An exploration of teaching and learning activities in flipped mathematics classrooms for engineers

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Abstract: Traditional lecture-based teaching methods in higher education have been challenged during recent years by pedagogies like flipped classroom (FC) and active student learning approaches. During this brown bag meeting I will present my own empirical research on flipped mathematical learning among first year engineering students. In addition to this, theoretical and methodological aspects of the thesis will be discussed. I will put special focus on these major themes from my research so far:

- Understanding the dynamics of a Flipped Classroom Activity System through the study of contradictions.
- A study of students’ active participation in the mathematical discourse considered through Sfard’s theory of commognition
- Utilizing Realistic Mathematic Education (RME) task designs in connection with Flipped Classrooms to create active learning arenas