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Research shows parental motivational resources contribute to children’s math achievements

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PRESS RELEASE

Press Release

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Parents’ involvement in children's math learning: Motivational resources matter

Read the Child Development Perspectives article:

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How do children learn math? It's shaped by what they know as well as their motivation and engagement. Historically, research on children's math learning has been focused on parents' cognitive practices (such as math talk – informal conversations that involve math), however emerging evidence shows how parents' motivational practices (encouraging independence and helping children enjoy math) may also play a critical role in their math abilities.

Researchers from the University of Illinois Urbana-Champaign in the United States aimed to address the limited attention on the role of parental motivational practices in their children's math learning experiences.

First, researchers reviewed the theory and research on cognitive parenting practices in the context of math learning. As a next step, they highlighted emerging research on motivational parenting practices to emphasize how both motivational parenting practices and cognitive parenting practices contribute to children's math learning. By integrating attention to both cognitive and motivational aspects of parents' math involvement in theory and research, the author team hopes that the field can move toward a more holistic and developmentally sensitive understanding of how parenting shapes children's math learning across the school years.

The literature review is featured in a new *Child Development Perspectives* article, "Parents' involvement in children's math learning: Motivational resources matter," by Jiawen Wu and Eva M. Pomerantz from the University of Illinois Urbana–Champaign in Champaign, Illinois in the United States.

The Society for Research in Child Development (SRCD) had the opportunity to speak with the author team to learn more about the research.

Take home statement: *Parents help their children learn math not only through what they teach, but through how they engage—giving children room to explore, keeping frustration in check, and praising effort rather than*

ability.

SRCD: Did anything in the results surprise you?

Author team: What always surprises us about the research on the role of parents in children's math learning is the extent to which parents' motivational practices have been overlooked. Decades of motivation theory tell us that children's engagement and motivation drive their learning, yet when it comes to how parents support math specifically, the field has focused almost entirely on what parents teach rather than how they engage children around math.

SRCD: What does this teach us about the field of math learning?

Author team: The field has spent the last decade documenting what parents *teach* children about math—counting, number words, arithmetic concepts—and that work matters. What we've underappreciated is *how* parents engage children around math. Giving children room to explore and even struggle with hard problems, keeping the emotional tone steady, and responding to children's work in ways that highlight effort and strategy rather than ability all turn out to be just as foundational as the math content parents transmit. Motivational support belongs in the core model of how parents shape children's math learning, not at the margins. And the importance of motivational support likely grows as children move into adolescence—precisely when academic motivation tends to dip, math gets harder, and parents are less able to help with the content itself.

SRCD: Can you explain how this research might help parents/caregivers, researchers, educators and elementary school teachers?

Author team: For parents and caregivers, the practical message is that math support isn't only about transmitting content—it's also about the context they create around it. Are they keeping their own frustration in check when math gets hard? Are they letting children take the lead, ask their own questions, and try their own strategies before stepping in? When children succeed or struggle, are parents pointing to effort and approach rather than to whether the child is "smart" or "bad at math"? Math facts and concepts are valuable, *and* they are part of a larger set of tools parents can use to support their children's math learning. This may be especially worth knowing for parents of older children and teenagers. As math content gets harder and many parents feel they can no longer help directly, motivational support—talking about why

math matters, encouraging persistence, respecting a teenager's growing need for independence—may become a particularly powerful tool they still have.

Educators can use these same levers in the classroom and can help parents see that giving children space to struggle productively—rather than rushing in to rescue or correct—is itself a form of math support. For researchers, the field needs models of parents' math involvement that put cognitive and motivational practices on equal footing, and that ask how the two work together.

SRCD: What are some of the research limitations?

Author team: First, most of the studies we review are correlational. Even the strongest longitudinal designs—which follow families over time and account for things like children's earlier math skills and parents' education—cannot rule out every alternative explanation, so we cannot say with full certainty that parents' practices *cause* the differences we observe in children's math learning. Second, most studies track effects over relatively short windows, so we know less about how parents' practices shape children's math trajectories over the long term. Third, the bulk of this research has been conducted with highly educated, white mothers in Western—primarily American—contexts. We know much less about fathers, about families from a wider range of socioeconomic and cultural backgrounds, and about how cultural values around math and parenting shape what works and for whom.

SRCD: What do you recommend for future research in this area?

Author team: If we had to pick one priority, it would be to study how parents' cognitive and motivational practices work *together*—and how that interplay shapes not only children's math achievement but also their engagement, interest, and enjoyment of math over the long term. Two related directions also matter. First, we need to trace how the relative importance of cognitive versus motivational support shifts as children move from early childhood into adolescence, when academic motivation often declines, math content grows harder, and parents are less able to help directly with the material. Understanding what motivational support looks like—and what makes it effective—at these later ages is a critical gap. Second, this work needs to extend to culturally and economically diverse families, since most existing studies center a narrow slice of parents.

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Summarized from an article in *Child Development Perspectives*, “Parents’ involvement in children’s math learning: Motivational resources matter,” by Wu, J. and Pomerantz, E.M. from the University of Illinois Urbana–Champaign in Champaign, IL, United States.