



Contribution ID: 136

Type: **Oral presentation**

## Fostering Interdisciplinary Learning: Mathematics and Physics in Secondary Education

*Tuesday 1 July 2025 09:00 (20 minutes)*

This study explores interdisciplinary approaches to addressing challenges at the intersection of mathematics and physics in secondary education. Involving 297 students, it focuses on collaborative activities integrating vectors, derivatives, and integrals into physics problem-solving. Inspired by research and tailored to local contexts, the interventions aim to strengthen conceptual understanding, foster engagement, and build confidence. Pre-intervention findings from the Physics Inventory of Quantitative Literacy highlight significant gaps in reasoning skills. Post-test results using the Test on Calculus and Vectors in Mathematics and Physics will assess the effectiveness of these strategies in enhancing students' problem-solving abilities and interdisciplinary comprehension.

### Education level

Age 15-18 (Secondary education)

### Physics topic

Interdisciplinary topics

### Research focus

Innovative instructional strategies and pathways

### Research method

Mixed method (qualitative & quantitative)

### Organizing preference criteria

Track

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**Session Classification:** Parallel oral presentations

**Track Classification:** Interplay of mathematics and physics (MATH)