

# Building Literacy through iPad Technology

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**Abstract:** This research explores the use of the iPad as a literacy learning tool in one public kindergarten. The purpose is to improve teacher practice by asking the research question ~ “How can we use the iPad to enhance Literacy development in children attending an Auckland kindergarten?”

The main findings reveal how teachers view the iPad as a positive contributor to children’s learning. It explores teachers’ belief that the iPad is a valuable resource, with particular benefits to building social skills through turn-taking, bonding of friendships and sharing of ideas. Further, it identifies how iPad use enhances literacy through extension of social skills; fostering oral literacy through the sharing of ideas. The questionnaire findings are mirrored in the learning stories and blog entries, confirming the role the iPad plays in building friendships.

The implications highlight firstly, the importance of on-going professional development in iPad technology for teachers so as to enrich children’s literacy. Secondly, staff need to remain open to what the children can teach us about iPad technology; and thirdly staff developing knowledge that enables them to identify literacy as a common thread through all elements of children’s learning.

**Key words:** *ICT, Literacy, Early Childhood*

## **Introduction**

In the technological revolution that is embedded in today's education environment we're seeing a growing number of iPad's being used as learning tools within our early childhood centres. Opinions on how they are used in early childhood provokes diverse discussion, underlined by on-going desires to provide rich learning opportunities, that ensure children become the possessors of knowledge for technological developments of the future. Research in the area of iPad use and literacy learning is relatively unexplored.

My goal was to explore strategies that encourage literacy development through iPad use in an Auckland public kindergarten. Also, I want to find out the teachers' perspective on how the iPad contributes to children's learning, and their view on how the iPad can be used to enhance literacy.

Hutchison, Beschoner & Schmidt-Crawford (2012) stated it is the responsibility of educators to integrate information technologies (ICT) such as the iPad into their curriculum so as to prepare children for technology in the future. The iPad, rich in digitally interactive applications, has a valuable role in the literacy classroom. It is these applications, which engage the holistic aspects of children's development; physical, emotional and social, thus enhancing children's learning opportunities by providing them with important new literacy skills that are interrelated with 21<sup>st</sup>-century technologies.

This research project was undertaken in a public kindergarten, with four teachers and forty children aged between 3 and 5 years old. An action based research study was used for this research project, so as to generate opportunities for me to reflect on my practice in relation to literacy learning and ICT. While also using a questionnaire to gain insight to how iPads were viewed by teachers. I then analysed historical learning stories and blog entries to establish any links between iPad use and literacy learning. With the information gathered I collaborated with the teachers to develop an action plan to bring about change and improvement in my practice. The literature review I undertook in the early stages of my research provided a framework for how iPads are used in an early childhood setting, outlining the main themes of how the iPad fits into the early childhood literacy curriculum, why teachers need on-going professional development on ICT and how literacy learning looks in the early childhood educational setting.

## **A Review of Past Research**

In the education sector Information Communication Technology (ICT) is defined as "anything which allows us to get information, to communicate with each other, or to have an effect on the environment using electronic or digital equipment" (Manukau Education Trust, 2005, p.1). In early childhood education ICT includes not only computer hardware, but such mobile devices as iPad's and tablets (Manukau Education Trust, 2005). The focal point of my research was about building effective practices between literacy skills, information technology and the iPad. It is imperative to acknowledge the interrelationship of these factors and how they impact on this current generation of children. As teachers we must integrate technology into our practice to ensure we build sound technological skills that safeguard the future of Aotearoa New Zealand. Current research shows there is a growing trend in use of technology in the early childhood sector. I compared a selection of diverse literature and their themes which included teacher professional development, the literacy curriculum and iPad use. Research on the iPad is limited due to the relatively new

nature of the technological device; however, there was a wide range of research articles written on both digital and non-digital technology.

