Young Chinese-Australian Children's Use of Technology at Home: Parents' and Grandparents' Views

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Abstract

Young children are increasingly surrounded by a variety of technologies including television, computers, iPads, and mobile phones. This small qualitative study explored how Chinese immigrant families living in Australia viewed their children's use of technology at home. Six parents and three grandparents representing nine different families with children aged three to six years were interviewed. Data were analysed using Rogoff's (2003) personal, interpersonal and cultural-institutional planes of analysis. We found that these children lived in technology-rich environments, however strongly held values and beliefs associated with academic learning resulted in the creation of family rules and practices that limited children's access to, and use of, different technologies. We argue that an understanding of family values, beliefs, practices and culture will assist educators to build partnerships effectively with families, and enhance learning opportunities for young children.

Keywords: young children, family values, technology, Chinese-Australian immigrants

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Introduction

Over recent years, technology use has become common in families for both adults and children. Young children are increasingly surrounded by technological devices at home, in educational contexts and in the wider community (Jordan & Romer, 2014; Ofcom, 2013; Rideout, Saphir, Pai, & Pritchett, 2013; Takeuchi, 2011). Research shows that parents often use technology as a parenting tool as they attempt to maintain a balance between family needs and young children's desires to use technology (Nikken & Schols, 2015; Wartella, Rideout, Lauricella, & Connell, 2013, Zaman, Nouwen, Vanattenhoven, Deferrerre, & Van Looy, in press). In Australia, three-to-eight-year-olds have access to a wide variety of media equipment in their homes, including televisions, computers, mobile phones, portable media players and game consoles (Australia Communications and Media Authority [ACMA], 2009). In 2007, 40% of three-to-four-year-olds used a computer at home, and 16% played games using an electronic game system (ACMA, 2009). Between 2009 and 2012 internet use increased from 60% - 79% in five-to-eight-year-olds (Australia Bureau of Statistics [ABS], 2011, 2013b). These figures highlight the increasing access young children in Australia have to technology. Television is the most dominant media platform used by children (ACMA, 2009; Rutherford, Brown, & Bittman, 2011). Specifically, 94% of three-to-four-year-olds watched an average of seventyone minutes of television every day (ACMA, 2009), with morning and afternoon being peak viewing times (Rutherford et al., 2011).

These statistics included young Chinese-Australian children, but we know little about how this specific group of children and their families use technologies in their everyday lives at home. One in every four Australian residents, a total of 5.3 million people, was born overseas (2011 Census, ABS, 2014). Chinese immigrants number 319,000, the third largest group after the United Kingdom and New Zealand. Like immigrants from other countries, Chinese tend to live in one of Australia's two largest cities, Melbourne or Sydney. The total population of Greater Melbourne is almost 4 million, and 90,898 of them were born in China (ABS, 2013a). After English, Chinese (Mandarin and Cantonese) is the most commonly spoken language and is used by 4.3% of the population. Chinese-Australians are a recognised sub-group of the population, it is therefore useful to study the parenting practices used by these families. Australian teachers are increasingly being asked to 'partner' with families. Such partnerships

are to be based on "understanding each other's expectations and attitudes and build on the strengths of each other's knowledge" (Department of Education, Employment and Workplace Relations [DEEWR], 2009, p. 12). This paper reports on a small qualitative study undertaken in the Greater Melbourne area that explored parents' and grandparents' views of young Chinese-Australian children's use of technology at home.

The term 'family' is used in this article to mean parents, grandparents and children (three-to-six-year-olds) who live together in the same residence. It is common for Chinese grandparents to reside in the family home with parents and children, and to take responsiblity for caring for the children (Goodfellow, 2010). The term 'technology', indicates a broad range of products, including televisions, computers, tablets, mobile devices and game consoles, which are commonly used by young children. It does not include other domestic technologies like microwave ovens or washing machines which may also be available in the home.

Literature Review

The literature on parental views and perceptions of children's engagement with technology is expanding (for example Nikken & Schols, 2015; Ofcom, 2011, 2012a, 2013; Plowman, Stephen, & McPake, 2009, 2012; Rideout & Kaiser Family Foundation, 2007; Rideout, Hamel, & Kaiser Family Foundation, 2006). Both quantitative and qualitative studies have indicated that parents were comfortable with and encouraged, young children to use a range of technologies at home (Nathanson, 2015; Ofcom, 2011, 2012a, 2013; Stephen, Stevenson, & Adey, 2013). Parents had a sense that their children were more knowledgeable in their use of technologies than they were, and expressed that their children seemed to just 'pick up' technological skills and did not require purposeful teaching. However, the use of technologies at home did not necessarily lead to 'easier parenting'. An American survey of parents with children aged eight and under, found that having a range of technologies at home demanded more complex parenting skills (Wartella et al., 2013).

