

# INVESTIGATING 3-5 YEAR-OLD'S PARENTS' ATTITUDES TOWARDS USE OF IPAD

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## Abstract:

*This paper investigated 3 – 5 year old children's parents' attitudes towards use of iPad in Child Care Centres. A survey was used and eighty parents participated in this study. The major findings include most of the parents agreed that Apps designed for preschool educational purposes was indeed assistive of children's learning, and the most participating parents thought that use of educational media could be used to teach literacy, numeracy, science, and art. However, they did not agree that educational media could be used to teach physical education. Moreover, it shows that the most parents thought that use of educational media could be used for children's cognitive development, fine motor skills development and language development. However, they did not agree that educational media could be used for children's social development and gross motor skills development. Early childhood educators and parents may find this paper useful about the use of iPad in early childhood settings.*

## Parents and Use of iPad

The role of educational media, such as use of iPad, in the current early childhood educational environment is becoming more prevalent and accepted in terms of being a mainstream pedagogical tool. In their book, *Born digital: Understanding the first generation of digital natives*, Palfrey and Gasser (2008) describe that currently we are undergoing the most rapid technological transformation in terms of information. Children are being born into a digital age where by how they gather and interpret information will be different to previous generations, including their parents. In order to effectively educate the 'digital child' parents need to address their own attitudes towards use of iPad and how the technological advancements fit within their comprehension of children and the concept of early childhood (Palfrey & Gasser, 2008).

Within the new digital age, parents have access to and are allowing children to be exposed to a wider variety of educational media alternatives, such as iPad, to enhance and build on children's experiences and develop their own pedagogical practices (Colker, 2011). Historically used educational media devices such as television and standard desktop/laptop computers still have a prevalent place in children's homes and educational settings (Blackwell, Lauricella, Wartella, Robb & Schomburg, 2013). However there are multiple issues when using such devices with preschool aged children; television is a passive/one way communication device (Rosen & Jaruszewicz, 2009) which is opposite to the play based active learning promoted by early childhood educators (Fleer, 2013). Desktop computers are problematic in terms of children's fine motor control when using a standard mouse/keyboard setup. Therefore a device that uses a gestural interface such as that of an iPad suits the developmental characteristics of active engagement coupled with developmentally appropriate fine motor controls (Siegle, 2013).

With growing curricula expectations that educational media, such as iPad, become a part of mainstream pedagogy, combined with the fall in price of technological products, has led to a proliferation of educational media alternatives being brought to the attention of children (Fleer, 2011). According to Jay Blanchard (2010) and Scooter et al. (2001), cited in Shoukry (2013), there are a perceived number of benefits of educational media for children, this includes improved: cognitive and social development; self-concept and attitudes to learning; spoken communication and cooperation; leadership skills and interactional opportunities; visual attention and processing speed.

But not all parents are welcoming of the integration of educational media and the ensuing technologies into early childhood settings. Furthermore, there is an undercurrent that educational media, particularly technological products are drastically altering the landscape of early childhood to its detriment (Plowman, McPake & Stephen, 2010).

There are a variety of reasons that parents, children's first educators, will have differing views about the role and value of screen based media in early childhood education. The Unified Theory of Acceptance and Use of Technology (UTAUT) (as cited in Blackwell et al., 2013) explains that four major constructs influence people's use with technology: performance expectancy (will the technology achieve what I want it to achieve), effort expectancy (how easy is it to use the technology), social influence (how do other people in the same situation use technology) and facilitating conditions (will I get help to use and access the technology). In this case it is the parent who is deciding whether the technology is suitable for use with their children. Hence, before parents allow their children to be exposed to new forms of technology need to decide if the technology will assist the child's learning (performance expectancy), be easily useable given the developmental characteristics of the child and my own understanding of the technology (effort expectancy), gauge how and why other parents/educators use technology (social influence), and if they will be supported in terms of access and understanding of how to use the technology (facilitating conditions).

Therefore, this paper investigated 3-5 year old children's parents' opinions about the use of iPad in early childhood education from the following areas: (a) parents' knowledge about Apps, (b) *Attitudes towards Apps designed for preschool educational purposes are indeed assistive of children's learning*, (c) Attitudes towards the use of touch screen devices for pre-schoolers, (d) Attitudes towards the use of educational media for teaching literacy, numeracy, science, art and physical education, and (e) Attitudes towards the use of educational media for children's development in the domains of cognitive development, gross motor skills development, fine motor skills development, language development, and social development.

