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Early Childhood Educators' Attitudes towards Use of Educational Media in Young Children's Learning in Australia

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Abstract: This paper examined early childhood educators' attitudes towards the use of educational media in young children's learning in child care centres in Australia. This study firstly investigated what educational media are currently used in child care centres in Australia. Then a questionnaire was administrated to twenty early childhood educators in three child care centres to explore their attitudes towards the use of educational centres in child care centres. The major findings include a) children were provided access to some media devices such as television, DVD player, computer, Internet and Smartboard in child care centres; b) educators thought the use of educational media could be used to teach literacy, numeracy, science, art and physical education, and c) educators agreed the use of educational media could be used within children's five domains of development, which include cognitive development, gross motor skills development, fine motor skills development, language development, and social development. Early childhood educators and parents of young children will find this paper useful in understanding early childhood educators and their use of educational media in educational settings in Australia.

Keywords: attitudes, iPads, educators, early childhood education

1. Introduction

In Australia, educational media was referred as 'the design, development, implementation and evaluation of systems, methods and materials to achieve effective outcomes and improve the process of human learning' (Australian Society for Educational Technology, 1975). Within the scope of educational media is the concept of educational technology, which 'is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources' (Orey, McClendon & Branch, 2009, p. vi). In earlier years (late 1930s-1960s), the common form of educational media was the media of films and television, which was only used in higher education environments. The impact of these technologies on university education is the simple fact that they could be used within an educational setting (Hedberg & McNamara, 2002). Since the 1970s, educational media started to be used in primary and middle school environments in Australia; and some individual teachers began to explore the relationships between technology and learning, although most teachers did not embrace the ideas of implementation of educational media into classrooms. Nevertheless, the understanding of the tools of mass media and the entertainment industry were seen as providing an awareness to different students so that the students would be provided with practice and understanding of the skills and would be more appropriately kept in pace with the technology advancement (e.g. Ausburn & Hedberg, 1981; Maggs & Ray, 1985). Nowadays, educational media appeared as instructional technology or computer based learning (Hedberg & McNamara, 2002). Moreover, educational media is concerned with a wide range of media, including software and hardware development (e.g. McDougall & Boyle, 2001), exploration of new and different approaches to teaching and learning with educational media (Romeo & Walker, 2001); multimedia, teleteaching and web-based teaching and learning (Allan & Ainley, 2000; Herrington & Knibb, 1999; Winter, 2001). Further, more academic researchers (e.g. Franklin & Peat, 2001; Hedberg & McNamara,

2002) have conducted different studies to consider the strengths of diversity of various educational media in teaching and learning.

The above indicates that educational media has been co-opted into teaching and learning for a long period of time, and many studies have been conducted of using them effectively in the educational environments so that their negative potential is averted and their positive potential is boosted within school or university learning environment. However, most research were focused only in the school or university education system, and very limited study has been undertaken about the use of educational media within early childhood education environment, such as home, childcare or kindergarten. Part of the reason that there are limited studies done on the use of educational media in early childhood settings is that it is not recommended that children under the age of three use computers. In that children younger than three learn through their bodies: their eyes, ears, mouths, hands, and legs and that the developmental skills of these children are learning to master are crawling, walking, talking, and making friends (Haugland, 2000).

In realistic terms, it is the educators of young children who will determine if children are exposed to educational media within the early childhood learning environment. Therefore, the attitudes early childhood educators have towards use of technology and their corresponding ability to teach with use of educational media that children will be exposed too. Attitudes have been addressed as linking affective domains to reactions; hence attitudes influence behavior (Lee, 2005). Educators' attitudes towards teaching with teachnologies are strongly associated (Lee, 2005).

Moreover, due to the relative lack of confidence of many early childhood educators and parents of early childhood aged children in their knowledge of use of educational media; there often is a resultant pedagogical practice of 'teaching the way you were taught', hence diminishing opportunities for new pedagogical opportunities (Perry et al., 2008). This includes the concern that children will not get exposure to new technological tools that may assist learning.