Parents highlighted a range of concerns related to their children's use of technologies particularly their negative impact on children's physical activity (Education Development Center and SRI International [EDCSI], 2012a, 2012b, Takeuchi, 2011, Wartella et al., 2013). In addition parents were concerned about possible damage to young children's vision, weight

gain from too much sedentary activity, and that regular extended use of technology would hamper their young children's social skills. Online safety and privacy issues were also raised (Takeuchi, 2011).

Family practices were mediated by these views and perceptions (Plowman, McPake, & Stephen, 2008, Zaman et al., in press) and technology was found to serve different roles in different families. In some families technologies served as a babysitter keeping children occupied when their parents were busy; in other families, parents were found to work alongside their children using technology and multimedia as educational tools for learning. Researchers reported that commonly parents insisted that the use of technology should be closely associated with their young children's intellectual development, so that children would gain technological skills and learning, in preparation for school and in the workplace (EDCSRI, 2012a; Takeuchi, 2011). Parents also expected their children to learn more when engaged with technology (Plowman, McPake, & Stephen, 2012; Plowman, Stephen, & McPake, 2010; Rideout et al., 2013; Rideout, Saphir, & Bozdech, 2011; Rideout, Vandewater, & Wartella, 2003). By contrast, Wartella et al. (2013) found that parents were less likely to associate media or technology with education and learning. In their report, 62% of parents said they would give preference to a book, toy or activity, rather than technology and media products when choosing educational opportunities for their children.

Parents were found to use a combination of approaches to mediate their young children's home technology experience (Nikken & Schols, 2015; Ofcom, 2012b). Parents reported restricting children's media usage as they were concerned about access to inappropriate or violent content as well as spending too much time viewing screens. Parents read app descriptions prior to downloading, trialed the apps, observed children's use of apps, installed parental control tools in devices and talked to the children about appropriate technology use (EDCSRI 2012a, 2012b). The majority of parents with children ranging from five-to-15-years had rules for their children's use of television, the internet, mobile phones and gaming (Ofcom, 2012a, 2012b). Parents were concerned about the risks of using technology and media, and therefore although they provided and allowed their children to use technologies, they also took care to protect them from any negative impact (Ofcom, 2012b).

Parenting styles vary, and can be linked to a range of factors including traditional family and cultural values, as well as present day lived experience. Studies of Asian parenting styles

including Chinese-Australian families (see Pang, Macdonald, & Hay, 2015; Wu & Singh 2004) have explained the role and influence of Confucianism which can be described as "a complex set of ethical and moral rules that dictate how a person relates to others and the world" (Huang & Grove, 2015). Playing a leading role in forming the norms of social morality the influence of Confucianism can be seen in personal, family, and social relationships as well as education, and families' educational practices (Huang & Grove, 2015).

Theoretical Framework

Our study was framed using a sociocultural theoretical approach. This approach differs from theories of development that focus on the individual or the social or cultural context as separate entities, rather "individual development must be understood in, and cannot be separated from, its social and cultural-historical context" (Rogoff, 2003, p. 50). Rogoff (2003) explained that "cultural is not an entity that *influences* individuals. Instead, people contribute to the creation of cultural processes and cultural processes contribute to the creation of people" [emphasis in the original] (p. 51). She also argued "*humans develop through their changing participation in the sociocultural activities of their communities, which also change*" [emphasis in the original] (p. 11). This infers that neither community nor children's development are static: they are dynamic and co-constructed (Rogoff, 2003).

In order to understand parents' and grandparents' views of young Chinese-Australian children's use of technology at home we draw on Rogoff's (1995, 2003) three planes of analysis. These three planes aid the framing of our study by orientating our inquiry towards the efforts of individuals (the individual personal plane) their relations with others (the interpersonal plane) and the intuitions they participate in (the institutional plane). Rogoff (2003) explains it is not possible to isolate or segregate these different analytical views as they are inseparable and influence each other. Instead, during data analysis each plane is foregrounded with the other two planes remaining in the background. In this study the views, attitudes and expectations of the parents and grandparents are explored using the personal plane, the interactions that occur between adults and their young children while using technology at home are foregrounded using the interpersonal plane and the family culture and practices are foregrounded using the institutional plane.