## Method

A survey was used and eighty parents participated in this study. As Gay and Airasian (2003) and Leedy and Ormrod (2005) stated that survey research involved acquiring information about one person or a group of people. Their characteristics, options, attitudes, or previous experiences were asked through questions and their answers were analysed. The purpose of a survey research was to learn about a population by surveying a sample of the population. The intention of the surveys for the present study was to investigate the attitudes from parents. The research instrument for the survey for parents was developed after analysing the responses from the parents from the pilot study. Out of the 80 parents, 59 (73.8%) were female, and 21 (26.3%) were males. The age range was from 26 to 50 years old, with 7.5% being 26-30 years old, 28.8% being 31-35 years old, 51.3% being 36-40 years old, 10% being above 41 years old. Forty parents were from South Australia and forty parents were from Northern Territory.

The questionnaire survey was administered with the assistance from the child care centres. The survey was conducted from May to September, 2012. Survey instruments, in hard copy, were handed out to the participants and collected from the participants later with the assistance from the child care centres.

Data were transcribed, entered and the researcher took approximately 4 weeks to enter all the written answers into the Statistical Package for Social Science (SPSS), and spent another week to confirm all the data were entered correctly. Data were analysed using the Statistical Package for Social Science (SPSS) and alpha was set at 0.05 for purpose of the present study.

## Results

### Parents' skills of using technology

All the parents used technology at home, and their skills of using technology were presented, using a 5-point scale (1 = novice user, and 5 = expert user).

According to their self-reports, 3 parents (3.8%) rated themselves 2, 42 (52.5%) parents rated themselves 3, 20 parents (25.0%) rated themselves 4, and 15 parents (18.8%) rated themselves 5 (see Figure 5.2). The mean of the 80 parents was 3.49 (see Table 1). This variable was referred as parents' skills of using technology.

Table 1  
*Means and SD of parents' skills of using technology*

	Mean	SD	N
Parents' self-rated skills of using technology	3.49	.84	80

### Knowledge about Apps

Parents' confidence of knowing Apps was also rated on a 3 point scale : 1= I don't know what an App is, 2 = I have heard what an App is, but I'm not totally sure, and 3 = I am very confident that I know what an App is. It was found all the participating parents knew Apps to a degree, with 87.5% choosing they were very confident about what an App was.

### Attitudes towards Apps designed for preschool educational purposes are indeed assistive of children's learning

The participating parents were asked to rate their agreement level towards whether apps designed for preschool educational purposes is indeed assistive of children's learning, on a 5 point scale: 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

It was found that most of the parents agreed that Apps designed for preschool educational purposes was indeed assistive of children's learning,  $\mu = 3.79$ ,  $\sigma = 0.87$  (see Figure 1).

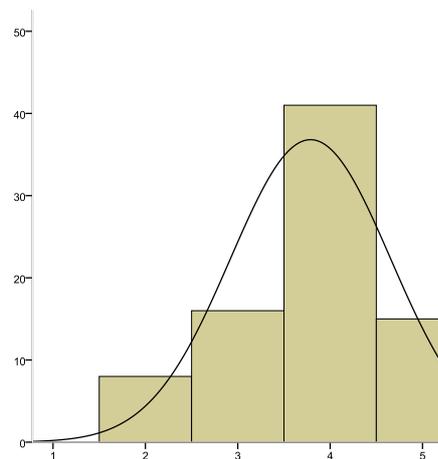
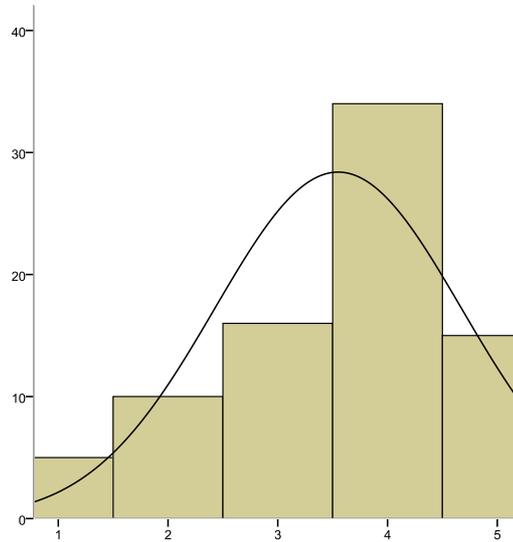


Figure 1. Parents' attitudes towards Apps designed for preschool educational purposes are indeed assistive of children's learning devices (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree).

