

ABSTRACT

In the age of technological imperative, massive efforts are underway to enrich traditional teaching and learning practices with technology. Under the umbrella of Embodied Cognition (EC) Theory, Embodied Learning (EL) is one such approach. EL is a kinesthetic, multimodal and playful process that enriches conventional educational practice and provides ways of integrating the physical body and movement into the classroom setting. In recent years, the use of emerging embodied technologies in educational settings has built upon EL ideas to provide some useful insights into how the active body can influence the function of the brain to drive learning. This dissertation looks at EL in different learning contexts and circumstances to see how it can improve the overall performance of students in real classroom settings for specific learning purposes. The study consists of four sequential phases that use data collection and analysis to explore the impact of EL-driven technology on actual classroom practice. In particular, through a multiphase mixed methods approach, this research focuses on investigating how EL impacts student performance (i.e. motor, cognitive, academic, and emotional performance) in authentic classroom environments within different elementary classrooms, including Special Education and General Education context. Results reveal significant gains in students' cognitive performance -Short-term memory ability (Gsm)- motor skills - Psychomotor ability (Gp) and Psychomotor Speed (Gps)- and academic performance in language and vocabulary acquisition. Findings also show improvements in students' emotional state, resulting in increased students' self-confidence and motivation to participate in learning process. The investigation provides a comprehensive understanding of how EL approaches can be integrated into different real classrooms, allowing researchers and teachers to enrich existing learning environments. To that end, the dissertation concludes with important insights and examples for researchers and educators on how they can implement effectively EL-driven technology in real classroom settings, as a part of the classroom curriculum.

Keywords: embodied cognition, embodied learning, kinesthetic learning, cognitive abilities, academic performance, emotional state, movement, motion-based technology, Kinect-based games, memory, language learning, classroom, school