### **How does the iPad fit into the early childhood literacy curriculum?**

The iPad as a mobile learning device is an integral part of the 21<sup>st</sup> century technological society in which we reside. However, the culture or society in which we live has considerable influence on how technology evolves, and this in turn impacts how technology fits into the early childhood curriculum (Smorti, 1999). Teachers who are passionate about technology will openly advocate for technology such as iPad's, in their centres; in reverse those teachers whom have an indifferent attitude toward technology are less likely to integrate such technology into their centre curriculum (Oldridge, 2010). Shifflet, Toledo & Mattoon (2011) proposed that before making decisions on how iPad technology can be used in the classroom, teachers must first have a willingness to learn and evaluate the purpose of new technologies, such as the iPad, through observations of how children use the tools. Through observation teachers develop a greater understanding of where this technology fits in the curriculum and how best they can use it to extend children's learning experiences.

Hutchison, Beschorner & Schmidt-Crawford (2012) agreed that it is the responsibility of educators to integrate information technologies (ICT) such as the iPad into their curriculum in which to prepare children for technology in the future. In the literacy classroom the iPad is valued through digitally interactive books which offer digital text; these require the mastery of a different range of strategies, skills and dispositions which together are referred to "new literacies". However, this is only one iPad application that supports literacy development. The traditional print-based literacy goals are also supported through iPad applications which enable children to read text with audio, picture animation and word-by-word tracking; these applications create interactive and engaging reading experiences that are individualised for each child's literacy needs (Larson, 2010, cited in Hutchison, Beschorner & Schmidt-Crawford, 2012). It is such applications that enhance children's learning opportunities by providing them with important new literacy skills that are interrelated with 21<sup>st</sup>-century technologies. The findings identified through this research project confirmed the value of the iPad as a tool for children's literacy learning.

### **Why do teachers need on-going professional development in ICT?**

In which to acknowledge and understand the true benefits of ICT, Oldridge (2007) suggested that we need to place greater importance on teachers' personal development in this sector of the curriculum, so they can enrich their knowledge of how to truly use ICT. The article suggested that confusion amongst ECE teachers about the potential value of integrating ICT into early childhood curriculum still remains; it also highlighted the fact that a poor view of ICT is closely related to teachers' lack of ICT knowledge and their lack of encouragement to use it within centres (Oldridge, 2007). This is confirmed by Hans (2003) who stated that the provision of ICT equipment in classrooms does not guarantee they will be utilised by teachers as learning and teaching devices. On-going professional development and support is essential to ensuring teachers develop confidence in their own ICT ability and how they can share this with children. I would agree with this thinking because how can teachers extend children's learning through ICT if they have minimal understanding or knowledge on how to use ICT (O'Hara, (2004), cited in Oldridge, 2010). Ultimately there needs to be a change in pedagogy surrounding ICT to

ensure teachers are kept up-to-date with the latest technological products and theories along with their implications in early childhood curriculums.

O'Rourke & Harrison (2004) discovered that the majority of early childhood educators had inadequate knowledge on how to best use technology; with many lacking in confidence on how to competently use ICT to enhance children's learning and development. They confirmed that through professional development teachers gained a greater insight to children's understanding and how they as teachers could best support children. Ultimately what is needed is making ICT a compulsory part of professional development for early childhood educators. This would ensure a quality technology curriculum is provided for all children during their early childhood years.

### **What does literacy learning look like in the ECE setting?**

McLachlan-Smith (1996) describes a literacy centred curriculum as one that provides an environment that lays the important foundations of literacy through discussion and questioning, singing of nursery rhymes, drama and story-telling, writing and art and playing language games. It is from these experiences that written and spoken language structures are formed. The research also suggested that a well-resourced library, that is tranquil and easily accessible for children, creates a "print-rich" environment that promotes and encourages literacy in the kindergarten setting (Stickland & Morrow (1988), cited in McLachlan-Smith, 1996). Through observations within my own setting I believe this is true; our setting provides a diverse range of books set out like a library setting with several bean bags for children to relax and read in. This is an area that fosters children love and enjoyment of books; it is where children read from choice either alone, together with peers or with teachers. The Education Review Office (2011) also emphasises the importance of a "print-rich" environment as key to early literacy development. They also suggest however, that it is also the role of educators to provide a resource rich environment which encourages and extends literacy through socially-constructed and meaningful play. It is through make-believe play and story-telling that educators provide opportunities for children to make choices about their learning (Tennent et al, 1998), cited in McLachlan-Smith, 1996).

