Live and learn

In an Australian case study, tablet technology has enabled children's playful explorations as part of 'multimodal learning'. *Nicola Yelland* and *Caja Gilbert* examine the implications

In Australia, the federal government took a major initiative in early childhood education with its release in 2009 of the *Early Years Learning Framework*. The document provided a vision for children's learning that considered both pedagogies and learning outcomes, and this was the first time that this had been formulated at the national level. The title and theme of the framework was *Belonging, Being & Becoming*, with the goal that all children should be able to 'experience learning that is engaging and that will build success for life'.

Five learning outcomes were identified. They were that children should:
● have a strong sense of identity
● be connected with and contribute to their world
● have a strong sense of well-being
● be confident and involved learners
● be effective communicators.

The role of information and communication technology (ICT) was simply stated under the fifth learning outcome, which said that children would use ICT to 'access information, investigate their ideas and represent their thinking'.

The vision for learning in the early years as exemplified in the EYLF was documented as being able to assist early childhood practitioners to create their own (local) learning opportunities relevant to their programme within a broader context of the first years of early education. It was designed to act as a guide for curriculum decision-making, planning, implementing, evaluating and to communicate young children's learning to their parents.

It promoted play as the main context for learning on the basis that it:
● allows for the expression of personality and uniqueness
● enhances dispositions such as curiosity and creativity
● enables children to make connections between prior experiences and new learning

● assists children to develop relationships and concepts
● stimulates a sense of well-being.

While these features map to the overall vision stated in the five learning outcomes, they are also compatible with other considerations for learning in the 21st century that have moved away from a view of curriculum as content to the acquisition of skills (Partnership for 21st Century Skills, 2008).

There were originally four of these skills: creativity, critical thinking, collaborating and communicating (Trilling and Fadel, 2009), but they have since been extended to include character education (Fullan, 2012).

Further, it was also recognised that fluency with new technologies was regarded as an essential component of future employment across a range of opportunities and had a role to play in early childhood programmes (Cuban, 2001).

Here, we describe three of the elements – critical thinking, collaboration and communication – since

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DEFINITION

● Multimodal learning: the opportunity to explore interests and concepts on different platforms and using different resources, both traditional and technological, and to represent them in a variety of ways.

creativity permeates all the activities that were experienced by the children in the Australian study (see below). Similarly, the ongoing tasks of building character and citizenship are inculcated in the pedagogical work of teachers on a continuing basis and form part of the 'hidden curriculum' (Zorec and Dosler, 2016).

AUSTRALIAN CASE STUDY
Critical thinking
There were a number of apps available to the students on the Surface tablet. Two of the most popular were a memory game, *Animals Memory 2*, and the *School Writing* app (free to all Australian schools) that helped them to practise drawing numerals and letters. The use of the stylus/pen was useful for this activity since it enabled the children to form the numerals and letters accurately with the device rather than always use their fingers. Thus, it allowed students to develop dexterity with the pen that would not have been possible if they had drawn the figures with their fingers.

The use of apps focused on skill-building with young children has been shown to be valuable in terms of providing them with the opportunity to use skills in an enjoyable context (Yelland and Gilbert, 2013, 2014). It also encouraged and facilitated critical thinking about scenes and using their literacy and numeracy skills as they encounter them in an engaging modality.

Using the camera also afforded the opportunity to introduce early mathematical language such as positional and relational terms (Yelland *et al*, 2014), so important for early numeracy activities. For example, when the children were in the playground, they might be located on top of the ladder, or digging in the sandpit, or sitting on a block.

The class was also involved in watching both chickens and plants grow. One practitioner described the process, 'So we've been taking photos of the chickens every day and we're going to make a book out of it. We have the chickens for two weeks and then the children get to take them home. We'll have [the book ready] by the end. What happens is the chickens will hatch and then after they hatch they stay the same size for a little while, so we won't need to do a page every day.

'We've got the interactive whiteboard, so we'll be able to put it on there when it's done. We'll do it together. They'll tell me what to write, rather than me just writing it. I'll show them the picture and they'll tell me what's happening in the pictures. They love the recording of their voices too. [We're using] *Kids Story Builder*.

Engaging the children in collaborations is vital for this age group, and creating a shared book is a relevant and exciting way to make early reading connect with their lives and interests. In one class they documented their planting of seeds in an e-book that could be read by individuals or small groups of children. But as the practitioner noted, because they also had an interactive whiteboard, they could use it as a whole-group shared reading activity. In this way the children are able to communicate their ideas and findings to a larger audience.

Collaborations

Attending kindergarten is often the first time that four-year-olds encounter other children of the same age and it provides a context for social encounters and developing social skills, such as sharing and collaborating with others, especially around shared resources such as the device. The collaborative e-books and taking photographs, described previously, are examples of activities that required the children to collaborate with each other with specific desired learning outcomes.

The practitioners also indicated that they felt that having the tablets encouraged the children to share and take turns. It was evident in the observations that the children were able to take turns with the devices, for example, when playing in the 'Post Office' play area.

Additionally, they waited for their turn to take photos with the camera when outside.

Communication

The communication of ideas and shared reading of e-books were the most popular uses of the tablets. The class even used them in their daily yoga sessions with the practitioner to know precisely how they should be doing their moves the right way. One of the main benefits was that the practitioner was able to show and share the work of the children with their parents.

At this age, there were limitations on communicating to a broader audience and peer-to-peer communication, but it was evident that the creation of e-books around the topics of 'living things' enabled the children to talk to each other about their experiences, while having the interactive whiteboard also facilitated talking and sharing with the whole group.

SUMMARY

The kindergarten group were on the first step of their formal education

journey. The school has a vision to 'have a cohort of students who are responsible global citizens and we want them to be able to make decisions based on how that decision affects more than just the local context', another practitioner said.

Having tablets as a resource for their learning encouraged them to encounter and use 21st-century skills in play-based contexts that are engaging and linked to their lived experiences. One practitioner said that she 'noticed different strengths come out of the children when they're using the tablets'.

Engagement is an integral part of deep learning. The examples of this group of young children not only revealed their high levels of engagement with ideas, but also provided contexts in which they could encounter, use and practise 21st-century skills and build their capacity in literacy and numeracy in multimodal formats that can be built on as they progress through the schooling system.

Feedback from the practitioners also indicated that they used the tablets as a teaching device when they were discussing a topic in group time, since they were able to support questioning and reflections.

The data provided here illustrates the seamless ways in which new technologies and traditional materials can be mixed and incorporated into various play scenarios to constitute effective multimodal learning contexts. These have included adding specific technologies to traditional learning scenarios, such as creating a post office, as well as providing new opportunities for creating technological representations, such as in drawing a personal portrait.

Living and learning in the 21st century enables us to use technological as well as traditional materials and resources for our lived experiences and problem-solving.

We should be eager to take advantage of them in order to make sure that all young children are engaged in optimal learning opportunities to ensure their futures. ∎

This is an edited extract of 'Re-imagining play with new technologies' by Nicola Yelland and Caja Gilbert, Chapter 3 of Digital Technologies and Learning in the Early Years, *edited by Lorna Arnott, University of Strathclyde (Sage, £26.99).*