ZMATH 2014e.00168

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Knowledge shifts in a probability classroom: a case study coordinating two methodologies.

ZDM, Int. J. Math. Educ. 46, No. 3, 363-387 (2014).

Summary: Knowledge shifts are essential in the learning process in the mathematics classroom. Our goal in this study is to better understand the mechanisms of such knowledge shifts, and the roles of the individuals (students and teacher) in realizing them. To achieve this goal, we combined two approaches/methodologies that are usually carried out separately: the abstraction in context approach with the RBC+C model commonly used for the analysis of processes of constructing knowledge by individuals and small groups of students; and the documenting collective activity approach with its methodology commonly used for establishing normative ways of reasoning in classrooms. This combination revealed that some students functioned as "knowledge agents," meaning that they were active in shifts of knowledge among individuals in a small group, or from one group to another, or from their group to the whole class or within the whole class. The analysis also showed that the teacher adopted the role of an orchestrator of the learning process and assumed responsibility for providing a learning environment that affords argumentation and interaction. This enables normative ways of reasoning to be established and enables students to be active and become knowledge agents.

Classification: C30 K50 D20
Keywords: knowledge shifts; learning process; abstraction in context; documenting collective activity
doi:10.1007/s11858-014-0576-0