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This analytical approach enables researchers to "examine the content, relationship, culture and activities in which children participate, and the tools and artifacts they use" (Robbins, 2005, p. 153). In this study, the use of technologies by young children is understood as a cultural activity that does not exist in isolation. Rogoff (2003) explains the sociocultural "transformation of participation perspective" encompasses the "personal, interpersonal and cultural aspects of human activity" allowing for "different analytic views of ongoing, mutually constituted processes" (p. 52).

Method

Participants

This study aimed to extend our understanding of young Chinese-Australian children's engagement with technologies at home by investigating how the views and attitudes of parents and grandparents are shaping children's technology experiences in home

Table 1. *Participants*

Family	Parent/Grandparent	Focus child (age years/months)	Siblings (age years/months)	Main language spoken at home
1	Kevin (Father)	Mark 5	Sister 3.5	English
2	Mrs Li (Mother)	Sharon 6	Brother 9	Chinese
3	Aunty Wen (Grandmother)	Martin 5	Brother 8	Chinese
4	Aunty Peng (Grandmother)	Grace 5.5	Brother 1.5	English/Chinese
5	Alice (Mother)	Alex 4	Brother 2.5 Brother 7	English
6	Aunty Da (Grandmother)	Aura 5	Sister 3 Brother 7	Chinese
7	Anna (Mother)	Belle 4		English/Chinese
8	Irene (Mother)	Leo 4	Brother 6	Chinese/English
9	Yolanda (Mother)	Lina 6		Chinese

environments. The participants in this study were six parents and three grandparents representing nine Chinese-Australian families with children attending the same Chinese language school (see Table 1). All families had one or more three-to-six-year-olds children, they owned and regularly used, a variety of technologies such as televisions, computers, iPad™s and mobile phones. The children in the study attended kindergarten or school during the week and Chinese language class on Saturdays.

The researchers assigned pseudonyms to correspond to the cultural naming traditions present in traditional Chinese homes wherein it is respectful to prefix names with common nouns. Accordingly, the researchers applied the prefix Aunty to indicate an elderly grandmother and Mrs., to indicate a mother who is older than the first author. The given names Kevin, Alice, Anna, Irene and Yolanda are used without a prefix because these participants were of similar age or younger than the first author.

Interviews

Semi-structured interviews were conducted in either Chinese or English at the school on two consecutive Saturdays. This was convenient as participants were waiting for their children who were attending classes. The recorded interviews with nine parents/grandparents were 15 – 20 minutes in length although many conversations continued after the 'official' interview was completed as participants continued to talk with the researcher while waiting for their children. Comments from these informal conversations were included in our field notes.

Open ended questions were formulated before the interviews took place and were designed to gain insight on participant's perspectives (views, attitudes, expectations) (personal focus); relations with others (interpersonal focus) and family practices (institutional focus) regarding children's use of technology at home. The first author transcribed the interview data verbatim and where necessary provided translation into English.

Data Analysis

Creswell's (2007) data analysis spiral guided the analysis through the stages of

organization and management; reading and reflecting; describing, classifying and finally interpretation and representation. Mind maps and diagrams were used to aid coding and categorization which leading to the development of themes. Finally we revisited our analysis notes to ensure our interpretation of the data was credible and trustworthy. The complexity of families perspectives are largely embedded in multiple layers of beliefs and cultural practices. Rogoff's planes aided our analysis by orientating our enquiry towards the participants' participation in the socio-cultural activity of children's use of technology at home. "We look[ed] directly at the efforts of individuals, their companions and the institutions they constitute and build upon to see … the specifics and commonalities of those efforts, opportunities, constraints and changes" (Rogoff, 1995, p. 159).