The Auckland public kindergarten where the research project was based (Botany Downs Kindergarten, n.d.) believed that "building the literate child takes many paths" (p.2). They extend on the importance of a print-rich environment to include viewing children as holistic learners that are encouraged to take risks and make discoveries through exploration and self-awareness. Teachers are flexible in their approach to using strategies that promote literacy; through observation these include actively encouraging and engaging children in ICT practices that promote language and conversation such as through the iPad or Skype with the new entrant buddy class at the adjacent school. Their philosophy on how outdoor play interlinks with development of perceptual motor skills, believing that these prepare the brain for formal learning and cognition. In a nutshell, literacy in the centre is about sharing experiences and providing rich learning opportunities; it is about helping children make connections and building a sense of self-belief through knowing who they are.

Technology is an integral part of modern society and for it to be utilised to its fullest advantage it is essential for teachers to up-skill their knowledge on ICT in which to encourage more positive interactions with technology. Evidence of teachers' willingness

to extend and grow with technology is apparent in this research setting, where the teachers actively embrace technology and learn alongside the children in which to utilise it to its fullest advantage. Literature, however, shows that although there is some willingness for teachers to improve their ICT skills, on a global scale there is a long way yet to go. Technology is at the core of the centres literacy curriculum; my proposed research is centred on the particular issue of how we as practitioners use iPad technology to strengthen literacy development in the future.

## **Methodology**

The qualitative action-research approach was used to ask the question “How can we use the iPad to enhance Literacy development in children attending an Auckland kindergarten?” believing it provided opportunities to think about practice with relation to ICT and Literacy development. The three phase cyclical process of action-research approach encompassed the think-change-think process, through which I considered my current knowledge and practice around ICT and literacy, choose an aspect to change, planned and implemented a change through an approved action plan. I then reflected what I had changed and its effect on my practice (MacNaughton & Hughes, 2008).

My qualitative research approach based on a “belief that we continually create and construct our social world by negotiating with others the *meanings* of our actions” (Robert-Holmes, 2011, p.70), means interpretation of discussions with staff and the children’s documentation were equally important as each other.

## **Research Setting**

The research setting was a day-model kindergarten (Auckland Kindergarten Association) with 40 children attending morning session and 20 children attending the full-day. There were four teachers, one student teacher and three teacher aides. I am a volunteer, working two full-days - Wednesday and Thursday with 3-5 year-old children.

## **Research Methods**

Tools and data collections methods included questionnaires to four teachers using the centre blog site and children’s portfolio’s to gather observational data on use of the iPad. This allowed me to gather quantitative and qualitative findings to summarise the data through charts and tables.

## **Data analysis and strategies**

The qualitative method used for the collection of data throughout my research project, ensured evidence was in a data-rich, descriptive form. Due to the small-scale nature of the action research approach it was considered too complex to use statistical methods, which are used to gather quantitative evidence (Koshy, 2005).

## Ethical Considerations

Special care was taken in the data collection and how the findings were distributed, as the people and events within the local situation were easily recognisable (Koshy, 2005). Informed and voluntary consent was provided, keeping participants safe throughout the research process (Robert-Holmes, 2011) and anonymity and confidentiality was ensured. Participants were given opportunities to ask questions prior to signing the consent form and advised they could withdraw from the project at any time.

