Biography

Professor Dr. Haslinda Ibrahim is a distinguished academic leader in Mathematics, specializing in Combinatorial Design Theory, Graph Theory, and STEM education. She has held key leadership roles as Professor, Head of Department, Deputy Dean, and Dean at Universiti Utara Malaysia, and as Chair and Professor at KIMEP University, Kazakhstan, where she has driven curriculum innovation, championed creative teaching practices, and fostered international research collaborations. As the creator of the Explore, Discover, and Develop (ExDiD) instructional model, she has pioneered structured and innovative approaches to teaching and learning. Her research on nature-inspired combinatorial methods has led to the development of new design formulations, contributing significantly to the advancement of the discipline. She has received numerous prestigious awards, including the Dissertation Research Award and Outstanding Teaching Assistant Award from Southern Illinois University, the AKRI 2019 Transformative Teaching Award, the PERSAMA 2021 Special Recognition Award, the Distinguished Teacher Award (2023) from Universiti Utara Malaysia, and the Anugerah Akademik Negara 2025 Teaching Award (Pure Science category). Through her work, she continues to inspire future scholars through innovation, collaboration, and transformative education.