MOBILE DEVICES AND PARENTING
[EXTENDED ABSTRACT]

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ABSTRACT

Aim/Purpose	This presentation will discuss how mobile devices are used to keep children busy and entertained during child care activities. Mobile devices are considered the 21st "Century Nanny" since parents and caregivers use those tools to engage children's attention for indefinite periods of time. Research background on touch screen devices and children's age groups are presented to map age to screen activities and the type of device used. The literature is then compared to a small sample of 45 students attending Pasitos, a pre-k and 1st and 2nd grade school in El Salvador, and the type of mobile devices they used after school.
Background	The wide adoption of mobile devices to keep children busy and entertained is a growing concern and a cause for passionate debates.
Methodology	This study considered two types of research to compare findings. One study was gathered from the literature to demonstrate how children use mobile devices, apps, and video genres based on age groups. The second study looked at 45 children attending Pasitos and the type of mobile devices they used during child care time at home. Pasitos is a pre-k and 1st and 2nd grade school in El Salvador.
Contribution	Identify the type of mobile devices mostly used by children during child care activities.
Findings	(1) Touchscreens are the most intuitive interfaces for young children; (2) children's use of technology can strengthen the relationships between home and school; and (3) mobile apps consider children's emotions, learning activities, and interaction in the development and design.
Recommendations for Practitioners	Touchscreens are the most intuitive interfaces for young children, and adult supervision enhances the children's experience.
Recommendation for Researchers	Mobile apps for design and development must consider children's emotions, learning activities, and interaction.
Impact on Society	Children's use of technology can strengthen the relationships between home and school.

INTRODUCTION

The wide adoption of mobile devices to keep children busy and entertained is a growing concern and a cause for passionate debates. According to technology surveys (Richter, 2013), mobile devices are considered the 21st Century Nanny.

Mobile devices are introduced during child care activities to engage children's attention for indefinite periods of time.

Very little is known about the amount of time children should spend with mobile technology at different stages of development.

Nearly all children prefer interactive materials making games and music ideal candidates to sustain early learning.

RESEARCH BACKGROUND

Parent attitudes do not always promote learning when children interact with mobile tablets or smartphones. Parents need guidance on this interaction to nurture learning and to introduce new educational experiences to children (US Department of Education, 2016).

Mobile touchscreen technology has made it significantly easier for toddlers to use computers. Children as young as 12 months old are able to display moderate abilities to manipulate screens (Hernandez, 2014).

Research on mobile touchscreen shows that children age 1-5 years old have an easier time using mobile devices when their parents are the primary role model (Hiniker, Suh, Cao & Kientz, 2016).

Few studies have researched the impact of young children's cognitive and social development with the use of mobile apps (Hourcade, Mascher, Wu, & Pantoja, 2015).

Designers of mobile apps are now considering the children experience because applications must be flexible to 1) children's attention spam; 2) age-related challenges and reward systems; and 3) children's gestures (Hiniker et al., 2016).

DATA GATHERING

This study considered two types of research. One study was gathered from the literature to demonstrate how children use mobile devices and apps for various activities. The second study was conducted with 45 children attending Pasitos, a pre-k and 1-2nd grade private school in El Salvador, to determine the type of mobile device used with caregivers.

