

Listening with our eyes: ICT as a language of communication

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(peer reviewed)



Infants and young toddlers are growing up in a world where information and communication technology (ICT) is commonplace. ICT is already part of children's lives; New Zealand children interact with ICT every day. A growing role of the whole education system is to support children's understanding of the nature of the technologies they encounter and to support learners to maximize the benefits they can provide (Ministry of Education, 2004). This article looks at how one busy, full-day infant and toddler centre is taking up the challenge to integrate ICT everyday in their programme and in the process strengthening not only their understanding of children's learning but also of their relationships with families.

Introduction and background

As the integration of ICT becomes commonplace in early childhood education it is timely to reflect on the ways that these tools are being used. In 2005, the New Zealand Ministry of Education published *Foundations for Discovery*, a framework aimed at promoting the use of ICT as a tool to strengthen the education of young children. As part of this initiative, the Ministry of Education tendered a professional development contract to CORE Education in 2006. This pilot programme, known as the Early Childhood Education Information and Communication Technology Professional Learning programme (ECE ICT PL), has 60 early childhood services participating nationally. These include education and care centres, kindergartens, playcentres and one hospital-based service. A group of facilitators works with the early childhood centre teams who are each engaged in action research aimed at improving teaching and learning with, and through ICT. Some of the teachers involved are focusing their research on infants and toddlers in particular. Tots Corner, where Hanna is teaching, is one such centre in the ECE ICT PL programme, and where Linda is the facilitator.

The teaching team in the babies' room at Tots Corner consists of three teachers working with infants and young toddlers from six months to two years old. The centre is licensed for ten children a day, who generally attend three to five days a week. As the research progresses it is expected that new knowledge about the effective use of ICT to strengthen teaching and learning will emerge. The teachers have been keen to explore the notion of infants and young toddlers (up to the age of two years old) as active participants in this process.

There have been many debates in the literature about the appropriateness of using ICT in early childhood contexts (Alliance for Childhood, 2004; Brown, 2006; Edwards, Gandini & Forman, 1998; Stephen & Plowman, 2003). However research that focuses specifically on infants and young toddlers and ICT is scarce. The teachers at Tots Corner believe that the instantaneity and highly visual nature of ICT captivates infants and young toddlers and has the potential to be a powerful tool for learning. Though they are acutely aware of the literature and critique of ICT use, the teachers at Tots Corner believe that the way that they are using ICT is of substantial benefit to the children in their care, and welcome opportunities to share their actions and the findings of their research so far. They are very careful not to let the ICT diminish in any way the amount of hands-on experiential learning which is so important for young children. Those children who show a particular curiosity to learn and explore through the ICT tools, have the opportunity to use the digital camera with the teachers, but these are generally not available in the play area for the children to freely access. The teachers are focusing their research around creating and sharing documentation of children's learning experiences with children, parents and families.

Hanna: We are in our second year of our ECE ICT PL project investigating ways that we can enrich our pedagogical documentation through ICT. We believe that pedagogical documentation of infants' and young toddlers' experiences is documentation that informs further our teaching practice, research, relationships and learning both at the centre and beyond.

The teachers view documentation as a reflective tool, central for their meaning making, and have taken the responsibility for making meaning of children's actions and coming to their own decisions and interpreting what is happening. They focus on children's strategies of learning and meaning making as well as deciding how they can challenge the child's learning. The teachers acknowledge that there is always tension with pedagogical documentation being a tool to assist organisation and at the same time being flexible enough to shift direction if something different evolves (Fleet, Patterson & Robertson, 2006).

The use of ICT for teaching and learning has been a journey that began at Tots Corner long before the centre became involved with the ECE ICT PL programme. However, being part of this project has set out new pathways to deepen the learning for teachers and children using ICT. Their approach has not been so much about introducing new ICT equipment, as looking more closely at how they use the resources that they already have, to maximize the teaching and learning potential.

Definition of ICT

Given the rapid expansion of technology, the definition of ICT in the ECE ICT PL Programme is necessarily broad, encompassing the vast range of electronic technologies that are used for the communication of information. These include computers including laptops, the internet, blogs, wikis, digital still and video cameras, mobile telephones, printers, scanners, tablets, interactive whiteboards, electronic toys, digital audio recording devices and digital microscopes to name a few (Ministry of Education, 2008). At Tots Corner, the teachers have focused their research around the ICT tools that they can use in their everyday practice, namely, digital cameras, computers, the internet and email.