The use of educational media within early childhood settings is a controversial topic and one that creates debate amongst those with stakes in early childhood education (policy makers, early childhood directors and educators, as well as parents). As stakeholders they will act as a filter to children's access to educational media, determining the exposure that children will have and scaffolding the way it is used.

2. Methods

Twenty early childhood educators in three child care centres in Australia participated in this research. Out of the twenty early childhood educators, 3 (15%) were male, and 17 (85%) were female. Seventeen participants provided their ages, ranging from 18 to 59 years old.

A questionnaire was developed and administered to the participants. There are four sections in this questionnaire: children's access to education media in child care centre, educators' use of educational media, identification of the most important reasons for integrating educational media into child care centres; and their attitudes towards the use of educational media in teaching literacy, numeracy, science and physical education and to promote 3-4 year old children's development in the domains of cognitive development, gross motor skills development, fine motor skills development, language development, and social development.

The questionnaire survey was administrated with the assistance from the child care centres. The site 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.

3. Results

The present study was conducted in three child care centres. Table 1 presents the number and percentage of the children who had been given access to the media devices in different care centres.

Table 1: Access the media devices within child care centres/classrooms (percentage)

	Centre A (n = 6)	Centre B (n = 8)	Centre C (n =6)
• television	0	87.5	0
• DVD player/Blue ray player	0	75	0
• computer (laptop or desktop)	100	87.5	0
• Internet	100	62.5	0
• Smartphone	0	0	0
• video games (e.g., Xbox, Playstation, or Wii)	0	0	0
• Video iPod or similar device	0	0	0
• handheld video game player (e.g., GameBoy, PSP or Nintendo DS)	0	0	0
• iPad or similar tablet device	0	0	0
• cable television (Foxtel/Austar)	0	0	0
• Kindle, Nook or similar e-Reader	0	0	0
• Smartboard	100	0	0

Note: N=20

For the five devices (television, DVD player, computer, Internet and Smartboard), the participating directors and educators in Centre A and Centre B were asked to choose from a 6 point scale (1 = have never been used, 2 = at least once a year, 3 = at least once every six months, 4 = at least once a month, 5 = at least once a week, and 6 = at last once a day) in the number of times the media devices were used by the participating children in the child care centres in Centres A and B. It was found that the five devices were used at least once every six months in the child care centres/classrooms in Centres (see Table 2).

Table 2: Access the media devices within child care centres/classrooms A and B (means)

	Mean	*SD*	*n*
• television	3.29	1.64	14
• DVD player/Blue ray player	3.15	1.75	14
• computer (laptop or desktop)	3.79	2.22	14
• Internet	3.57	2.07	14
• Smartboard	3.14	2.57	14

Note: N = 20

Table 3 shows that the educators and directors agreed that (a) educational media was an urgent priority; (b) educational media should be integrated in child care centres; (c) educators' abilities to teach should be enhanced; and (d) educational media should be used in the future. It was also noted that educators believed that there is not enough funding to incorporate educational media into child care centres.

Table 3: Educators' view towards educational media (means)

	Mean	*SD*
educators and directors' view towards educational media is an urgent priority	3.35	1.18
educators and directors' view towards educational media's integration in child care centre	3.65	1.14
educators and directors' view towards educational media's enhancement of educators' abilities to teach	3.85	0.75
educators and directors' view towards funding to incorporate educational media into child care centres	2.65	1.04
educators and directors' view towards future use of educational media	3.65	0.75

Note: The means were presented using a 5 point scale anchored (1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree).

The participating educators were also asked to provide the reasons for integrating educational media into child care centres. Four set reasons were provided for the educators to choose and they were also allowed to add any other reasons.

The four provided reasons were (a) familiarising children with the world of new technologies, (b) the curricular and educational benefits, (c) the recreational value to the child, and (d) parental expectations.

Table 4 presents the percentages of the 4 reasons. It was found that educators agreed that "familiarising children with the world of new technologies", "the curricular and educational benefits" were the main reasons for integrating educational media into child care centres, and they also agreed that "the recreational value to the child" and "parents expectations" were not the reason for the integration.

