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From “everything changes” to “for high numbers, it changes just a bit”. Theoretical notions for a microanalysis of conceptual change processes in stochastic.

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Summary: This paper presents theoretical notions developed in a design research study for investigating the development of students' conceptions within a learning environment for grade 6. The study was designed to give opportunities to learn about random data showing patterns in the long run while being haphazard in the short term. By an in-depth analysis, we have investigated the microprocesses of constructing meanings of short-term and long-term behaviour and of attempting to relate them to each other. We have identified different patterns of microprocesses such as negotiating the scope of applicability in terms of situational or stochastic contexts. These patterns can – as empirically grounded theoretical notions – refine the conceptual change approach by providing tools for describing students' learning trajectories and potential obstacles in stochastics.

Classification: K59 C39

Keywords: learning stochastics; learning process; teaching-learning-process; mathematically-appropriate conceptions; short-term contexts; long-term contexts; learning trajectories

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