Photographs and the power of interpretation

For children who are not yet talking, the role of the teacher in listening and interpreting the child's meaning making is vital in order to plan and build on their learning and to begin to understand the child's perspective (Fleet, Patterson & Robertson, 2006). The role of the teacher in listening to children is a process that requires careful interpreta-

tion. The teachers at Tots Corner are aware that there are always multiple perspectives for looking at, analysing and understanding a child's perspective and then responding in an appropriate way.

As part of their action research, the teachers in the infant room at Tots Corner have investigated the use of photographs to enable teachers and parents/whanau to reflect together on the perspective of the child. Listening, observing, documenting and interpreting are the key elements of the process.

Email

The Tots Corner community has embraced communication through email. This has become a popular and convenient way of communicating between teachers and parents/families. As all families at Tots Corner have email access either at work or at home, teachers use this as another means of sharing information with them. The teachers email all learning stories home along with the weekly newsletter and photographs of interest. Sharing children's documentation through email provides

Hanna: Recording children's experiences through photographs has allowed us to revisit captured moments and gain another perspective into children's learning by listening with our eyes. That might sound like we have mixed up our senses. Listening to us means using all senses to gain a perspective of insights into what infants/young toddlers are interpreting through their lens - intertwining teachers' values and decisions in what aspects of children's learning they choose to make visible and share. Rinaldi in The hundred languages of children said, "Listening is thus a general metaphor for all the processes of observation and documentation. Observation involves much more than simply perceiving reality, but also constructing, interpreting, and revisiting it" (1998, p. 120).

As teachers we are constantly questioning ourselves in our practice. All the children we teach communicate in ways other than speaking, and we want to do our best to make authentic

another opportunity for parents/families to engage with their child's learning. They can read, think, reflect, interpret, share and question.

Hanna: We use email as another means of communication. All learning stories are emailed to families, giving them an opportunity to contribute to their child's Learning Story with a 'parent/family response' without expectation or judgment. As teachers we gain another perspective into their child's learning through their contribution. Sharing the Learning Stories and photographs creates insight into the lens of the child as there is an opportunity for teachers and parents to share their understandings through listening and communicating with each other.

The teachers value all responses received by parents/families, especially when they realised that parent and family voices can be critical voices.

meaning from their play. We spend considerable time reflecting on the validity of the interpretations we make from the photographs we take. What exactly is being photographed and how? Are we capturing through the lens the essence of children's investigations of what they see? Teachers reflect on ways to capture learning experiences so that these experiences can be revisited by children and teachers, with every effort made to interpret these authentically through the eyes of the child.

Photographs have become a powerful ICT tool, where we have looked closely into the quality of listening to infants and young toddlers; finding ways of observing, interpreting and responding to their whole repertoire of communication. In practice, this has meant using a variety of methods of presenting photos to encourage the infants and young toddlers to take notice of them. When they do the teachers are then able to observe the children and engage with them to strengthen and deepen their understanding of the experience.



Photography

The practical steps that are taken at Tots Corner to extend the value of photographs as pedagogical documentation are as follows:



1 Printing in black/white: Black and white photography seems to offer a quality that lends itself to the type of interpretation that the teachers are seeking. With black and white photography the viewer is not distracted by the shade of a colour but rather a sense of the texture, the play of light, shadow and reflection which all encourages the eye to focus in on the detail of the subject matter in the photo. Consider the example left. With the colour photograph, the eye is drawn from the child's face to the colourful jumper. In the black and white shot, the eye tends to stay on the child's face, which remains at the forefront of the focus.

2 Carefully choosing the content of the photograph: Is it meaningful? Is it relevant? Does it assist with telling a story of learning? The teachers take photographs thoughtfully, with a sense of purpose. The same considerations are made when it comes to selecting the ones to be printed.

make the photograph less busy. The teachers write their story to describe the context for the learning, rather than include this in a wide-angle photograph of the room and surroundings because this tends to take the focus off the children and their experience.

3 Sizes: Varying sizes of photos are printed though most are printed in A4. The photographs are laminated for protection and displayed in various ways, for example on the walls, outside in the playground, on a light box and in posting boxes. Photographs tend to be taken at the highest resolution so that the quality is not lost when they are printed.



