Emerging literacies and digital technologies for achievement in remote communities

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In recent years, an increasing body of research has focused on the impact of new and emerging digital technologies on children’s play in early childhood education. To date, much of this work has been conducted in locations that could be described as urban. Some of these studies have focused on the increasing amount of time that children spend in ‘virtual’ rather than ‘real’ worlds (Edwards 2013; Marsh 2017), others have established that, from an increasingly young age, children are using and interacting with a broad range of digital technologies. This has resulted in the understanding that many young children come to preschool already experienced in using a variety of technologies including computers, gaming consoles, digital cameras and mobile telephones (Kengwe & Onchwari 2009). Many of these studies have also highlighted that digital technologies are simply not present in early childhood settings (Burnett & Daniels 2015; Yelland 2015; and Formby 2014), an issue that is often attributed to educator uncertainty about how best to use digital technologies in such settings (Plowman, McPake & Stephen 2010). Further, choices to use technology in early learning settings are negatively impacted by debates about the age appropriateness of using digital devices (Burnett & Daniels 2005; Flewitt, Messer & Kucirkova 2015).

What is evident is that the growth in children’s use of, and access to digital technologies reflects the changing social realities of their lives in the home (Erstad & Sefton-Green 2015). The realities of children’s lives in remote contexts differ greatly from their urban counterparts (Halsey 2018). Studies have noted the presence of a digital divide that affects not only who has access to various digital technologies, but differences in the quality of the experiences that are available to children depending on the type of technology available (Kucirkova, Rowsell & Falloon 2019). Research confirms this is especially true of remotely living children in South Australia, where poverty and distance combine to impact on the quality of home technology and therefore children’s experiences of it.

...only 47% of the community are hooked up to technology. The families that I have here, particularly, their phones will just really be a prepaid type thing just for phone calls and maybe text messages... These items are expensive. They don’t let the children play with them either. Some people let their kids play with their phones or look at their phones. A lot of them don’t. – (A Multimodal Childhoods (pilot) Project educator, 17/10/2018)
CONTENTS

4
SUMMARY: MULTIMODAL CHILDHOODS (PILOT) PROJECT
• ENABLERS FOR THE INTRODUCTION OF MULTIMODAL APPROACHES INTO PRE-SCHOOL
• SUPPORTING FOUNDATIONAL SKILL DEVELOPMENT IN THE PRE-SCHOOL, MULTIMODALLY (TALK/PLAY/DIGITAL APPLICATIONS)
• IMPLICATIONS FOR THE LEARNING NEEDS OF ALL REMOTELY LIVING CHILDREN

13
FINDINGS: REFRAMING LEARNING POSSIBILITIES USING MULTIMODAL APPROACHES
• TRANSFORMATIVE BEGINNINGS
• TRANSFORMING PRACTICE
• PEDAGOGIES OF PRODUCTION AND PLAY
• EVERYDAY AUTHORS
• REPORTING

19
CONCLUSIONS
• POSTSCRIPT: LITERACY IN REMOTE COMMUNITIES

21
REFERENCES

23
ACKNOWLEDGEMENTS
• ETHICS
• FUNDING
• AUTHORS
SUMMARY:
MULTIMODAL CHILDHOODS (PILOT) PROJECT

ENABLERS FOR THE INTRODUCTION OF MULTIMODAL APPROACHES INTO PRE-SCHOOL

- School leaders’ willingness to support the explorations of alternative modalities to improve literacy engagement for remotely living pre-schoolers was integral to the positive outcomes reported here.
- Successful implementation of multimodal approaches in the pre-school depended on the following key factors:
  - Providing personalised professional development
  - The provision of new digital technologies (iPads, applications and accessories), and
  - Information Technology support from co-located area school staff
- Support from leaders, timely resourcing and the space for professional conversations about practice provided a foundation for teachers to work in multimodal ways.

