GIREP-EPEC
Transforming physics learning via Research & Practice
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Bridging Lab work and History of Science: Enhancing Scientific Literacy Through Inquiry and Reflection on the Nature of Science

Monday 30 June 2025 16:30 (1 hour)

This study explores an innovative approach to teaching the Nature of Science (NoS) and the Nature of Scientific Inquiry (NOSI), addressing both well-established and often-overlooked aspects in educational research. Through a lesson plan structured around experimental activities and historical reflections, following an explicit and reflective approach, the aim is to develop students' teachers' understanding of scientific knowledge construction, uncertainty, inference, the provisional nature of theories, and the role of models. Using the historical figure of Galileo, the article examines the scientific method, the importance of the scientific community, and the self-correcting nature of science. This contextualized, reflective, and historical curriculum approach has enhanced students' teachers' understanding of science and fostered meaningful learning, as evidenced by its application over recent years

Education level

Pre-service and in-service teacher education

Physics topic

Interdisciplinary topics

Research focus

Metacognition

Research method

Educational design research (Qualitative research)

Organizing preference criteria

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Session Classification: Poster session

Track Classification: Physics teacher education & Professional learning (TEACH)