4 Focus: Teachers reflect-in-action (Boud, 2001; Schön, 1983; Schön, 1987) on what aspect of the learning to capture through the photograph. The teachers consciously decide which lens they should use to interpret the child's learning, and whether the photograph or sequence of photographs reflects this?

6 Sequential photographs: Sequences of photos are taken to record the process of the learning. These are used in Learning Stories, wall displays, and shared through slide-shows or movies produced from the still images.



5 Taking close-ups or cropping photos helps to focus attention on expressions, hands, and body language to

7 Learning Stories: The use of ICT facilitates the writing of these so that they can be stored and shared electronically. Learning Stories are printed for each child's portfolio, and are also always emailed to the child's parents, who usually reply by email to add their perspective to the teacher's interpretation of learning. Individual children's Learning Stories are not displayed on the walls.

The Babies' Week



Big birthday wishes to Lucy who turned 2 this week, thank you to Alison and Pete for the delicious cake and marshmallows.

25 September 08

We have been so busy outdoors investigating the endless opportunities of water. Some like to taste, where others like to pour into cups and then onto themselves. Hence the wet washing that is coming home. We do request you bring in a change of clothes for your child and also a sunhat that can stay at Tots. We will be sending the gumboots home soon too!

Building on the popular interest of water, we created a handy hose sprinkler. Some took a while to warm to the idea; however, most did not hesitate in taking full advantage of the latest water feature.



The children have also had the opportunity to experience 'Heuristic Play', which is attached with the newsletter, courtesy of Nodira.

Hanna, Sue, Kate and Nodira.



8 Weekly newsletters: A newsletter including photographs and anecdotal highlights from the week specific to the infants and toddlers is shared with the parents and families by email. Printed copies are also available on request.

9 Photo stories/slide shows: The photographs are shared with the children on the laptop when it is relevant to the curriculum, and this encourages the children to reflect on their past experiences with the teacher and the other children. Microsoft Photo Story 3, software for Windows computers that can be downloaded free from the internet, is used to create movies from digital still images. Titles and music or recorded voice can be added and then the movie easily compressed for sharing on a CD or by email.

10 Presentations: The photographs are sometimes added to an ongoing Keynote (Mac) or Power Point (PC) presentation. The presentations, which include the child's, teacher's and

parent's voice are shared on the laptop or projected onto the wall using a data projector so that the children and parents can view it.

11 Recorded movie clips of children: Small movies are taken of the infants and toddlers using the digital still camera. Movies can be a powerful way of recording experiences, as they can capture multiple languages of communication, including voice, expression and action.

Hanna: Photos are the dominant feature within our pedagogical documentation. We capture many experiences with the click of our digital camera, and what we capture also ties into what we as teachers believe is valuable learning for children.



Where there's a will, there's a WAY!

Hanna: As teachers we have found entering into dialogue with parents/families about learning to be empowering, as it enables different ideas to be expressed on topics that would not otherwise come up in the kind of conversations that occur when parents are rushing to either drop-off or pick-up their child. Teachers and parents/families can all work together to find ways to confront these differences in interpretation of children's experiences - simultaneous multiple perspectives being juggled and respected (Fleet, Patterson & Robertson, 2006).

Silenced topics

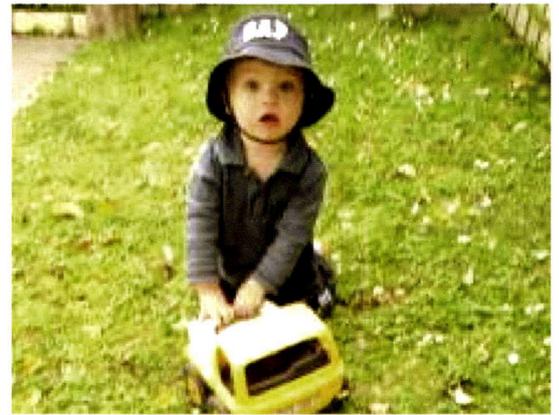
The reciprocal email conversations have deepened relationships with families and often been the catalyst for face-to-face dialogue. The teachers feel that the increased familiarity and understanding they have with parents has given them more confidence to talk about some of the 'silenced topics' in children's learning and development (Fleet, Patterson & Robertson, 2006). By 'silenced topics', the teachers mean the examples of conflict and disagreement, which are an important aspect of an infant and young toddler's learning experiences.

