Computational and Mathematics Thinking Workshops for Elementary School Children and Their Parents

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Abstract:
This qualitative study explores the nature of engagement of students in Mathematics Thinking (MT) activities in the context of Computational Thinking (CT) integration. It specifically investigates the ways that students interact during CT and MT activities. This study uses a constructionist framework of learning by making and is situated in literature on integration of CT in the mathematics curriculum. In this case study, observations, interviews and reflection data were collected from ten students during CT and MT workshops. The data were analyzed to determine the ways in which CT activities enrich mathematical concepts. All children found that the CT activities (Symmetry, Sphero and Scratch) enriched their understanding of mathematical concepts. Several of the children were excited about what they referred to as a more interesting and interactive way of learning math and code. This study was limited to Grade 3 to Grade 6 students in a private school. For future research, the researchers suggest conducting a study in public schools that will involve specific tools of CT. The researchers also recommend conducting CT workshops over a three-day period so that children do one activity each day rather than all three activities in one session.

Keywords: computational thinking; mathematics thinking; mathematics curriculum

Biographical Notes

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