### Attitudes towards the use of touch screen devices for pre-schoolers

This section firstly reports the parents' opinions towards the use of touch screen devices, then it presents their knowledge about Apps and the usefulness of Apps designed for preschool educational purposes. Detailed reasons of their opinions are also reported.

It was found that most of parents thought use of touch screen devices were appropriate for preschool age children,  $\mu = 3.55$ ,  $\sigma = 1.12$  (see Figure 2).



Figur 2. Parents' attitudes towards Use of touch screen devices (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree).

Twenty-seven (27) out of the 80 parents also presented reasons for their attitudes towards the use of touch screen devices. The reasons were categorised as following, and the number in brackets represents the frequencies of the factors.

- Reason 1: children's age (3)
- Reason 2: being unfamiliar with technology (2)
- Reason 3: children' daily use (3)
- Reason 4: children's communication and interaction (3)
- Reason 5: easy use of screen (8)
- Reason 6: children's enjoyment (4)
- Reason 7: educational use (5)
- Reason 8: use as a reward (1)
- Reason 9: useful for children's development (2)
- Reason 10: life-long learning for children (3)

Table 1 shows an example of the parent's response to the question "Do you agree that touch screen devices, such as Apple's iPad, Sony's Tablet S or Samsung's Galaxy Tab are appropriate for use by children aged 3 to 4 years of age? Please explain your reasons why?". The parent's response "Young children... " was categorised into Reason 1, as "Young" matched the classification. Moreover, "...find direct contact easier to control. Get frustrated with conventional screen" was categorised into Reason 8, as "easier to control" and "screen" was categorised into Reason 8.

Table 1

*An example of parent’s response “Do you agree that touch screen devices, such as Apple’s iPad, Sony’s Tablet S or Samsung’s Galaxy Tab are appropriate for use by children aged 3 to 4 years of age? Please explain your reasons why?”*

**Question:** *Do you agree that touch screen devices, such as Apple’s iPad, Sony’s Tablet S or Samsung’s Galaxy Tab are appropriate for use by children aged 3 to 4 years of age? Please explain your reasons why*

**Parent #4:** *Young children (Reason 1) find direct contact easier to control (Reason 8). Get frustrated with conventional screen (Reason 8).*

*Interpretation: This table illustrates categorises Reasons 1, and 8.*

**Attitudes towards the use of educational media for teaching literacy, numeracy, science, art and physical education**

This section reports the participants’ parents’ attitudes towards the use of educational media for teaching literacy, numeracy, science, art and physical education.

Table 2 shows that the most parents thought that use of educational media could be used to teach literacy, numeracy, science, and art. However, they did not agree that educational media could be used to teach physical education.

**Table 2 Parents’ opinions about the use of educational media teaching literacy, numeracy, science, art and physical education (Means)**

	Mean	SD	N
• numeracy/mathematics	4.19	0.73	80
• literacy/language	4.13	0.64	80
• science	3.60	0.84	80
• art	3.45	1.03	80
• physical education	2.30	1.00	80

*Note: (a) The means were presented in order, from highest to lowest using a 5 point scale anchored (1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). (b) A repeated measures ANOVA on the above means revealed a significant effect,  $F(4, 316) = 112.06, p < .01$ .*

Table 3 presents the percentages of parents’ opinions attitudes towards the use of educational media for teaching literacy, numeracy, science, art and physical education. It was found that more than half of the parents agree that use of educational media could be used to teach numeracy/mathematics (86.3%), literacy/language (87.6%), science (63.8%), and art (57.6%). It was also noted that most the parents (57.5%) did not think use of educational media could be used in teaching physical education.

Table 3

*Parents' opinions about the use of educational media teaching literacy, numeracy, science, art and physical education (percentages)*

	1	2	3	4	5
• numeracy/mathematics	0	2.5	11.3	51.3	35.0
• literacy/language	0	1.3	11.3	61.3	26.3
• science	1.3	11.0	25.0	55.0	8.8
• art	5.0	13.8	23.8	46.3	11.3
• physical education	25.0	32.5	31.3	10.0	1.3

Note: (a) All above figures represents percentages within each item.

