Urban Sixth Graders Reason about Combinatorics Problems

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Abstract

15 sixth grade students at three different developmental levels solved combinatorics problems as a basis for reasoning about multi-digit multiplication. Each student was interviewed three times. The first interview was an un-recorded selection interview, which was used to identify the student's developmental level. The second and third interviews were video recorded, and involved students in solving combinatorics problems. The results from the study include: (1) models of how students at different developmental levels solved the combinatorics problems; and (2) a framework for integrating research on mathematical cognition and urban education.