Findings and Discussion

The themes that emerged from the data analysis revealed three inter-related dimensions to parents' and grandparents' perceptions of young children's use of technology at home (see Figure 1). Firstly children's use of technology was influenced by parental values and attitudes for example the value of academic learning, secondly children's use of technology was regulated by family rules for example gaining permission to use technology and time limits, and thirdly children's use of technology was depended on the family's provision of different technological devices.
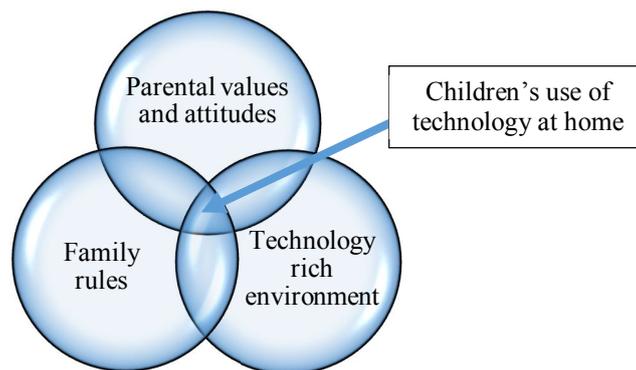

Figure 1. Inter-Related Influences Contributing to Children's Technology Use in the Home

Parental Attitudes towards Children's Use of Technology at Home

Data showed parents and grandparents in this study strongly encouraged the use of technology at home for young children's learning. Eight of the nine families spoke of choosing educational content for their children's technology use. Only one family in this study regarded technology as a source of entertainment alone.

The majority of parents and grandparents in our study believed that children benefitted from technology by gaining common knowledge about places and topics of interest, as well as developing skills in literacy and numeracy. For example, Aunty Wen (Interview 3, Line 42 [I.3, L.42]) explained, "Martin learned a lot… he could narrate all the stories he watched. He would say, 'Nanny, I can tell you the story'...". Anna (I.7) explained that she used technology to teach her children reading and numeracy for half an hour every day. Alice commented, "…I let her watch programs regarding phonics on television, so she knows the words [and sounds] at an earlier age…" (I.5, L.34). Aunty Peng also mentioned that her grandchild increased her English vocabulary by watching television (I.4, L.52).

The use of particular technologies was driven by the learning activities they facilitated. In Mrs. Li's family, her elder son who was nine years old, was allowed to use iPad™ because of school requirements. Her daughter was not allowed to use iPad™ but instead used a computer for her homework. Mrs. Li believed that using iPad™ would affect her daughter's study because she liked to play games. Mrs. Li considered it was more valuable for her daughter to spend time reading books and studying, she explained:

> Sharon uses the iPad^{TM} for playing. So she does not need to use the iPad^{TM}. She needs to finish most of her homework by writing. So she does not use iPad™, and we do not need to buy it for her. There are enough books for her to read, and she can complete her homework on the computer. Why do we need to waste money to buy an iPad™ for her? It is not necessary (I.2, L.14-16).

By contrast, Yolanda linked the computer to online leisure activities, which were not related to formal learning. "She [her daughter] does not need to work online. As parents, we feel uncomfortable after seeing children are playing too many online games. Highly addicted to it! A Chinese proverb says, too much playing creates a misplaced soul" (I.9, L.28 & 42).

Parents and grandparents in this study valued what children could learn from technology. This is consistent with other research where media usage was considered an essential educational tool (Rideout et al., 2006; 2007). In Rideout's latest work (2014) a representative survey of 1577 parents of children ranging from two-to-ten-year-olds undertaken in the United States of America, she found that there was a relationship between children's learning and parental choices about content; she also found that children using technology were likely to ask more informed questions. In our study families placed a high demand on children's academic achievement and children's interests were not seen as a priority. This aligns with what Huang and Gove (2015) term as an Asian parenting style linked to Eastern philosophy and Confucianism. Wu and Singh (2004) explain this as parents having "developed a very strong desire for their children to succeed in their schooling because of the strong family relationships emphasized by dynastic appropriations of Confucianism" (p. 33). This places heavy study loads upon students.

Family Rules

Parents and grandparents used a range of strategies to mediate children's technology usage. For example five of the nine families required children to ask permission before engaging with technology and all of the nine families had some form of restricted access to technology. Restricted access was often related to the completion of home-work tasks for example, Yolanda did not permit Lina to use technology at all during the week due to homework commitments (I.9), Mrs. Li restricted Sharon's technology use during the week to school related tasks (I.2), and Aunty Wen required Martin to complete school related tasks before using technology (I.3). After dinner and before going to bed were common times children used technology (see Table 2).