At the heart of my research plan was the importance of respecting the rights of participants' privacy and confidentiality. All research information gathered was stored in a safe area and electronic files were password protected; and my participants identities were kept separate from my research data in which to further protect my participants' anonymity (MacNaughton & Hughes, 2008).

## Findings

### The use of iPad in practice – Questionnaire responses from teachers

*QUESTION ONE: What is your perspective on how the iPad is used within your centre?*

- All teachers discussed children having the freedom to choose the pre-loaded games they play ~ these supported a range of learning areas including literacy, fine motor & problem solving skills and team work.
- Teachers used the iPad for skyping, movie-making, documentation, news-clips and sharing with the children.

*QUESTION TWO: Do you feel the iPad plays a positive contribution to learning in the centre? Why?*

- All teachers stated YES.
- Encourages teamwork; valuable for Professional Development; Parents contribute ideas for Apps; Enhancing teacher practice.
- Opportunity for children to discover technology.
- iPad provides a different medium to explore with.
- Valuable mat-time resource; supports all areas of curriculum.

*One teacher had concerns around “gaming” on the iPad; was it an OK tool for learning? They noted how they had converted their view after seeing how children used the iPad.*

QUESTION THREE: How were literacy skills developed at the centre prior to the iPad?

- Literacy embedded in centre practice with focus on perceptual motor programmes ~ gross motor skills in outdoor play and cross lateral development mat-time activities
- Portfolios encourage children to share their learning ~ Oral literacy is a focus at the centre.
- Story writing and book-making is regularly revisited by the children; Encourages expression of ideas and sharing the experiences of others
- Writing for a purpose actively encouraged (signage, naming artwork and signing in)

QUESTION FOUR: In what learning areas do you think the iPad benefits children the most?

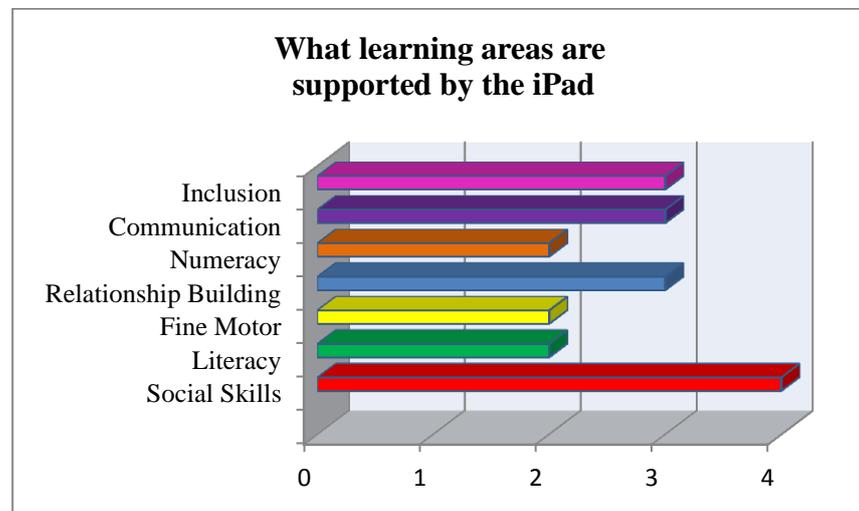


Figure 1

Figure 1 shows that social skills are the learning area teachers believed are best supported by the iPad; followed by inclusion, communication and relationship building. Literacy was viewed by teachers as one of the learning areas least supported by the iPad.

QUESTION FIVE: Do you feel the IPAD enhances children's literacy in the centre?

✓ All teachers felt the iPad enhanced children's literacy.