(b) 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree

Attitudes towards the use of educational media for children's development in the domains of cognitive development, gross motor skills development, fine motor skills development, language development, and social development

This section reports the participants' parents' attitudes towards the use of educational media for children's development in the domains of cognitive development, gross motor skills development, fine motor skills development, language development, and social development.

Table 4 shows that the most parents thought that use of educational media could be used for children's cognitive development, fine motor skills development and language development. However, they did not agree that educational media could be used for children's social development and gross motor skills development.

Table 4

*Parents' opinions about the use of educational media for children's development in the domains of cognitive development, gross motor skills development, fine motor skills development, language development, and social development (Means)*

	Mean	SD	N
• cognitive development	4.21	0.88	80
• fine motor skills development	3.93	0.90	80
• language development	3.46	0.90	80
• social development	2.45	0.94	80
• gross motor skills development	2.01	0.96	80

Note: (a) The means were presented in order, from highest to lowest using a 5 point scale anchored (1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). (b) A repeated measures ANOVA on the above means revealed a significant effect,  $F(4, 316) = 142.33, p < .01$ .

Table 5 presents the percentages of parents' attitudes towards the use of educational media for children's development in the domains of cognitive development, gross motor skills development, fine motor skills development, language development, and social development. It was found that more than half of the parents agree that use of educational media could be used in the domains of cognitive development (83.8%), fine motor skills development (76.3%), and language development

(58.8%). It was also noted that most the parents did not think use of educational media could be used in the domain of children’s gross motor skills development (73.8%) and social development (57.6%).

**Table 5 Parents’ opinions about the use of educational media for children’s development in the domains of cognitive development, gross motor skills development, fine motor skills development, language development, and social development (percentages)**

	1	2	3	4	5
• cognitive development	1.3	3.8	11.3	40.0	43.8
• fine motor skills development	2.5	3.8	17.5	51.3	25.0
• language development	2.5	13.8	25.0	52.5	6.3
• social development	13.8	43.8	27.5	13.8	1.3
• gross motor skills development	35.0	38.8	16.3	10.0	0

Note: (a) All above figures represents percentages within each item.

(b) 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree

## Discussion and Conclusion

In relationship to the reason that people use technology, the UTAUT cited in Blackwell et al. (2013) indicates that effort expectancy is one of the four key determining factors in peoples use or non-use of technology. It was found in this study that 96.3% of parents indicated that they were between a mid to expert user of technology and that 87.5% of parents were very confident about what an App was. Therefore parents have exposed themselves to technology and feel confident when using technology for themselves. This is consistent with Cocker (2011)’s statement that parents have access to technology and through their own experiences are allowing children to be exposed to a wider variety of educational media alternatives, such as iPad, to enhance and build on children’s experiences and develop their own pedagogical practices. In addition, the most commonly listed reason as to why a gestural interface device is appropriate for young children was the “easy use of screen”, thus appropriately linking effort expectancy for the child.

Additionally within the UTAUT cited in Blackwell et al. (2013) another key factoring when choosing to use or not use technology is performance expectancy. It was found that most of the parents agreed that Apps designed for preschool educational purposes was indeed assistive of children’s learning. Moreover, the participating parents’ thought use of touch screen devices were appropriate for preschool age children. This finding is consistent with Fleer (2011) and Plowman, McPake and Stephen (2010)’s findings that the use of iPad and its touch screen is appropriate within early childhood. In terms of performance expectancy for curricula domains participating parents thought that use of educational media could be used to teach literacy, numeracy, science, and art. However, they did not agree that educational media could be used to teach physical education. Moreover, in terms of child development, it shows that the most parents thought that use of educational media could be used for children’s cognitive development, fine motor skills development and language development, which is consistent with findings by Jay Blanchard (2010) and Scooter et al. (2001), cited in Shoukry (2013). However, contradicted those findings as the participating parents did not agree that educational media could be used for children’s social development.

There are limitations to the present study. The data were drawn from 80 parents in South Australia and Northern Territory in Australia. A number of research directions can be identified. Data need to be gathered from other states and territories. Further research will be needed to understand the educators’ and child care directors’ attitudes towards the use of iPad in educational settings to

compare their attitudes and therefore develop strategically the teaching approaches with the use of iPad in early childhood settings.

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