SUPPORTING FOUNDATIONAL SKILL DEVELOPMENT IN THE PRE-SCHOOL, MULTIMODALLY (TALK/PLAY/DIGITAL APPLICATIONS)

- As a result of introducing digital applications as an option for self-expression, an increased focus on producing and creating was evident. For example, the pre-schoolers engaged in photographing, drawing, oral and written storytelling and moviemaking. In this activity children recorded their own developing conceptual understandings of subitising, measurement and reflections on their social worlds. These productions co-existed alongside more traditional approaches to reading, writing and arithmetic, as one example, the pre-school’s Read, Write Inc. phonics program.
- While it has been reported elsewhere that multimodal approaches might inhibit play-based learning, in this case the digital technology became integrated with and deepened the play that children engaged in. It provided a meaningful way to review and talk about developing conceptual understandings emerging through the play-based learning with pre-schoolers.
- While language was not always at the forefront of children’s play, the multimodal approaches highlighted the contribution of other modes of communication such as gesture, symbolism and object placement. The children’s conceptual understandings were increasingly demonstrated through multiple modes (photos/audio/video/emergent writing). These are key to a range of literate practices beyond pre-school, as described in the Early Years Learning Framework (EYLF) (Department of Education and Training 2011).

IMPLICATIONS FOR THE LEARNING NEEDS OF ALL REMOTELY LIVING CHILDREN

- Multimodal approaches (photo, audio, video) helped capture children’s everyday activities, which demonstrated their conceptual understandings in new ways (as reflected in the EYLF and the Implementation guidelines for indicators of preschool numeracy and literacy in governments schools 2015). For some children with language delays or with little oral language, these understandings are not easily captured in traditional modes of documentation and assessment.
- Once noticed by the pre-school educators, there was a deepening awareness of what the children in the cohort were capable of. In turn, the pre-schoolers (including non-verbal) often became authors of their own documented learning too.
- Consequently, there was a growing positive recognition of self as learner, particularly for the most disadvantaged in the cohort.
• The multimodal approaches allowed for an honouring of children’s cultural and historical ways of being, valuing what the children bring from their homeworlds. In other words, the multimodal approaches supported authentic learning inquiries.
• In turn, a shift in who was the primary documenter of learning was apparent as the pre-schoolers themselves were recording/documenting much of their everyday activity. This positioned the child as a co-constructer of learning and assessment.
• An unintended positive outcome was the increased dialogue between the community and pre-school, as a result of the sharing the digital productions and books children created with families.
MULTIMODALITY

AS A CONCEPT

In its simplest form, the term ‘multimodal’ refers to the multiple modes that are used by children to create meaning and communicate their learning (Daniels & Taylor 2019). Driven by the emergence of new forms of communication that have arisen out of the rapid development of technology, multimodal theories challenge the dominance of spoken and written forms of communication (Kress 2010) and enable the examination of alternative modes such as gesture, digital text and image, in the meaning making process (Jewitt et al. 2016).

Importantly, multimodal theories of communication are distinguished by the notion that, although language might be dominant some of the time, this is not always the case. Attending to all the modes of communication used by children – including the use of material artefacts such as toys and the arrangement of physical space – can assist educators to develop a more nuanced understanding of how children create meaning. Observing children from a multimodal perspective also provides opportunities for educators to evaluate the ways in which they interact with children and to identify how learning environments can support or limit children’s play and their meaning-making capacities (Daniels & Taylor, 2019).

Multimodal theories reposition the child in the learning process from passive recipient of pre-existing knowledge, to that of an active constructor. As learners transform the texts and signs that they encounter and integrate what they have learnt into their own repertoires, children, it is argued, become the agents of their own learning (Yelland 2015).
Relatively few studies have considered the contribution that the inclusion of digital applications can make to children’s construction of meaning. (Exceptions include Husbye, Buchholz, Coggin & Powell (2012), and Wohlwend (2015)). Even fewer have attempted to address the issue in sites of remote learning. Those who have examined the impact of digital technology from a remote perspective suggest that exposing children to digital forms of communication at a time when they are developing foundational literacy and numeracy skills can significantly influence their perceptions of themselves as competent and capable learners (Flewitt et al. 2015). However, this can only occur if the development of early literacy and numeracy skills is understood as something that occurs across multiple modes, timescales and in varied ways across variable contexts (Burnett & Daniels 2015). This is the way in which taking a multimodal approach to learning was viewed across this project.
The Multimodal Childhoods Project is undertaken in a very remote pre-school, situated in the South Australian Department for Education’s Far North Partnership. There is strong and increasing evidence of long-term adverse health and social outcomes resulting from poor early childhood development, academically and socially (Krieg, Curtis, Hall & Westenberg 2015). The Australian Early Development Consensus Report (2018) proposes that in the most remote socially disadvantaged communities, thirty two percent of young children will likely be vulnerable in the domains of communication, social competence, emotional maturity, physical health, and language and cognitive skill. This is compared to eleven percent as a national average. This overall disadvantage means young children in remote communities are developmentally vulnerable and are described as potentially at risk. They are categorically viewed as ‘failing’ before they enter sites of formalised early learning. Yet, contemporary work in Remote, Rural and Regional (RRR) ‘schooling’ calls for a reframing of the remotely living child to reject such deficit constructs (Halsey 2018).

