



GIREP-EPEC

Transforming physics learning via Research & Practice
LEIDEN, 2025

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Type: **Oral presentation**

A learning path on electromagnetic waves for high school students

Friday 4 July 2025 09:00 (20 minutes)

A learning path on electromagnetic waves was designed for high school students. The theoretical framework we adopted is the Model of Educational Reconstruction, reinterpreted by means of Design-Based Research methods. The path was designed considering three interacting factors: the main conceptual issues characterizing the epistemic structure of the theory, the learning difficulties emerged from the literature, and the structure of physics textbooks. The first version of the path was implemented with a sample of 66 students, and the learning outcomes were assessed through a pre-post test, which provided us feedbacks to redesign a second version of the path.

Education level

Age 15-18 (Secondary education)

Physics topic

Other

Research focus

Innovative instructional strategies and pathways

Research method

Educational design research (Qualitative research)

Organizing preference criteria

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