As shown in Figure 1, the study conducted by Hourcade et al. (2015) illustrates that children's age influence the type of apps and videos they use for entertainment. The study sampled 2,400 parents and 207 children using tablets to watch 208 YouTube videos. It was found that only half of the parents wanted to supervise their children while playing games or viewing any other activity. Another 12% of parents explained that they prefer to spend all possible time with their children regardless of activity. The rest of parents were independent and were not involved in screen time.
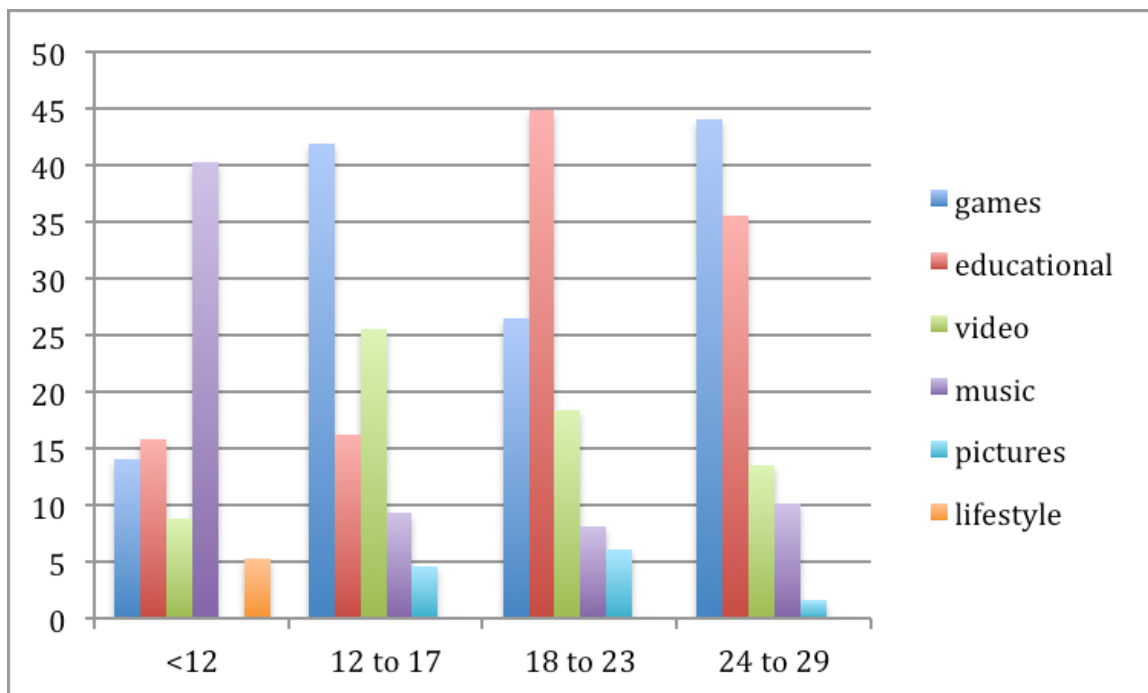
Figure 1. Percentage of videos (on the y-axis) featuring a particular app genre by age group in months (on the x-axis)

In Figure 1, music was the most popular category for the younger age group, but the popularity drops about 10% of cases for older children. Games and educational apps have an opposite trend with older children having the most use. Most of the devices used in the study were Apple iPads.
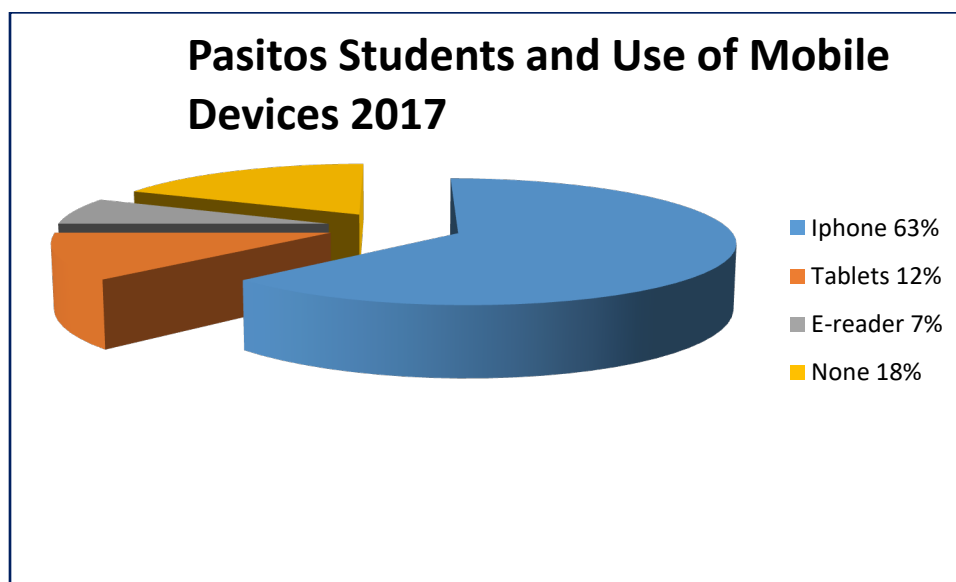

