GIREP-EPEC
Transforming physics learning via Research & Practice
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Impact of an Acoustics Course on the Conceptual Understanding of Mechanical Waves Among First-Year Audiology Students

Friday 4 July 2025 13:40 (20 minutes)

This study investigates the effectiveness of an acoustics course in improving first-year audiology students' conceptual understanding of mechanical waves. A pre-test/post-test design with 57 participants was employed, utilizing modified Mechanical Waves Conceptual Survey to assess understanding before and after the course. Results showed a significant improvement in students' conceptual understanding. However, students struggled with standing wave concepts. Paired-t test analysis revealed a large, statistically significant difference between pre-test and post-test scores ($t(56) = 7.3$, $p < .001$). Targeted acoustics instruction can enhance students'understanding of wave phenomena, with further focus on standing waves being beneficial.

Education level

Age over 18 (excluding teacher education)

Physics topic

Full curriculum

Research focus

Student conceptions / Preconceptions / Misconceptions

Research method

Analytic Physics Education Research (Quantitative research)

Organizing preference criteria

Research focus

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Session Classification: Parallel oral presentations

Track Classification: Instructional strategies & Curricula (INSTR)