**QUESTION SIX:** *In what ways could you enhance the use of the iPad as a literacy tool in your centre?*

- More literacy-based programmes such as Puppet-Pal, research additional book-making Apps to encourage children to verbalise and create their own stories
- Encouraging children to take photographs of their own work, developing their film-making skills so they can direct and film their own stories
- Develop children skills in iPad use to Skype and email family and friends

*One teacher noted that through 'ako' we remain open to what the children can teach us about the iPad, as they are the technology generation.*

*One teacher stated it was important that teachers continue to develop their own knowledge around the iPad through professional development to enhance literacy opportunities for children*

**QUESTION SEVEN:** *What do you think the children benefit most from the iPad?*

- One teacher had considered 'gaming' an anti-social activity, however now believed that the iPad enhanced social interaction and problem-solving skills.
- All teachers stated that the iPad enhanced children's social skills through turn-taking, bonding of friendships and sharing of ideas with teachers and peers.
- Exposing children to new technology ~ beneficial to children's learning

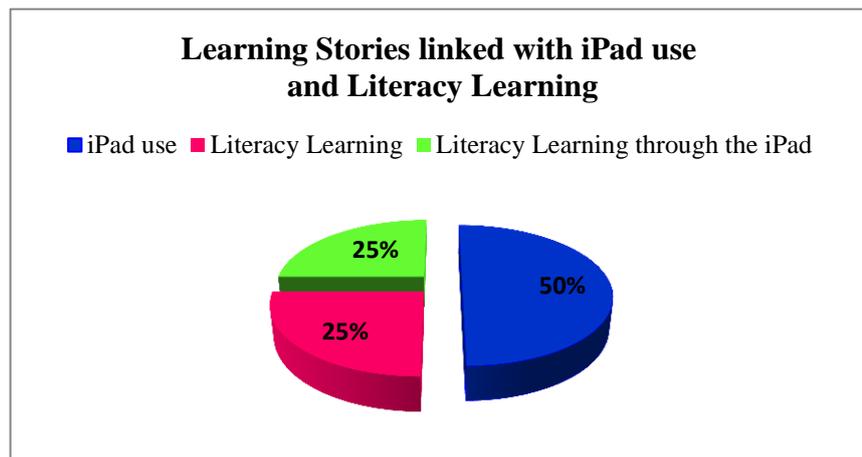
*One teacher highlighted the point that children become the holders of knowledge for future technological developments.*

### **Document Data Analysis – From Children's Portfolio's & Blog Website Entries**

The main theme throughout the portfolio's and blog entries I documented was that iPad use was primarily viewed as valuable for building social skills, building friendship and turn-taking. Only one learning story linked the iPad with literacy through a memory game activity, whilst two additional learning stories and four blog entries were directly linked to literacy learning with no apparent link to the iPad.

Figure 4 shows the majority of learning stories were specific to iPad use with only 25% being linked specifically to literacy learning through the iPad.

*Figure 4*



### Blog Entries linked with iPad use and Literacy Learning

■ iPad Use ■ Literacy Learning ■ Literacy Learning through the iPad

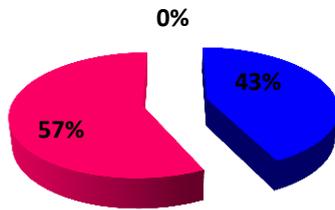


Figure 5 shows the majority of blog entries were specific to literacy learning, with no entries linked specifically to literacy learning through the iPad.

Figure 5

Figure 6

Figure 6 summarises the wide range of applications available on the iPad that supported literacy learning.

Upon implementing changes in my practice, through developing my knowledge around the iPad, I then worked with the children on Puppet-Pal, i-Movie and iPad mirroring to build literacy into the children's iPad use. Sharing the Puppet-Pal shows at group time activities fostered a notable increase in children's curiosity in making puppet shows thus increasing literacy opportunities. Additionally, involving the children in making of i-Movies engaged them in oral literacy with the sharing of ideas and expression of their role play activities. It also provided a means through which children could share their learning with their peers and whānau on You-Tube night. I also shared an i-Movie (via iPad mirroring) at mat-time, which I had made using photo images of pages from the "Titimus Trim" novel, to engage children with a novel in a digital format. Of significant interest was using iPad mirroring when the children were engaged in iPad use, to provide an opportunity to engage a wider audience in a singular literacy activity. It inspired and stimulated conversations through which children shared their thoughts, ideas and strategies together.



