Chapter 8
Development and Evaluation of an Electronic Prototype for Pedagogical Skills Enhancement of Educators

Amutha D. M. Navamoney
Manipal Global International University, Malaysia

ABSTRACT

This chapter explored the use of an electronic learning prototype to enhance the pedagogical knowledge and skills of Malaysian higher education educators. It assessed the benefits of an e-learning platform for addressing teaching challenges. Guided by constructivism, connectivism, activity theory, and adult learning theories, the study used design-based research (DBR) methodology, adapted from Reeves, in eight phases: analysis, design, validation, development, implementation, evaluation, impact, and continuous learning. Eight experts identified educators' professional development needs, while 43 educators participated in a training course using the prototype. Post-course surveys revealed readiness and motivation to integrate technology into teaching, indicating that electronic training can offer a scalable, sustainable solution for continuous professional development.

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INTRODUCTION

The need for professional development in higher education has grown exponentially due to globalization, technological advancements, and diverse student populations. Professional development encompasses structured learning experiences aimed at enhancing the skills, knowledge, and effectiveness of educators. As teaching methodologies evolve, higher learning institutions worldwide recognize the importance of equipping educators with the tools necessary to meet modern pedagogical challenges (Lizier et al., 2018; Tondeur et al., 2022).

In Malaysian higher education, professional development plays a pivotal role in aligning educators with global teaching standards and addressing specific local challenges, such as multicultural classrooms and diverse learner needs. This study investigates these needs, proposes an electronic prototype for enhancing pedagogical skills, and evaluates its impact on educators' teaching practices.

Background of the Problem

Professional development in higher education has become an indispensable component of achieving educational excellence. In Malaysia, the emphasis on human capital development is closely linked to the nation's long-term vision of becoming a developed economy, as outlined in Vision 2020 and subsequent blueprints, including the National Higher Education Strategic Plan (NHESP) and the Malaysian Education Blueprint 2013–2025 (MOHE, 2021). These frameworks underscore the importance of equipping educators with contemporary pedagogical skills to align teaching practices with global benchmarks and meet the demands of an increasingly diverse student population.

Despite these ambitions, Malaysian higher education faces numerous challenges that hinder the achievement of these goals. Among these challenges are the lack of structured pedagogical training, underutilization of educational technologies, and resistance to adopting innovative teaching methods (Rahman et al., 2022). Many educators in Malaysian universities rely heavily on traditional, teacher-centred instructional approaches, which are often insufficient for addressing the complexities of modern classrooms. Furthermore, the integration of digital tools into teaching remains inconsistent, with significant disparities in educators' digital literacy levels and access to training resources (Hamdan et al., 2021).

The rapid expansion of higher education institutions in Malaysia has compounded these issues. Increased student enrolment, particularly from international and non-traditional learners, has introduced greater diversity in learning needs, preferences, and challenges. This growing diversity necessitates innovative and flexible teaching approaches that can cater to varied learning styles while maintaining quality