EDC Education Development Center

Early Childhood @EDC

Young Learners and Technology

Can digital tools support a child's development?

The wise use of technology and media can help caregivers and communities fuel young children's early learning and healthy growth. Digital tools can play an especially vital role in improving outcomes for disadvantaged children by creating learning lifelines for young people, families, and educators in resource-lean environments.

For 40 years, EDC has led research and produced free, interactive resources to ensure that technology and media reach their full potential to enhance early learning, teaching, and health promotion. We are dedicated to advancing the use of digital tools to close opportunity gaps for disadvantaged children in effective, cost-efficient, sustainable ways.

Around the world, EDC works with ministries of education and communities to provide customized and comprehensive support—curriculum, materials, instruction, coaching, and training—in one package. Our programs have strong, positive effects on student performance and educator skills and are transformative in contexts where government investments in young children are minimal.

In the United States, EDC collaborates with media producers, schools, community organizations, health providers, home visiting programs, museums, libraries, and others to expand access to high-quality materials and deepen understanding of how digital tools can enhance development and support families. Our research shows that digital games, apps and videos can both accelerate young children's learning and level the playing field for children in low-income communities.

How can digital tools help adults help children?

Digital tools can give adults fast access to research-based strategies that guide them in enhancing young children's learning, health, and safety.

From our preschool to grade 3 work, we have come to recognize one central tenet: adults both need and benefit from ongoing support as they nurture and inspire young children. Digital tools can help meet this need by providing effective, low-cost, just-in-time learning for adults.

From our research and work with educators and families, we have found that digital tools are most supportive when they:

- Present clear, accurate, and culturally and linguistically relevant content
- Provide models of real engagement for educators, parents, and children
- Connect educators and families to a community of fellow learners
- Provide ready access to resources and adaptable activities for children
- Offer tailored learning that reflects adults' prior knowledge and experience
- Blend new uses of technology with tried and true hands-on learning

Guided by these best practices, EDC builds the capacity of adults to successfully foster children's healthy development and early mathematics, literacy, and science learning. For example, in low-resource contexts around the world, EDC's ***Interactive Audio Instruction (IAI)*** supports and coaches formal and nonformal educators in engaging young children in high-quality curriculum and instruction. Delivered through CDs, MP3 players, mobile phones, or radios, our IAI programs have reached over 100 million learners and hundreds of thousands of facilitators in over 23 countries, including Honduras, Ethiopia, Malawi, Haiti, India, Mali, Rwanda, and Zanzibar. In many locations, our IAI programs are being sustained and expanded to serve even more students, schools, and communities. Across the IAI portfolio, participating learners are much more likely than non-participants to meet learning standards, to show vastly greater learning gains, and to maintain that learning advantage over comparison groups for years.

In ***Bringing Science Home with PEEP,*** EDC provides strategies to support families in high-need communities in weaving early science learning and productive talk—asking questions, restating ideas, sharing theories and observations, replying to questions—into home life to scaffold young children's learning. With media specialists and home visiting organizations, we are developing and testing the Family Engagement Toolkit, which features digital and hands-on science learning resources. The materials help home visitors build families' capacity to foster their children's early science learning and school readiness.

In partnership with WGBH, EDC is providing new insights into how technology can help teachers support young children's acquisition of computational literacy, an important precursor to computer science. Working directly with families, as well as educators who teach in underserved urban and rural preschools, we are helping identify the building blocks of computational thinking. ***Monkeying Around*** encourages children and caregivers to experiment with hands-on activities and digital tablet apps, and it will soon have a complementary broadcast series on PBS.

If relationships with caring adults are what children need most, why bother with digital tools?

When thoughtfully used, digital tools can help create a dynamic learning environment that has direct benefits for young children.

Digital tools help children understand things they can't see, such as how seeds sprout roots and grow into plants or how a bird constructs a nest. By offering child-centered interactivity and instant feedback, digital tools can also build children's skills as well as their confidence as learners.

