



Contribution ID: 204

Type: **Oral presentations**

## Expanding physics education understanding through large-scale literature review using unsupervised natural language processing

*Friday 30 August 2024 11:50 (20 minutes)*

We have thematically analysed papers from “The Physics Teacher” journal from its inception in 1963 to 2020, to understand what themes were prevalent in the history of physics teaching. The methodology combined an unsupervised machine learning (ML) method called Latent Dirichlet Allocation (LDA) into a qualitative analysis. Specifically, LDA allowed us to identify patterns of words that represent “topics”, while researchers derived analytical process and interpretation of results. Our analysis found 13 topics displayed over time, grouped into content-focused topics, pedagogical, laboratory and data analysis-focused topics, and learning-theory topics, suggesting a shift from practices to considering relevant learning theories.

### How would you like to present your contribution?

Live in Kraków (time slot to be allotted based on the programme)

### Target education level

General

### Category

Formal Education

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**Session Classification:** Oral presentations

**Track Classification:** Outreach of Physics