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Study: Interactive educational apps may improve math skills

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Researchers have found evidence that young children may be able to hone their math skills using interactive educational apps.

However, their review found apps weren't effective for improving the communication skills of children with autism.

The AAP recommends not more than one hour a day of educational, supervised screen time for children ages 2-5 years.

Researchers from Florida International University set out to see whether children really can learn from apps. They conducted a systematic review that included 35 studies published after 2007 and included children with a mean age under 6 years.

The review found children using interactive apps made advances in math compared to controls receiving traditional instruction. There also appeared to be some benefit for learning phonics. The impacts were largely seen in school-based settings, according to "Apps as Learning Tools: A Systematic Review," (Griffith SF, et al. *Pediatrics*. Dec. 23, 2019, https://doi.org/10.1542/peds.2019-1579).

"These findings are notable because they suggest the addition of interactive touchscreen technology may afford a learning advantage for early academic learning exceeding traditional modes of instruction and consistent with the theory that interactive apps are well suited to support active, repeated, and varied practice of skills," authors wrote.

There also appeared to be some potential for learning other subjects like science, but more research is needed. There were mixed results when comparing educational interactive apps to noninteractive videos.

One area where interactive apps fell short was in helping children with autism improve their communication skills, although these findings were based on just three studies.

"Social communication skills may be less easily generalized to the real world, compared to foundational early math and pre-literacy skills," authors wrote.

Authors also noted about half of the studies in their review had a risk of bias and some study authors were testing apps they had developed. They called for more research with large randomized trials that could look more closely at a variety of factors like the age of the children, the impact of using apps with parents and app features.

“Continued research in this area will be critical to inform the debate around young children’s screen time, as clinicians and researchers try to strike a balance between taking advantage of the potential benefits of new technology, while encouraging limits in screen time,” they wrote.

Michael Rich, M.D., M.P.H., FAAP, director of the Center of Media and Child Health at Boston Children’s Hospital, wrote in a related commentary that many apps claiming to be educational are not, and consumers should demand more rigorous testing

“It is too easy to believe unsupported claims of educational value and use mobile devices as guilt-free electronic babysitters,” Dr. Rich wrote. “As we move into the second half-century of educational screen media, let us seek *Sesame Street* quality from our interactive apps.”

Resource

- Information for parents from HealthyChildren.org on how to make a family media use plan