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Using Geogebra in Learning the Equation of the Ellipse Among Engineering Students at the University of Antofagasta.

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Abstract

This qualitative research adopts a case study approach to investigate the perceptions of five first-year engineering students at the University of Antofagasta, Chile, during the first semester of 2025, regarding the use of GeoGebra in learning the specific equation of the ellipse in the plane. Through semi-structured interviews, the study focuses on the individual experiences of the students as they use GeoGebra to understand this fundamental content of analytic geometry, general physics, and celestial mechanics. The data analysis carried out and the trends in the responses found in this research provide a deep and very interesting insight into how technological tools such as GeoGebra software can foster the understanding and learning of mathematical concepts in the context of university education in engineering programs. Furthermore, the results offered provide valuable information for educators and curriculum designers interested in integrating digital resources into their teaching strategies in engineering and in improving mathematics learning.

Keywords: Education; Geogebra; Ellipse; Learning; Qualitative;