Children's Use of Digital Devices to Support Learning at Home: A Descriptive Study

Susan Sonnenschein, Rebecca Dowling, & Brittany Gay
Department of Psychology, University of Maryland, Baltimore County

Introduction

- Increasingly, technology has assumed a featured role in informal home learning experiences (DOE, 2017; Reid et al., 2016; Wartella et al., 2016).

- Children spend 56-minutes per day, on average, using educational media (Rideout, 2014).
- Research suggests that digital devices and media can make a positive impact on children's learning (DOE, 2017; Neuman & Kaefer, 2017; Wartella et al., 2016).
- However, there are two important limitations to this research:
  - Much of this research focuses on teachers' views.
  - Most research focuses on digital device use for math and reading, few studies examine device use for science and writing.

The Current Study

- Explored parents' views of the use of digital devices to support learning in math, science, reading, writing at home.
- Examined children's access to and use of digital devices to support math, science, reading, and writing at home.

Method

Participants (N = 169)
- 91% mothers, 82% White, and 77% college-educated.
- 50% female children, 36% 1st/2nd, 40% 3rd/4th and 24% 5th/6th grade.

Measures
- Online survey distributed via Qualtrics.
- Survey included close- and open-ended questions (see Results section for questions).

Results

Device Access and Use

- 99% of children had access to the internet at home.

Access to Digital Devices		%
Which of the following do your children have access to at home?	Tablet (e.g., iPad)	88
	Computer/laptop	77
	TV with Internet	71
	Video Game System	61
	Smartphone	51
	E-reader	19

When your children uses a digital device, how many minutes per day does he/she use the device?

Amount of Device Use (mins.)	
	M (SD)
Math	18.01 (19.36)
Reading	19.01 (18.92)
Science	12.39 (15.81)
Writing	11.83 (17.68)

- Device use was more common in math and reading than science and writing ($p < .05$).

Parents' Confidence to Support Device Use

- Most parents agreed/strongly agreed that they had good basic computer skills (93%), were comfortable working with new technology (89%), and had good overall knowledge of technology (85%).

Parents' Views About Device Use

How do you feel about the amount of time your child uses a digital device? (1 = *Should be used a lot more* to 5 = *Should be used a lot less*)
- Most parents said devices were used "just the right amount." (59%) or "could be used a little more." (23%)
- This view did not vary across subjects or grade ($p > .05$).

- Parents were most confident in supporting device use for reading and least confident in supporting device use for math ($p < .05$). There were no differences between grades.

What do you think about the use of digital technology for basic subjects like math, reading, science, and writing?
- The majority of comments were positive ($n = 108$; 67%).
- Parents liked that devices are *engaging/interesting* ($n = 28$; 17%) and felt that learning to use technology was a *necessary* skill ($n = 19$; 12%).
- Some parents noted that technology should be used to *supplement* traditional learning ($n = 19$; 12%) while others noted *moderation* is key ($n = 15$; 9%).
- 9% ($n = 14$) expressed wholly negative views stating they preferred traditional styles of instruction.
- 8% ($n = 13$) were concerned about the potential negative effects on children (e.g., attentional, socialization, eye strain)

Typical Activities Using Devices

Please describe the typical activities your child does at home.

Math
- Apps, websites, and computer games (e.g., First in Math, DreamBox, Khan Academy, Bedtime Math ($n = 98$; 56%).
- 21 parents (12%) explicitly stated they do **not** use devices for math.

Reading
- E-books, search engines, websites ($n = 92$; 54%).
- 30 parents (18%) explicitly stated they do **not** use devices for reading.

Science
- Documentaries, TV, YouTube, websites ($n = 22$; 13%).

Writing
- Minimally reported. Few parents reported writing (typing) stories on a computer ($n = 5$; 3%), texting or chat features in games ($n = 4$; 2%).

Discussion

- Parents and children are making use of technology at home to support learning, mostly in math and reading.
  - Finding appropriate education media can be difficult.
  - Parents may need support in finding digital media that can support science and writing.
- Overall, parents felt confident using technology and supporting their children's use of technology.
- Future studies should examine similar questions in less privileged samples.

UMBC

CHILDREN AND FAMILIES, SCHOOLING AND DEVELOPMENT LAB