Participants reported that they used a range of techniques to ensure restricted use of technology was adhered to. Aunty Da explained that both she and the children's parents would hide the iPad™ in different places to avoid unsupervised use (I.6). Yolanda reported a similar practice (I.9). Kevin described how he set passwords for mobile devices to ensure permission was obtained before use (I.1). Both Kevin and Mrs. Li shared examples of when they stopped their children using mobile devices 'secretly' without permission. Mrs. Li

Table 2. *Time Spent Using Technology*

Family	Age of child years/months	Time spent using technology
1	Mark 5	1.5 hours per day around dinner time.
2	Sharon 6	Uses computer for homework only, watches television on a Saturday night for an hour or during school holidays.
3	Martin 5	Approximately 1 hour per day after school work is completed.
4	Grace 5.5	30 min to 1 hour per day watching television around dinner time. Up to 15 minutes per day using iPad™ before going to bed.
5	Alex 4	1 hour per day during the week. More in the weekend.
6	Aura 5	1 hour per day.
7	Belle 4	1.5 hours watching television per day, longer during the weekend.
8	Leo 4	30 min – 1 hour after dinner per day
9	Lina 6	1 hour on Friday and in the weekend. Not at all during the week.

explained "I immediately stop her and warn her not to do it again… If you violate what mother told you to do you need to face the consequence and receive punishment" (I.3, L.30). When technology time was up participants explained that they were not willing to be challenged by their children, for example Aunty Da explained "We have no challenge. We can stop her at any time from watching and using the iPad™" (I.6, L96). Anna also stated "No challenge at all. I ask her to stop it, and she must stop it" (I.7, L.50). Kevin commented "we expect they [Mark and his sister] realise that it is routine in their daily life … I think if the parents just give the iPad™ without any rules [it] will be a problem" (I.1, L.22). The use of technology while eating including watching television was discouraged by participant families. However although Aunty Wen was critical of the practice, she did allow it sometimes (I.3).

Our findings are consistent with those from other research. An American study which surveyed 810 parents of three-to-ten-year-olds found that two-thirds of the participants restricted their children's technology use on a case by case basis depending on the different technologies used (Takeuchi, 2011). Rideout and Kaiser Family Foundation (2007) reported that 65% of parents closely monitored their children's media activity. The study involved 1008 parents of two-to-seventeen-year-olds with data generated through random-digit-dial telephone surveys and interviews. The finding also showed that parents maintained a balance

between children's media and non-media activities. Ofcom (2012b) states that parental control enables young children to explore internet freely and keep safe at the same time, to enjoy the benefits of using technologies while avoiding negative influences.

Exercising control has a significant role in limiting the amount of viewing time in front of the screen, which is highly recommended by researchers and popular among parents (Kids & Media, 2011; Ofcom, 2013; Rideout et al., 2013). The joint position statement published by the National Association for the Education of Young Children and the Fred Rogers Center for Early Learning and Children's Media at Saint Vincent College (NAEYC & FRC) (2012) recommend "parents limit screen time to fewer than two hours per day for children aged 2 through 5" (p. 3). The ideal situation would be that the parents set up the rules and their children abide by them. In our study, children's screen time was within the limits recommended by NAEYC & FRC. In addition, families expected their children to abide by family rules to stop when requested and not to challenge rules or negotiate alternatives. Such expectations could be related to the cultural values of family hierarchy and harmony which are central concepts in Confucianism (Huang & Grove, 2015).

Technology Rich Environment

Children in this study lived in technologically rich environments. Participant families owned a television, and a range of other technologies including smart phones, laptops or computers, and tablets (see Table 3). However, at the time of the study Yolanda's family did not own a television for a three month period due to moving house.

Children from five of the nine families enjoyed sole use of an iPad™ or tablet, however this did not mean they had unrestricted access to its use as family rules prohibited that. Each of these five families had children attending primary school which may have influenced them to provide children with this technology to meet educational and school requirements. Aunty Peng explained that there were five iPad™s in their household, each adult used one and there was one extra for the children to share. She went on to tell that her family liked to keep up with modern technology (I.4). Alice's family also owned five iPad™s, two for adults and one for each of the children (I.5). In Aunty Da's family the two older children had their own laptops and the younger child was given an iPad™ to avoid conflict between the children (I.6).

