The Classroom Library as an Opportunity for Fostering Children's Math Development

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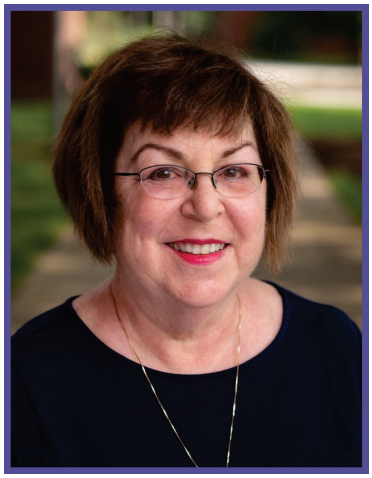

Helping children become competent users of mathematics needs to start when they are young for them to acquire what is a critical foundation for later growth (Ginsburg, Lee, & Boyd, 2008). Children start developing mathematics competencies even before the start of formal schooling. They acquire mathematics skills and an interest in mathematics through receiving direct instruction, watching others engage in mathematical thinking and activities, and participating in games and other mathematics-related tasks (LeFevre et al., 2009; Sonnenschein et al., 2016). We know that young children learn best when they are given activities that draw upon their everyday experiences and can choose tasks based upon their interests (Sonnenschein, Baker, & Serpell, 2010; Sonnenschein et al., 2016; Stites & Brown, 2019). Quality math instruction combines individual child interests with skill development to allow children to develop mathematical competencies and an excitement about mathematics (NAEYC/NCTM, 2010; Pomerantz & Grolnick, 2017). School psychologists can play an important role in children's mathematics development by understanding how this development occurs and helping ensure that even young children have sufficient opportunities to develop mathematics skills. That is, they can inform teachers and parents about relevant opportunities for children's mathematics development.

School is a critical place to engage in mathematical learning experiences and build foundational mathematics skills (National Council of Teachers of Mathematics, 2013; NAEYC/NCTM, 2010). However, opportunities to engage in a variety of mathematics activities are often limited (Ginsburg et al., 2008), particularly for young children. Children in preschool classes often spend an average of only 24 minutes a day with access to mathematics activities versus 77 minutes for literacy activities (Piasta, Pelatti, & Miller, 2014). This lack of access to mathematical activities highlights the need to make the most of overlooked opportunities.

One such potential opportunity is the classroom library which is ubiquitous in preschool classrooms and even in elementary grade classrooms. We know that the use of a classroom library promotes children's literacy development, particularly when teachers encourage children to use the library (Neuman, 1999). Although research with classroom libraries has focused on traditional storybooks, exposure to books with mathematics content fosters children's growth in mathematics skills (Hassinger-Das, Jordan, & Dyson, 2015). For example, teacher read-alouds of mathematics storybooks increase children's mathematical engagement (Langford, 1994) and promotes mathematical conversations (Hojnoski, Columba, & Polignano, 2014). However, children have limited access to mathematics storybooks and teachers read mathematics-related books far less frequently than other types of books (Pentimonti, Zucker, & Justice, 2011).

We recently used an online survey, which we made available on several social media sites, to investigate the availability of mathematics books in preschool classroom libraries (Stites, Sonnenschein, Dowling, & Gay, 2021, in press). While our study focused on preschool, the results may be generalizable to children in elementary school because of the availability of such libraries in older children's classrooms. Most teachers who responded to our survey were female (85%), White (73%), and college-educated (78%). The average age of the teachers was 45 years. Most of the participants (87%) were lead or head teachers in their classrooms. About 18% worked at Early Head Start/Head Start, Judy Centers, or Title 1 schools.

The Classroom Library as an Opportunity for Fostering Children's Math Development

Continued from page 22

Ninety-eight percent of the preschool teachers who responded to our survey reported having a classroom library. Many of the teachers (58%) reported encouraging their children to use the classroom library at some point during the school day, such as during free choice activities, transitions between activities, after snack, and when children finished other work. Teachers reported that classroom libraries were available to the children about 10 to 30 minutes each day. Of the teachers who had a classroom library, 81% said their libraries contained some mathematical storybooks, but significantly fewer than other types of books. A few teachers mentioned that they kept their mathematics storybooks separate from the library for use in the designated "math center."

Although the classroom library was not seen as a venue for fostering children's mathematics development or engaging their interest in mathematics, teachers did note that math centers were full of hands-on, engaging mathematics materials. It seems that teachers are providing engaging materials to foster their children's mathematical skills but may be missing an additional opportunity to engage students' mathematical interest by making mathematics books available in the classroom library. The classroom library may provide children a unique opportunity to explore and engage with mathematics concepts in an age-appropriate, fun manner, when it is seen as another place to "do mathematics."

School psychologists can assist classroom teachers to think about their classroom libraries as places to ignite children's interest in mathematical concepts. Support from school psychologists may include working with teachers to help them select mathematics-themed storybooks to incorporate into their classroom libraries and communicating the idea that when children explore mathematics topics in books they are, in fact, "doing mathematics."

As school leaders, school psychologists can share the effectiveness of mathematics storybooks to reinforce children's skills and engage their interest (Hassinger-Das et al., 2015). They also can suggest resources for teachers to use. For example, the National Council of Teachers of Mathematics (NCTM) provides many resources to incorporate children's literature into mathematics instruction and Development and Research in Early Math Education (DREME) provides lists of mathematically relevant texts.

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The Classroom Library as an Opportunity for Fostering Children's Math Development

Continued from page 23

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SPAAAC Participates in the 2019 Annapolis Out of the Darkness Walk

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This school year, the School Psychologists' Association of Anne Arundel County (SPAAAC) elected new officers: Samantha Ritts (President) and Jessica Oterson (Vice President). Officers from the previous school year were also reelected: Claudia Lopez (Treasurer) and Laura Sass (Secretary). SPAAC currently has 44 members, which is similar to the previous school year. In September, SPAAAC participated in the Out of the Darkness Walk and raised $695.00.

In January, SPAAAC held our 8th annual charity event on a small scale. It was held after the Maryland School Psychologists' Association (MSPA) executive board meeting in Annapolis at Red Red Wine. We raised $128.00, which was donated to the Light House Homeless Prevention Support Center of Annapolis, MD. The Light House Homeless Prevention Support Center helps rebuild lives with compassion by providing shelter and services to prevent homelessness and empower people as they transition toward employment, housing, and self-sufficiency. In light of COVID-19, SPAAAC is still deciding how we will approach our 4th annual Day of Service. Finally, during Anne Arundel County Public Schools' Office of Psychological Services meetings, SPAAAC has bake sales. If interested in more information about SPAAAC and/or future events, please contact Samantha Ritts at sritts@aacps.org.