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Basic Mathematical Competences for the Curricular Units Calculus I and II in Students of the Civil Engineering Program: Diagnosis of Knowledge from the Professional Vision.

ABSTRACT

With the present study, the aim was to rebuild the basic mathematical competencies that the newly admitted student deserves to take the Calculus I and II curricular Units in the UNERG Civil Engineering program; Diagnosis of knowledge from the professional vision of Civil Engineers; in order to advance in the academic positioning of these units and motivate the student in the study of calculus, taking into account that the engineer calculates throughout his professional life. They are also necessary to understand your experience in the curricular units that you will take later. The study was located in the Research line: Assessment of Learning in Mathematics, based on Brousseau's theories of Didactic Situations. The methodology focused on a complex thinking approach, a dialectic hermeneutical method, supported by field research, of an interpretive type; where the informants were (03) university teaching civil engineers and 20 students from the UNERG Civil Engineering Program. With the application of exploratory exercises and dialogic interviews, they allowed me to interpret the world of knowledge of the bachelor who enters the career of civil engineering, finding students far away in the basic skills of mathematics. Reflecting that the reality of the low performance of the students of the UNERG Civil Engineering program is related to the gaps in the basic mathematics competencies acquired in high school, and in the instructional strategies of engineers as university teachers, which can be resized through a conceptual, procedural and attitudinal vision, based on previous knowledge that leads to the deepening of the inherent mathematical contents Calculus I and Calculus II.

Descriptors: Mathematical Competences, Calculus I and II Subject, New Students, Civil Engineering

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