The complexity of the needs of the children in the pre-school are difficult to capture in writing. At the commencement of the study, in the partnering pre-school, 29 children were enrolled from diverse cultural backgrounds and demonstrating very variable capabilities. At any given session approximately 15 to 18 children would typically attend, with those identifying as Indigenous representing a larger percentage of non-attendance than their non-Indigenous counterparts. Of the pre-school’s cohort, seven were classified as ‘high needs’ and a further six considered to be on the autism spectrum, exhibiting developmental delays or coming from a trauma or neglect situation, or both. There were five children who exhibited no oral language. The staff comprised a teacher/leader with early childhood qualifications, and four assistants. The dedication and the commitment of the staff to their charges - some of whom needed basic toileting, nutritional and emotional support before they could engage with learning - was inspiring.

The Multimodal Childhoods Project was undertaken by two Flinders University researchers in dialogue with early years educators in one remote community as mobile technologies were introduced to the pre-school for the first time. The project was undertaken on the premise that, if we support the conditions that constitute the remote learner from a position of strength, we can be hopeful of changing the child’s perceptions of ‘self’ in relation to learning. In turn, a change of self-perception for the child, married with authentic and multimodal learning experiences - i.e. those connected to their own worlds – may act to increase meaningful engagement with emerging literacy concepts. Taking a multimodal approach helps create educational conditions that position children positively, and can be talked about, planned for and realised. Progressively then, outcomes of educative agency become a possibility for young children.
The aim of the Multimodal Childhoods Project (pilot) was to explore:

- Enablers or inhibitors of particular kinds of practice in the participating pre-school;
- The ways in which digital applications – in conjunction with real world play and everyday talk – supports early learners’ development of foundational skills and capabilities; and
- The learning needs of Indigenous and non-Indigenous remotely living children.

In working towards these aims, the project positioned local educators centrally to the unfolding of the remote learning story, which we present here. This report reflects the voices of the educators as they shared successes, near misses, and observations. It also demonstrates the care with which educators undertook their work with the early learners, as they implemented a multimodal approach in the pre-school for the first time.
Participatory Action Research (PAR) is the methodology primarily used across the Multimodal Childhoods project. This methodology has become accepted in the field of sociology as prime where participants are embedded in contexts that could be described as marginalised or disadvantaged (Kemmis, McTaggart & Nixon 2014). PAR ensures that the needs and expertise of participants, and the perspectives of communities, are represented in the design and implementation of the phenomenon to be researched (Kemmis et al. 2014; Denzin & Lincoln 2008). These aspects of what PAR offers as a methodology were of importance to the researchers, as they worked collaboratively and in open, ongoing dialogue with the local educators. Bernard (2000) describes PAR as a process of reflective and critical enquiry that allows often marginalised voices to be heard, such as those of the educators and their students in remote communities. PAR is an ethical and social method of investigation involving ‘ordinary’ people, posing and solving problems of importance to them. The researchers entered the remote pre-school proposing no specific outcomes; but, committed to listening closely for the felt enablers and barriers to the work the educators undertook incorporating digital applications into their repertoires of practice. The researchers did, however, provide provocations for educators’ practice, and personalised professional development for incorporating digital technologies in practice. They also provided resourcing (i.e. iPads/covers/applications).

**FIGURE 1: VISUAL REPRESENTATION OF PARTICIPATORY ACTION RESEARCH CYCLES**

Preparation was integral to achieving the Multimodal Childhoods Project’s aims. Three important provisions, carried out before the commencement of the project included: i) Delivery of 10 new iPads to the pre-school, ii) The delivery of Professional Development (PD) accounting for the express needs of participants, and iii) Initial discussions between research participants, school leaders and Apple Education Team members (while on site). These activities paved the way for the educator participants to have access to the digital resources needed. It also built, to varying degrees, educators’ confidence in using digital applications, as well as providing opportunities for the researchers and participant educators to develop trust and understanding around the project.

