

# Chapter 10

## Implementing Design– Based Research in Developing Mobile Flipped Learning Module at TVET Institution

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### **ABSTRACT**

*This chapter outlines the design and development of a mobile flipped learning module aimed at enhancing teaching practices among educators in TVET higher learning institutions through the flipped classroom approach. The mobile flipped learning (MFL) module plays a significant role in fostering the professional development of lecturers, enabling them to incorporate the flipped classroom strategy into their teaching practices. Utilizing a design-based research technique, the module development was divided into four major phases – analysis, design and develop with validation using ACTA technique, implementation, and usability. It involves 30 lecturers with a mixed method data collection technique. Findings indicate a positive impact on lecturers' professional development, enhancing their performance, attitude, behavior, and effort in adopting new practices with the MFL module. This strategy offers new insights into integrating technology into teaching practices and enhancing students' learning experiences.*

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# 1. INTRODUCTION

We are living in an era where online learning has become the new norm in education, regardless of the platform used. Today, the rapid advancement of technology is transforming traditional learning methods into mobile-based learning (Evans & Matthew, 2013; Widowati & Tyas, 2024). Mobile learning also known as m-learning, has become mainstream and has garnered significant interest in recent years (Lytridis & Tsinakos, 2017; Tong et.al., 2023).

Oberer (2016) reported that mobile learning can enhance the overall learning experience for both learners and teachers in various ways. Helgevold and Moen (2015) supported this by stating that the educational paradigm is shifting to include more hybrid and blended learning, online learning, and collaborative models. Zamzuri, Kassim, and Shahrom (2010) noted that the advancement of mobile devices not only improves educational communication but also positively impacts effective learning. Students often face challenges in accessing books and learning resources due to limited availability of physical libraries and textbooks. Mobile-based learning offers a convenient solution by providing access to a wide range of educational resources through apps and the internet. Students can easily download e-books, learning materials, and videos online (Ashiq et.al.). However, a major challenge in implementing this approach in Malaysian Technical and Vocational Education and Training (TVET) institutions lies in the insufficient technological infrastructure and training support required for its effective execution.

The initial deliverables of this research include developing a research design-based framework for creating a mobile flipped learning (MFL) module to be implemented in TVET higher education institutions. The MFL module aimed to assist educators in integrating technology into their daily teaching activities to enhance student's learning experience as well as shifting their teaching practices.

## 1.1 Significance of the Study

This research contributes to the enhancement of the current instructional technology and educational approach, especially in a Malaysian context and TVET higher learning institutions because the researcher aims to invent a new pedagogy and option in the teaching and learning arena by converting the current instructional approach into flipped learning; another way of delivering new knowledge. In other words, the development of a mobile flipped learning module is able to become an option to the lecturers in realizing the instructional tool during teaching and learning activities.

Moreover, this research has a large prospect to the educational system particularly in Malaysia and TVET higher learning institutions because it can be one of the references in academic research and Malaysia's education system to enhance

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