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# Exploring students' academic achievements in electricity and magnetism through learning styles and learning style-based instructional strategies in Mthatha High Schools

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**2020**
https://hdl.handle.net/10539/30045

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# ABSTRACT

This exploratory, descriptive and interpretive study investigated the impact of matching instructional strategies on the learners' learning styles, while considering their cultural background in the teaching of electricity and magnetism among grade 11 learners in schools around Mthatha in South Africa.

To achieve the intended objectives and to answer the research questions, a purposive sample of 245 high school physical sciences learners and five physical sciences teachers were selected for the study from a target population of 1245 physical science learners and 70 physical science teachers in Mthatha district. A pragmatic mixed method explanatory design was adopted for the study. The research instruments included a Physical Science Achievement Test (PSAT), in-depth semi-structured interviews, class observation schedules and Index of Learning Style Questionnaire (ILSQ) adopted from Felder-Silverman Learning Style model. Quantitative data were analysed using descriptive and inferential statistics. Qualitative data were analysed using a constant comparison coding process. The study found that the instructional programmes developed to match learning style preferences effectively improved learner achievement in electricity and magnetism. It is therefore recommended that teachers should use appropriate instructional strategies that would be congruent with the learners' learning styles for effective teaching and learning to take place in the physical science classrooms.



**Keywords**

Achievements, cultural attributes, electricity and magnetism, instructional strategies, learner achievement, learning styles, learning style-based instructions, performance.