Similar reasons were given by Mrs. Li (I.2) and Aunty Wen (I.3). In contrast in Kevin's, Anna's, and Yolanda's families technology was shared between children and adults (I.1, 7, & 9).

Table 3. *Technologies Available in Participant Households*

Participants		Technologies		
Family	Family members in the home and ages of children	Television, computer, smart phone, tablet, iPad™	Additional technologies	Technologies for sole use by children
1.Kevin	Parents, children 3.5 and 5	all		
2.Mrs Li	Parents, children 6 and 9	all		Computer
3.Aunty Wen	Grandparents, parents, children 5 and 8	all		iPad™
4.Aunty Peng	Grandparents, parents, children 1.5 and 5.5	all		
5.Alice	Parents, children 2.5, 4 and 7	all	X-box	iPad™
6.Aunty Da	Grandmother, parents, children 3, 5 and 7	all		iPad™
7.Anna	Parents, child 4	all		
8.Irene	Parents, children 4 and 6	all	Game console	Tablet and game console
9.Yolanda	Grandmother, parents, child 6	No television		iPad™

The young children in our study were living in technology rich environments, comprising both traditional and recent devices. However few families owned game consoles, a finding similar to the ACMA (2009) study. Living in a technology rich environment did not

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necessarily mean that the children possessed or had regular access to technology at home. The families' everyday practices and in particular family rules impacted children's use and the overall availability of technological devices. Plowman, Stevenson, McPake, Stephen and Adey (2011) also found that ownership of technology did not guarantee children's access to and use of technology. The parents and grandparents were the ones who established the family culture responsible for determining children's technology use. Although the use of mobile devises was evident, it was television that dominated children's use of technology. The children in our study were less likely to use computers and were more likely to be familiar with touch-screens such findings were also evident in other studies (see Rideout et al., 2013; Stephen et al., 2013). In our study technology use did not dominate children's lives. Even though the children lived in technology rich environments, the use of technologies was strictly controlled.

Conclusion

The sociocultural theoretical approach used in this study has enabled us to investigate the views of parents and grandparents related to young Chinese-Australian children's use of technology in their homes. Rogoff (2003, p. 58) explains that "together the interpersonal, personal and cultural-institutional aspects of the event constitute the activity" and that no aspect can be studied in isolation from the others. She argues that culture constantly changes from one generation to the next and varies across communities; the natural, commonplace daily practices in one community or one family, form distinct cultural patterns. In this study of Chinese-Australian children's use of technology at home we found that these children lived in technologically rich environments; that family rules and practices were used to help young children maintain a balance between technological and other activities; and that parents and grandparents valued the 'educational' use of technology.

Young children in this study used a limited number of technologies within a restricted timeframe. This suggests that the presence of technologies in home does not guarantee the unlimited access in homes a finding similar to that of Stephen et al. (2013). Our findings also resonate with Wartella et al. (2013) in that children did not drive the use of technology in the

family, but the family context shaped their technology behaviour. This finding differered from other studies were techology was understood to play an essential role in the life of the family (Rideout et al., 2013; Takeuchi, 2011; Wartella et al., 2013).

Technology was mainly used in these Chinese-Australian families to facilitate learning both formally when related to school, and informally to aid language and numaracy development. These findings seemed to align with the families' Chinese heritage especially the Confucianism belief system with its emphasis on education and family dynamics in fostering the high achievement of children (Huang & Gove, 2015; Wu & Singh, 2004). Children's early literacy development was important to these families and was well supported. Technologies were considered valuable educational parenting tools.

Plowman (2014) points out that "learning at home is a co-constructed outcome of the activities and cultural practices that children engage in with others and consists of the intergenerational, informal practices that suffuse family activates" (p. 7). Children not only learn how to use technologies and gain knowledge from technological activities, but also learn the norms, values and culture that technology brings into their homes. The Harvard Family Research Project (2014) confirmed that family interactions with technology helped preschoolers "shape their language and literacy development, as well as their general curiosity for exploring and learning new concepts" (p. 4).

Understanding the home practices of Chinese-Australian children related to the use of, and access to, technologies at home is of interest to teachers and others working with young children as they seek to partner with families to provide the best possible education for the young children in their care building on the knowledge and skills they gain in their home environments. In addition our small study highlights some of the localized complexities that shape and are shaping Chinese-Australian children's engagement with technologies in an ever increasing digital world.

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