The initial personalised PD, with input from the researchers, was ably provided by Apple Education Team members at the remote co-located pre-school and school. Prior to the delivery of PD many of the educators described themselves as digital novices. The Apple Education Team and the researchers approached the PD playfully, but with a success-orientation to enable participants to readily have successful experiences with the digital applications. These successes helped educators to feel more confident and capable of using digital technologies in their own practices. The sessions were carefully scaffolded by the Apple Education Team, using well-considered supporting resources in line with educators needs in-situ, (e.g. natural materials to explore using digital applications) in the early learning context. This enabled participants to engage playfully and ‘naturally’ with a range of built-in applications on iPads in preference to using more expensive, purpose-built apps designed for ‘educational’ purposes. As a matter of ethical reciprocity and valuing adding for the school leaders agreeing to host the project, other school and early learning centre staff were invited to participate in the PD (as shown in Figure 2).

**FIGURE 2: PROFESSIONAL DEVELOPMENT OVERVIEW**
FINDINGS:
REFRAMING THE LEARNING POSSIBILITIES USING MULTIMODAL APPROACHES

After the initial personalised professional development (PD), educators quickly expressed themselves in ways that demonstrated an increasingly digitally literate persona. Educators were clearly enthused about the possibilities for pedagogies of production; that is, a pedagogical orientation towards encouraging the learners to notice, record and re-view their own day-to-day practices in the pre-school. This became a useful provocation for practice across the study. It became something of a mantra for the educators in thinking about the learning possibilities with the young children in their care. The educators expressed, on multiple occasions, how powerful they found this reframing of possibilities for learning in the pre-school, provided by the technologies.

TRANSFORMATIVE BEGINNINGS

There are many ways to present research data. In keeping with our study design’s impetus for listening to participants in-situ, the following findings are presented through local educator’ reflections on what occurred. Some interjections are made in square brackets for clarity. The following excerpt is from an interview the day after the initial personalised PD, which marked the beginning of the project.

Yesterday [in the personalised PD], and this too could be my ignorance as well with technology, or my fear of, my interaction with technology; it just opened up this whole new world to me... I said to somebody, “Well, I can just see how it has cut my paper, my documentation load probably by about 60%,” and that’s just from yesterday... Just I’m sort of having the pictures in my mind of how the kids are going to interact with this technology and what they can create is just infinite possibilities. I see no end to it. For me, it’s just really exciting’, I think, for what the children can do. (Interview 18/10/2018)

In this very first discussion with the educators, we see that possibilities for learning and for efficiently using the technology for recording and reporting on children’s outcomes are identified. Following is an excerpt from the same interview which illustrates how quickly children began using the iPads to capture what was occurring in their worlds.
I said to children [this morning], “We don’t want to just sit and watch YouTube.”... “We want to be the people that are making the stuff for other people to watch,” and the children were saying... “Oh yeah,”... I said, “We want to be the ones that are creating.”

So they [the children] were getting into it, some of them really took it quite seriously, “I’m going to start making a song and I want to start making a film,”... we actually had some bees outside and one [child] was trying to count the bees, because we were having a discussion about them and we [educators] said, “How many bees have visited the garden?” One [child] said, “44,” one said “55,” the other said, “66,” and then the next one came through with “77.” I said, “Oh, that’s an interesting lot of numbers.” They said, “Oh hang on, we’ll take a photo.” So, they ran and grabbed the iPad and went outside to take a photo...

We had them (iPads) for ten minutes literally in the room, you know, and I thought well, this is the start of it. This is where it is going. (Interview 18/10/2018)

This excerpt illustrates how the digital modality offered learners a way to verify whose estimation of the bee population was most accurate. Estimation, (the approximation of quantity), is reported to be difficult for school-aged children (Booth & Siegler 2006). This example also shows how quickly learning processes, like noticing, wondering and reasoning, were enriched through access to the technology (Department for Education and Child Development 2015). The visual literacies involved in using photos to support comprehension offered an immediate way to extend the pre-schoolers’ thinking, directly in the context of their purposeful, but playful explorations.
TRANSFORMING PRACTICE

The excerpt below is an educator reflection on changing practices in the pre-school as a result of working multimodally.