Figure 7



Figure 7 identifies the iPad applications used from action-plan to implement a change in practice that enhanced literacy learning.

## Discussion

Use of technology has been increasingly embedded in the early childhood curriculum over the past decade; my research goal was to ask the question “How can we use the iPad to enhance Literacy development in children attending an Auckland kindergarten?” in which to enhance my practice in relation to ICT and Literacy development. Throughout my findings I found some recurring themes from my questionnaires, learning stories and blog entries. These themes were the role the iPad has in building social competence and oral literacy, the importance of teachers understanding and using iPad technology through on-going professional development and recognising the new face of literacy and how it looks in today’s early childhood setting.

### **The iPad and the Early Childhood literacy curriculum ~ How do they fit?**

Our role as educators is to prepare children for technology in the future and with that comes the responsibility to integrate ICT such as the iPad into the literacy curriculum (Mattoon, 2011). My findings suggested that the iPad is a valuable role in building social competence and with that comes oral literacy through sharing of ideas, peer support and exchanging of experiences. As I observed children I noticed how childrens’ verbal confidence grew when using the iPad, as they interacted with each other, including exchanges with both teachers and peers. As one teacher stated, remaining open through ‘ako’ to what children can teach us, enhances literacy in the technological generation.

### **Teacher’s need for on-going professional development in ICT**

To truly utilise iPad use to enhance children’s learning, we as educators must first develop a confidence in own ICT ability and how we can share this with children (O’Hara, (2004), cited in Oldridge, 2010). My findings suggest that teachers whom have a willingness to develop their own ICT knowledge through on-going professional development are able to engage children in ICT at a deeper level, a level that truly enriches children learning. I observed first-hand how a teacher’s increase in ICT competence was able to foster childrens’ passion for ICT by engaging them in previously unexplored iPad applications; the learning experience that occurred became infectious as curiosity grew with more and more children becoming engaged.

### **Literacy learning in the early childhood educational setting**

A literacy centred curriculum is one rich in discussion and questioning; it is from such an environment that written and spoken language is formed (McLachlan-Smith, 1996). In

today's society literacy learning is taking on a new face. A 'face' that teachers at the given research setting support, through their strategic flexibility in promoting literacy through ICT practices (Botany Downs Kindergarten, n.d.). My findings confirmed their view, that literacy is about sharing enriched learning experiences through extending the iPad applications to include more literacy based programme such as puppet-pal, thus encouraging children to create and articulate their own stories. It is ICT experiences like these, from my first hand observations, which are literacy rich in both questioning and discussion.

I conclude from conducting this research that the benefits of building literacy through iPad technology are unsurpassed. What is required is willingness by educators to recognise and embrace the new face of literacy learning through on-going professional development. It is only then that educators will keep pace with the technology generation of learners and provide truly enriched literacy experiences.

## **Conclusion**

My overall goal of finding out how iPad technology enhances literacy within early childhood has been successfully achieved through the action-based research approach where research quantified similar findings to that I found during my own research. That is that the iPad is a valuable learning tool that enhances children's literacy learning. However, this is conditional on teachers' skills and knowledge to integrate the iPad into the literacy curriculum. For this to occur there must be a willingness by teachers to embrace on-going professional development in the area of iPad technology to ensure they can deliver a technology rich literacy environment.

As a continuum of this research the need to investigate the specific nature of the iPad applications being explored by the children, becomes naturally the next stage. What is it about those specific applications that children are drawn to? And what way does it enhance literacy learning. When educators begin to acknowledge the positive role the iPad plays in an educational setting they are truly able to foster a love of technology, thus ensuring we nurture our technological learners of the future by providing the necessary skills for 21<sup>st</sup> century society.

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