

## Effectiveness of a Gait Assessment Model in Enhancing Understanding and Learning in Healthcare Education

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**Abstract :** Background: Traditional teaching models often fail to adequately convey the complexities of concepts such as gait analysis and a cyclic biomechanical process. This study introduces and evaluates a gait assessment system device as an educational model for healthcare students. The system aims to enhance learning through active experimentation with educators, focusing on teaching fundamental concepts like torque, potential energy, and kinetic movements. Methodology: A total of 80 fourth-year healthcare students specializing in physiotherapy participated in this study. The primary educational approach employed was the gait assessment model, designed to enhance understanding of basic biomechanical concepts such as torque, potential energy, and kinetic movements. The study utilized a pre-post multiple-choice question (MCQ) examination format to evaluate the students' learning outcomes. Additionally, comprehensive feedback was collected using a detailed questionnaire to gauge participants' perceptions and experiences. Results: Post-test performance significantly improved compared to pre-test scores (mean difference  $p < 0.001$ ,  $t = 5.96$ ). Participants reported that the gait assessment model effectively aided in achieving learning objectives, increasing topic understanding and interest, and enhancing comprehension of biomechanical events in gait. Conclusion: The gait assessment model proves to be a viable substitute for traditional educational models in teaching gait concepts. It has demonstrated efficacy in enhancing participants' understanding and visualization of gait processes while also fostering critical thinking and problem-solving skills among students.

**Keywords :** gait analysis, biomechanics, educational tools, educational innovation, interactive learning, healthcare education, curriculum enhancement

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