

# Teaching the atomic structure of matter through stellar spectroscopy

Author: Gabriela Mahecha

The effectiveness of the TLS was analyzed based on post-test results, which showed an improvement of up to in students' understanding of:  
Electromagnetic radiation, Bohr atomic model and atomic spectra

- Astronomy in the classroom enabled that physical theories were used to provide a contextualized view of science. Brought students closer to the phenomenon of spectra and the processing of data obtained allowed them use the Bohr model explain the behavior of spectral lines.

Results and conclusions

Identify the difficulties faced by students in understanding the stomic model, and define the teaching-learning indicators based on the pre-test result

The TLS was designed based on the study of solar spectra and each activity was associated with a learning indicator and guiding question to provide a narrative context to the topics.

DBR Methodology

This study aims to establish the characteristics and activities required for an effective teaching-learning sequence (TLS) for the Bohr atomic model in secondary education using stellar spectroscopy.

Context of the study

Regarding the teaching of atomic structure of matter in Colombia, it is taught without taking into account the physical implications of Bohr atomic model (Solbes, J. et al. 2019). As a result, atomic spectra and their quantum explanation are not presented (Muñoz, Z. et al.2020). Additionally, Martínez Torregrosa, J. et al. (2016) identified difficulties surrounding the problematization and contextualization of modern physics.