

**ZMATH 2016e.00311**

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**Participatory design research as a practice for systemic repair: doing hand-in-hand math research with families.**

Cogn. Instr. 34, No. 3, 222-235 (2016).

Summary: Success and failure in formal mathematics education has been used to legitimize stratification. We describe participatory design research as a methodology for systemic repair. The analysis describes epistemic authority – exercising the right or the power to know – as a form of agency in processes of mathematical problem solving and learning. We asked: What will aid families in advocating for their children’s math learning, particularly when they expressed concern about their ability to do so? Participatory design research provided a collaborative and iterative method to work with people who shape math learning: parents, children, teachers, community organizers, researchers, curriculum developers, and mathematicians. Data from four years of participant observation involved the design, facilitation, and dissemination of workshops and take-home materials and family case studies. As participating families claimed epistemic authority, institutional barriers became more visible. This tension maps where participatory design methodology can evolve to address systemic change.

*Classification:* D20 C60

*Keywords:* participatory design research; help of the family

doi:10.1080/07370008.2016.1179535