Table 4: Reasons for integrating educational media into child care centres (percentages)

	Yes	No
• familiarising children with the world of new technologies	85	15
• the curricular and educational benefits	85	15
• the recreational value to the child	30	70
• parental expectations	10	90

Note: N = 20

Table 5 shows that the most educators thought that use of educational media could be used to teach literacy, numeracy, science, and art, and physical education in early childhood education.

Table 5: Educators' opinions about the use of educational media teaching literacy, numeracy, science, art and physical education (Means)

	Mean	*SD*	*N*
• numeracy/mathematics	4.30	.73	20
• literacy/language	4.30	.73	20
• science	4.20	.77	20
• art	4.10	.91	20
• physical education	3.40	1.14	20

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, 76) = 13.45, p <.01.

Table 6 presents the percentages of educators' opinions attitudes towards the use of educational media for teaching literacy, numeracy, science, art and physical education.

Table 6: Educators opinions about the use of educational media teaching literacy, numeracy, science, art and physical education (percentages)

	1	2	3	4	5
• numeracy/mathematics	0	5	0	55	40
• literacy/language	0	5	0	55	40
• science	0	5	5	55	35
• art	0	10	5	50	35
• physical education	0	30	20	30	20

Note: (a) All above figures represents percentages within each item.
(b) 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree

Table 7 shows that the most educators thought that use of educational media could be used for children's cognitive development, fine motor skill development and language development, social

development, and gross motor skills development.

Table 7: Educator's 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	4.40	0.75	20
• language development	4.10	1.02	20
• fine motor skills development	3.95	1.15	20
• social development	3.65	1.14	20
• gross motor skills development	3.25	1.25	20

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, 76) = 9.14, p <.01.

Table 8 presents the percentages of educators' 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 8: Educator's 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	0	5	0	45	50
• language development	5	30	20	25	20
• fine motor skills development	5	10	5	45	35
• social development	5	5	0	55	35
• gross motor skills development	5	15	10	50	20

Note: (a) All above figures represents percentages within each item.
(b) 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree

4. Discussion, Conclusion and Future Research

The present study reported the early childhood educators' survey findings from the participating child care centres in Australia. Twenty educators participated in the survey.

In regards to children's access to educational media in child care centres, it was found many children were provided access to some media devices such as television, DVD player, computer, Internet and Smartboard. This finding are consistent with the existing literature such as Perry et al (2008) that early childhood educators do not use a lot of available educational media in their classroom. Partially it was because of the funding provided by the child care centres; however, it was noted in this study that educators needed training to use and teach with these technologies.

It was found that educators agree that educational media was an urgent priority, educational media should be integrated in child care centre, educators' abilities to teach should be enhanced and educational media should be used in the future. This result agrees with the statement that educational media can be used as instructional technology in educational settings (Hedberg & McNamara, 2002).

Educators agreed that "familiarising children with the world of new technologies", "curricular and educational benefits" were the main reasons for integrating educational media into child care centres, and they also agreed that "parents' expectations" were not the reason for the integration. Educators agreed it was important for educators to be trained in the use of educational media. The present study is consistent with Orey et al (2009)'s conclusions that educators need practice to facilitate learning and improving their performance of using educational media.

In addition to the above findings, this study also finds some other findings in relation to the use of educational media in different curriculum areas as well as young children's development.

For example, educators' attitudes towards the use of educational media for teaching literacy, numeracy, science, art and physical education were reported. Most educators agreed the use of educational media could be used to teach literacy, numeracy, science, art and physical education.

Moreover, this research also studied the educators' 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. Most educators thought the use of educational media could be used for children's five domains developments. This finding is consistent with the statement that educational media can help with children to achieve effective outcomes and improve the process of human learning (Australian, society for Educational Technology, 1975).

There are some limitations of this research. This study was conducted only in three child care centres in two states in Australia. Only twenty educators participated in this research. Therefore, further study has been developed already to conduct an online questionnaire survey to more early childhood educators in all states and territories in Australia to find more information about the educators' attitudes towards use of educational media in child care centres and how to develop a more programed professional development programs to train the early childhood educators.

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