Hanna: As teachers we reflect and ask ourselves whether we are acknowledging all opportunities as learning experiences to confront and make meaning from. How do we encounter the daily occurrences of infant and young toddlers' debate and frustrations, their conflict with peers, and their social learning? At a Reggio Provocations Conference in February 2008, "Through the eyes of a child", guest speakers Deb Curtis and Margie Carter shared a valuable insight into meeting children's minds and not their behaviour. As teachers we reflect on how we can celebrate the process of children's learning, rather than their behaviour. Are we documenting and sharing only the 'good and happy' learning?

What does that tell us about what we value in early childhood education? There are tensions around the decisions and power that teachers have to choose what is documented, and what learning is made visible and shared.

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The teachers at Tots Corner, helped by their thoughtful use of ICT are able to engage in deeper reflective dialogue about these uncomfortable situations. When they do, families realise that the teachers are not making a judgment on their child, but rather are celebrating a process in their learning. To illustrate this we end with an example of a Learning Story written by Hanna and Kate for Hamish and the response from Hamish's mother Deidre. This is made possible because of the layers of trust built up over time between the teachers and parent, facilitated by the use of a variety of communication avenues, both face-to-face and virtual.



Conclusion

As Hamish makes his way over to the big outdoor area, he takes with him the ride-along car that he has seemed to claim as his own! Toddling around, before noticing other trucks he likes the look of, he ditches the car to make a break for the trucks.

Time goes on and after a wee while he remembers 'his' ride-on which by now another child is having a turn. Charging over there, with nothing else in mind but claiming his property, he yells and cries at them expecting immediately to "get it back".

As the child seems concerned at the intensity of Hamish's demands, he gets off to give the car back to Hamish. At this time I intervened and explained to Hamish that he will just need to wait his turn.

Teacher reflection

Hamish your determination and strong mind sets you upon achieving your intentions. This definitely showed me that obstacles, such as the older children, do not seem to intimidate or hold you back, as you get right on in there stating what is "yours".

With our guidance and support we have persevered to build on your knowledge of taking turns and sharing with your friends. Your authority towards favourite toys is very strong and sometimes it's either your way or no way! In the end you tend to give in, realising that things aren't always going to go your way.

Well as time goes on, there will be pathways you will come across and social skills like the ones mentioned that will be of great use to yourself.

Teachers, Hanna and Kate
December 2007

Parent response

Hamish we like that you are 'determined' and if this aspect of your personality is channelled correctly (as your teachers are already doing), it will stand you in good stead in the future. We all have to learn that we can't always get what we want, although I know that sometimes Mummy wants to give you the world so that you never want for anything. However, in doing so, Mummy is doing you a huge injustice by not channelling your determination in the appropriate way. Dad is a lot better at this and perhaps Mummy needs to learn from him and your teachers how she can guide you better. We look forward to seeing the changes in your behaviour reflecting a more sharing attitude with toys etc. as you learn to deal with your 'determined' spirit!

Love Mummy and Dad

Working with infants and young toddlers sets the foundation for their ongoing adventures in early childhood education. Through their action research investigation, looking deeply at the way that the visual documentation is interpreted and at the impact of sharing it, the teachers have found that the role that the ICT plays is significant. Using ICT as a tool, the teachers have strengthened relationships with the children and their parents and families to deepen the opportunities for learning and understanding. Their interpretations of the children's play and investigations are more robust through the way that they are documented and shared to incorporate multiple lenses. While the potential of ICT to enhance teaching and learning with infants and toddlers at Tots Corner is clear, if ICT is used to enhance teaching and learning this responsibility lies with the teachers and communities who have vision with motivation, and are both willing and able to go from seeing the potential, to realising the potential. As more of the centres in the ECE ICT PL Programme begin to share their research findings, it will begin to widen the dialogue around appropriate use of ICT with infants and toddlers in Aotearoa/New Zealand.

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Photographic resources:

- <http://digital-photography-school.com/blog/digital-black-and-white/>
- http://www.northlight-images.co.uk/article_pages/digital_black_and_white.html
- <http://www.microsoft.com/windowsxp/using/digitalphotography/PhotoStory/default.aspx>

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