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Mathematical working space and paradigms as an analysis tool for the teaching and learning of analysis.

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Summary: Mathematical working space (MWS) is a model that is used in research in mathematics education, particularly in the field of geometry. Some MWS elements are independent of the field while other elements must be adapted to the field in question. In this paper, we develop the MWS model for the field of analysis with an identification of paradigms. We show the advantages of this MWS model, which takes into account the epistemological and cognitive aspects of mathematical work, and more specifically the semiotic, instrumental and discursive geneses, by making them function as one system. By using examples and data from three countries, we illustrate how this model can be used to perform a priori analyses and analyses of class situations and individual student work.

Classification: D20 C70 I10

Keywords: analysis; mathematical working space; paradigms; perspectives

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