

UNIVERSITI TEKNOLOGI MARA

**VALIDATING UTAUT2 MODEL OF
IN-SERVICE KINDERGARTEN
TEACHERS' ACCEPTANCE AND
USE OF MOBILE LEARNING IN
TEACHING PRACTICE FOR
SCIENCE EDUCATION IN CHINA**

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ABSTRACT

To accelerate the modernization of education and build a powerful country in education, the Ministry of Education of China formulated the “Education Informatization 2.0 Action Plan”, and the education informatization industry has achieved unprecedented rapid development. The development of information technology has promoted the arrival of the mobile network era, and mobile learning has received more and more attention in the education field. However, whether in-service kindergarten teachers intend to apply mobile learning to the teaching practice of science education and the influencing factors remain to be explored, and relevant studies are relatively lacking. Through the theoretical construction of an extended Unified Theory of Acceptance and Use of Technology (UTAUT2) model, this study explores the key determinants of acceptance and use of mobile learning and model fitting thresholds. This study adopted quantitative research methods and conducted a questionnaire survey on 272 in-service kindergarten teachers in two public kindergartens in Wuyishan through the cluster random sampling method. Based on the data collection, SPSS 22.0 and AMOS 22.0 were used for statistical analysis. The results showed that in-service kindergarten teachers intend to actively accept and use mobile learning. Performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, and habit were identified as the factors affecting in-service kindergarten teachers’ intention to accept and use mobile learning. Teaching experience has a moderating effect on learning value and behavioral intention. In addition, a good goodness-of-fit indicator threshold indicates the suitability of the model construction. The findings provide theoretical advancements, practical implications, and future research directions that can inform policies and initiatives aimed at promoting the integration of mobile learning in early science education. It would be a significant step in the right direction to respond to the current request for a more focused and tangible integration of technology into the science curriculum.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Over the past 20 years, information technology and higher education courses have been continuously integrated through blended learning technology, resulting in a variety of teaching forms, among which multimedia computer-assisted teaching, e-learning online education, and mobile learning teaching methods. Due to the support of information technology, mobile learning has attracted much attention in education. It has become a vital content and means of implementing classroom teaching reform plans. Early childhood is when children observe facts and events, seek answers to questions, and establish a foundation of knowledge and skills for understanding basic science-related concepts. As Bers (2018, April) pointed out, young children can experience, observe, touch, and feel learning in action, remember what they have learned, understand their concepts, and structure their learning. The field of research, development and application known as “Early Childhood Science Education” (ECSE) gradually emerged from the penetration of the wider scientific fields, whose various dimensions quietly intersected after the 1950s (Ravanis, 2022). The field of science education was established in response to widespread unease about serious problems in the teaching of physical and biological sciences (Ravanis, 2022). The use of mobile technology as an educational tool to teach natural sciences has also become a frequent topic of discussion among early childhood teachers and educational policymakers due to the interaction of mobile learning with the teaching classroom (Kalogiannakis & Papadakis, 2017; Kalogiannakis & Papadakis, 2008). Mobile learning provides an immersive experience that visually demonstrates how variables interact in scientific models, improving understanding of the topics taught (Criollo-C et al., 2020). Mobile learning acceptance can be defined as an act of learning that is