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Mellony Graven, Hamsa Venkat, Anthony A Essien and Pamela Vale

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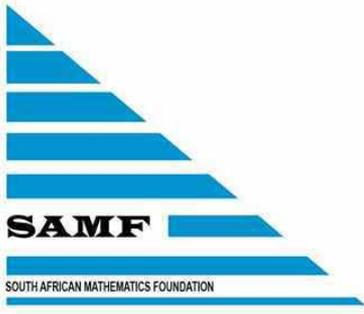# INTERDISCIPLINARY TEACHER TRAINING: ENACTIVE CONTEXT AND BLENDED LEARNING

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Starting from suggestions of the principles of vicariance and simplexity (Berthoz, 2000), our teaching research is heading towards certain trajectories that enhance interdisciplinary paths, capable of interconnecting disciplinary skills and deepening epistemological and methodological issues of great interest. The research involved a group of 92 Italian high school teachers. The in-service teachers attended a training course in a multidisciplinary context. In Italy, involving teachers of different disciplines in the same training path is not very frequent for high school. Our experiment is designed on the base of enactivism (Hutto, 2005). In this framework, the aim of the study was to develop interdisciplinary activities working collaboratively in small groups by blended learning modality on a social platform. The teachers designed interdisciplinary activities based on a mathematical impulse: all disciplines acted on the same theme. The current paper focuses only on the qualitative data, which were subjected to an inductive content analysis. Results provided evidence of the processes involved during the collaborative activities. Difficulties of students in mathematics often depend on aspects that are transversal to mathematics and, in particular, the incidence of linguistic aspects in the process of learning mathematics is increasingly emerging. We adopt Stephen Toulmin's (1975) definition of argument, as it offers a model that interprets most of the types of argumentation usually used in mathematics and establishes connections with many types of argumentation used in other fields and in everyday life. The results expected from the research are an increase in the specific disciplinary competences of the students and, in a collateral way, an increase in the competences of the teachers on transversal themes. The competences of students and teachers will be investigated through classroom observations. The qualitative analysis of the whole training process will be carried out through questionnaires and interviews with all the actors of the project. The initial results were so encouraging that the test is going to be repeated on a wider number of classes and on different subjects.

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