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Developing a Methodological Taxonomy of EER Papers

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Engineering Education Research (EER) is a wide and rich field of investigation [1]. It covers research on learning and teaching in all engineering disciplines as well as in the supporting disciplines, like physics, chemistry, computing and mathematics, which form the scientific basis of engineering research. Moreover, EER draws on theories and research methodologies from social sciences, like education, psychology and sociology to investigate the many-faced aspects of learning and teaching engineering. In order to get a better overview of the whole field, there is a need to look at both what is being researched and how the research is carried out.

The authors of this paper met in connection to a series of meetings arranged by the SEFI working group EER and a series of workshops organised by Line B of the EU project EUGENE, and decided to collaborate on the construction of a taxonomy for EER from a European perspective. The overall aim is to develop a taxonomy for the how aspect of EER. More specifically, we aim to identify what kind of theoretical frameworks and research designs that are being used, what kind of data that is collected and how it is analysed in EER papers. Our current analysis focuses on published papers in two major European EER forums: European Journal of Engineering Education and the EER track in the SEFI conference, but the taxonomy can obviously be used to analyse any other EER papers. We hope that this work will better reveal the richness of the field, but also highlight approaches that could be used more often in EER. Moreover, the results can be used to inform authors about differences between various publication forums, and emerging methodological trends in research. Finally, we will also look at how different aspects of research have been reported in EER papers with a view to providing suggestions for improving research reporting.

In this paper we describe the taxonomy and how it was developed. The results of the analysis will be reported elsewhere. ∎