

# Chapter 9

## Immersive Pedagogy and Virtual Reality: Enhancing Pre-Service Teacher Training Through the VIRTTE Environment

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### ABSTRACT

*This chapter investigates the enhancement of pre-service teacher training through the virtual reality integrated teacher training (VIRTTE) environment, which leverages immersive pedagogy and VR technology. The VIRTTE environment offers realistic classroom simulations, enabling future educators to practice essential skills such as classroom management, student engagement, and adapting to diverse student needs in a risk-free setting. The chapter delves into the theoretical foundations of immersive learning, emphasizing VR's role in developing teaching competencies,*

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*confidence, and engagement. Empirical evidence is presented to demonstrate VR's effectiveness in preparing educators for contemporary classrooms, while also addressing challenges related to costs, accessibility, and technical proficiency. Additionally, the chapter provides strategic recommendations for the successful integration of VR in teacher education programs.*

## **INTRODUCTION**

The integration of advanced technologies into education has significantly transformed the methodologies used to train future educators. Traditional teacher education programs, which often emphasize theoretical knowledge over practical experience, have faced criticism for inadequately preparing teachers for the dynamic and complex realities of modern classrooms (Ferdig et al., 2020). As educational environments become increasingly diverse and multifaceted, there is a pressing need to develop innovative approaches that extend beyond conventional methods, which typically rely heavily on observation and limited hands-on practice.

Virtual Reality (VR) has emerged as a promising tool in the educational domain, offering immersive, interactive environments that closely simulate real-world conditions (Makransky & Petersen, 2021). For pre-service teachers, these environments present an invaluable opportunity to gain practical experience in classroom management, instructional delivery, and student engagement before they step into actual classrooms (Brown et al., 2015). The Virtual Reality Integrated Teacher Training (VIRTT) environment, a pioneering technology in this field, allows pre-service teachers to participate in virtual teaching scenarios, refining their competencies in a controlled, risk-free setting.

The VIRTT environment leverages the principles of immersive learning to enhance the training of pre-service teachers. Immersive learning is characterized by its ability to engage learners deeply through interactive and contextually rich scenarios, contrasting sharply with traditional, lecture-based learning methods. This approach requires active participation, which fosters better retention and application of knowledge (Slater & Sanchez-Vives, 2016). By simulating real-world classroom dynamics, the VIRTT environment enables pre-service teachers to practice and hone their instructional strategies, manage student behavior, and adapt to various teaching scenarios effectively (Radianti et al., 2020).

This chapter examines the role of the VIRTT environment in teacher training, focusing on how it enhances pre-service teachers' competencies through immersive learning. It provides a detailed discussion on the theoretical framework underpinning the VIRTT environment, specifically the Cognitive Affective Model of Immersive Learning Integrated with Constructivist, Experiential Approaches, and Affectagogy

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