Figure 2 Pasitos sample of students using mobile devices

Figure 2 shows the study results from 45 Pasitos students using mobile devices out of which 27 students were pre-k and 18 students were in 1st and 2nd grade. A questionnaire was given to the parents

asking them to rank what type of mobile device children used as an entertainment or learning activity after school. The study yields that 60% of the students used Iphones and other smartphones; 7% used tablet; 5% used e-readers; and 23% did not use any mobile devices but watch TV children's programs. Because this was a small sample, statistical comparisons were not made. Instead, simple descriptive statistics were used to describe the participants and results. The engagement among children, technology, and caregivers was measured in the study.

RELATED RESEARCH FROM THE US DEPT. OF ED (US Department of Education, 2016)

#1: Technology can support and enhance learning when used properly. Children under 2-years old should learn from videos if parents and caregivers co-view materials with them. For ages 2-5, families and early educators need to take into account that technology may be used at home and in early learning settings. For ages 6-8, technology should be used as a tool for children to explore and become active creators of content.

#2: Technology should be used to increase access to learning opportunities for all children over 2-years old. This includes children living in the digital divide, children with disabilities, and dual language learners.

#3: Technology may be used to strengthen relationships with parents, families, early educators, and young children over 2-years old.

#4: Technology is more effective for learning when adults and peers interact or co-view with young children over 6-years old.

CONCLUSIONS

Age groups can be used to inform when children should be introduced to mobile device apps. Adoption and supervised media should start at home at ages 1-2 years old.

Children emotions, learning abilities, and new interactive features in mobile apps are being considered for social-emotional development and design.

Based on research, touchscreens are the most intuitive interfaces for young children.

Children's use of technology can strengthen the relationships between home and school.

REFERENCES

Hernandez, A. (2014). Toddlers and tablets: Emerging Apps take cues from learning science. *Education Next*, *14*(1). Retrieved from http://www.questia.com/library/journal/1G1-352376588/toddlers-and-tablets-emerging-apps-takecues- from#/

Hiniker, A., Suh, H., Cao, S., & Kientz, J. A. (2016). Screen time tantrums: How families manage screen media experiences for toddlers and preschoolers. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (CHI '16). ACM, New York, NY, USA, 648-660. https://doi.org/10.1145/2858036.2858278

Hourcade, J. P., Mascher, S. L., Wu, D., & Pantoja, L. (2015). Look, my baby is using an iPad! An analysis of YouTube videos of infants and toddlers using tablets. *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*, ACM, 1915–1924. https://doi.org/10.1145/2702123.2702266

Richter, F. (2013.) *Mobile devices: The 21st century nanny.* Statista Harris Interactive. Retrieved from https://www.statista.com/chart/1499/mobile-device-use-of-american-parents/

US Department of Education. (2016, October).Early learning and educational technology policy brief. Retrieved from https://www.acf.hhs.gov/sites/default/files/ecd/policy_brief_final3.pdf

BIOGRAPHY
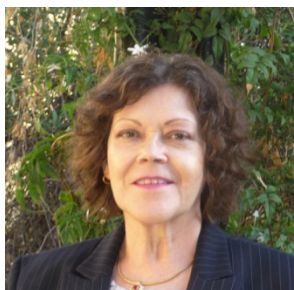
Dr. Mina Richards lives in Southern California and teaches Computer Information Systems at Cal State Los Angeles and other online universities. She holds a Ph.D. in Information Systems from Nova Southeastern University and received her master in Management Information Systems from Claremont Graduate University. Although she worked full time while attending school, she regards that time as extraordinary in her career as she made good friends and learned from and worked with distinguished faculty. She valued the education she received at NSU for it afforded her the opportunity to learn the technical side of Information Systems. Her experience in school helped define her career teaching in higher education.

Dr. Richards has many years of experience developing and studying various types of software and network systems. Previously, she worked as a project manager for financial and IT organizations where she led integrated solutions for core banking platforms. Her corporate background is in the analysis of computer software and business processes to improve quality and reduce cost. She actively serves on advisory boards at a foreign government and as a consultant on domestic technology projects.