From our research on children and technology—including our National Science Foundation-funded ***Next Generation Preschool Math*** and ***Next Generation Preschool Science*** studies and ***Finding Our Way Around,*** which is funded by Heising-Simons Foundation—we have found digital tools support children's learning when they:

- Promote social interactions and joint engagement between children and with adults
- Engage children in tasks that invite sharing, collaborating, and discussing, such as paired playing of digital games
- Give children opportunities to build—and practice applying—skills and knowledge

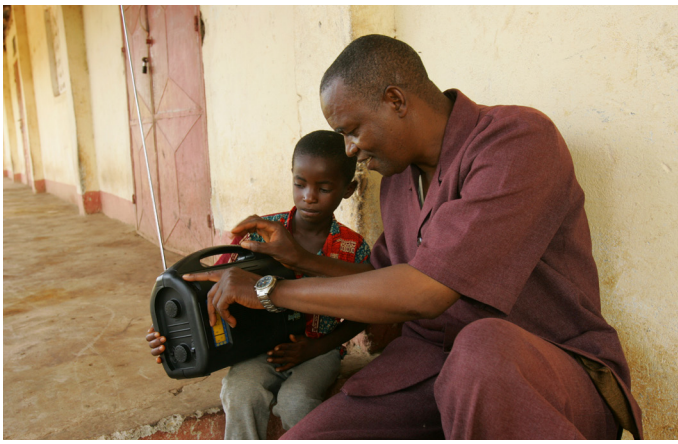
This knowledge drives our R&D to produce innovative tools to better promote school readiness and success. For example, EDC's ***Stepping Stone: Vernacular*** app enhances in-class instruction by delivering touchscreen mother-tongue reading activities to learners in low-resource classrooms around the world. This intervention supports teachers who are uncertain about how to teach reading and allows students to receive immediate, appropriate feedback to support their learning. In Zambia, a randomized controlled trial of Vernacular on tablets saw significant and dramatic improvements in literacy. The Stepping Stone platform also is being used to deliver teacher training in our international early grade reading programs. In the United States, with support from the Bill & Melinda Gates Foundation, EDC is identifying and testing high-quality digital resources that have the potential to support early childhood teachers serving young dual language learners.

Who can make sure that technology benefits children?

All of us. Everyone who cares for and about children can make a difference.

To address persistent educational and economic challenges around the world, we must maximize the potential of technology to provide children with high-quality early learning. Formal and nonformal educators, schools, community leaders, health providers, home visitors, librarians, museum educators, researchers, and many others can help all children have equitable access to high-quality tech-enhanced learning. Two especially crucial partners include:

- **Ministries of education and state education agencies.** When leaders invest in expanding access to evidence-based early learning—through IAI programs, m-Learning apps, or digital games that foster key school readiness skills—they rewrite children's futures. High-quality early learning positively impacts children, communities, and countries.
- **Media producers.** Working closely with educators and learning scientists to achieve the highest-quality content, media producers are crucial allies in ensuring all children reach their full potential. Their abundant creativity and technical prowess ideally position them to expand access to high-quality educational resources. Our deliberate partnerships with local artists promote the continued production of high-quality materials after our interventions end.



Through the U.S. Department of Education's ***Ready to Learn*** initiative, EDC is helping the U.S. public media system create better services for millions of families, especially those living in communities with high concentrations of poverty. For 10 years, we have advanced knowledge of how digital resources—videos, online games, tablet-based apps, and print activities—can enhance school readiness and success. Findings from our study of the *PEG + CAT TV* series highlight the importance of making quality media resources available to all families. We found that children in low-income households who used content from *PEG + CAT* showed significantly stronger improvement in critical math areas.

The promising findings from this research and the powerful impacts of our IAI and m-Learning innovations are exciting. Yet we have much farther to go before all children's needs are met. Joining together with multi-sector partners, we continue to pioneer new ways to harness the power of technology to ensure all children and families thrive.

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Education Development Center (EDC) is a global nonprofit that advances lasting solutions to improve education, promote health, and expand economic opportunity. Since 1958, we have been a leader in designing, implementing, and evaluating powerful and innovative programs in more than 80 countries around the world.

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