

Physics on Children's Terms - A Tool for Playful and Inclusive Exploration in Early Childhood Education

Tuesday 17 June 2025 13:15 (15 minutes)

Despite growing international recognition of the value of introducing physics-related phenomena in early childhood education (ECE) to support children's curiosity and long-term learning (Worth, 2010; Bucher & Hernández, 2016; Karplus, 1964), the presence of physics in Norwegian kindergartens remains fragmented. The national framework (Rammeplanen, Norwegian Ministry of Education and Research, 2017) references physics concepts under both Number, space and shape and Nature, environment and technology, but without a clear thematic structure. As a result, the implementation of physics-related content is largely dependent on individual teacher competence and interest.

This study presents the development and pilot testing of a set of reflection cards designed for use in Early Childhood Teacher Education (ECTE) and kindergarten practice. Each card addresses a specific physics topic and suggests hands-on, child-centered activities using simple materials. The cards aim to support the planning and facilitation of physics exploration in an inclusive and accessible way.

The material was tested by a group of ECTE students and six kindergarten teachers who will begin using it from August. The study outlines the development process and analyses feedback gathered through written and oral responses. A thematic analysis (Braun & Clarke, 2006) was used to identify key patterns in how the cards were perceived and what pedagogical needs they may address. A follow-up study based on observations of the cards in use is planned.

Author: GRANONE, Francesca (University of Stavanger)

Session Classification: Parallell B3