GIREP-EPEC
Transforming physics learning via Research & Practice
LEIDEN, 2025

Contribution ID: **128** Type: **Oral presentation**

# Gender Differences in a Context-Based Test in Mechanics

*Friday 4 July 2025 09:20 (20 minutes)*

This study explored how gender affects the performance and confidence of first-year physics students (445 total, 202 female, 243 male) at a Turkish state university taking a context-based test (CBT). Confidence was measured by having students rate their certainty in the correctness of each answer. A mismatch between accuracy and confidence is considered miscalibration, and bias is calculated as the difference between average confidence and average accuracy. Prior research suggests that factors like gender influence confidence and bias. This study specifically examined the impact of gender on CBT accuracy scores and confidence levels using an independent samples t-test. The results showed statistically significant gender differences in both confidence and CBT accuracy scores, with a medium effect size for confidence and a small effect size for CBT accuracy scores. The study concludes by discussing the implications of these findings for teaching and learning.

## Education level

Age over 18 (excluding teacher education)

## Physics topic

Other

## Research focus

Other

## Research method

Other

## Organizing preference criteria

Physics topic

**Author:** KALTAKCI GUREL, Derya (Kocaeli University)

**Presenter:** KALTAKCI GUREL, Derya (Kocaeli University)

**Session Classification:** Parallel oral presentations

**Track Classification:** Other research in Physics Education (OTHER)