It’s [the technology] been really, really very good. And then for some of us, we’ve been discussing how it’s actually made us notice a lot more… What we’ve been noticing is, we extend the children’s learning with what we have been documenting [using the iPads] and what they’ve [the children] been documenting. It’s in your face, you can see what it is. And so, as it is in personalising the curriculum, the environment, to be specific for the children, it’s been a whole lot easier for us to be able to do that. And, when we look for the children’s learning, it’s more visible too. Then [we are] able to translate it, document it and carry it on and extend it. It has been, has just been a lot easier for us. (Interview 16/08/2019)

In this excerpt, the initial thoughts (see interview 18/10/2018 p. 9) around the potential of the digital applications for noticing, recording and reporting on children’s learning progression have been realised. Further, the educator talks about the increased visibility of children’s learning, and in turn, the provision of an intentional personalised curriculum based on what they are noticing. By way of example, the child that is the topic of conversation in the following two excerpts is a four-year-old boy described as non-verbal but ‘bright’ by early years educators.

He [the child] sized up three giraffes, so he had a big giraffe, medium-sized giraffe, little giraffe. He lined them all up in order of largest to smallest and then on the fruit tray, we were handing out the fruit, we have a thing where we only take two pieces of fruit. He wanted an extra one. One lady who was visiting said, “Oh no, no, no, you have two pieces of fruit,” and he had a meltdown and we said to her, “Just let him get another one.” So, he got the other one and he lined all three [pieces of fruit] in front of those giraffes, so he just wanted to feed his giraffes! (Interview 16/10/2018)

What is illustrated here, is an early iteration of how the introduction of the digital applications combined with material play, amplifies educator’s awareness of children’s understandings, because the focus moved from usual ways of looking for what the child knew, i.e. counting blocks aloud. It was a key realisation for educators participating in the project when they could clearly see the non-verbal child demonstrating he knew how to order objects by size and could clearly subitise three. Subitising is an important foundational mathematical skill. This reinforced for the education team that the non-verbal children in their care could be repositioned - and importantly recorded - using the digital applications as understanding foundational skills; in this case, conceptual numeracy.

The following excerpt illustrates a deepening in the same child’s conceptual understanding, which educators were able to record using the digital applications and reflect with the child about what he could do.

It’s [the multimodal approach] really allowed us to sort of individualise the program too, you know, so we can say that… For example, he [non-verbal child] makes these perfect volcanoes. So, he likes that, and then we’ve tried putting out clay to see if he will mould the volcano… I bet my backside on it that we would have never, ever have really noticed before [capturing everyday activity on iPads]… when you look back at the photos, and you see how he’s extended that from just two, three dinosaurs together, going “rah rah rah”, to then setting up his own little mini world with logs, trees, volcanoes, there has to be some water so they [dinosaurs] can drink, he breaks up leaves to put there, so they eat, you know, so when you see how it’s started with the two dinosaurs to that [complexity]… (Interview 17/08/19)

Illustrated here, is the noticing of the non-verbal child’s developing sophistication in their awareness of the social world through their play-based learning with dinosaurs. This in turn, prompts the educators to continue to extend the child’s individualised learning by connecting to his interest and recording the learning progression. Further, the educator uses the photos and videos of the child to affirm with him what he can do. In line with the principles of early childhood teaching, educators are intentionally adopting holistic approaches and being responsive to the child, as well as valuing the child’s social world (Department of Education and Training 2009). The evidential noticing also illustrates that educators are evaluating the effectiveness of the multimodal approaches and the kinds of learning it affords the children. The child’s developing conceptual awareness encompasses the connection between himself as an individual, his environment and the environments of other living things. The child is ‘becoming’ a learner through “building and shaping their identity through their evolving experiences and relationships” (Department of Education and Training 2009) in the pre-school.
PEDAGOGIES OF PRODUCTION AND PLAY

The pre-school educators integrated the digital modalities, with material play and talk, in ways that permitted the children to see the iPads (and their applications) as one of the many options for play and meaning making in the pre-school. This shifted the dialogue around what was permitted in day to day activities, in the teaching and learning environment, to include digital production. The iPads were available for use in the sand pit, indoors and anywhere that materials were available for play or artistic pursuits. They were also used during more structured sessions for learning to read, (i.e. practising alphabetic letter-sound correlations). In other words, what was authorised as ‘normal’ modes of operation for the children by educators changed with the new modality; which in turn, allowed new ways of being in the pre-school for the children. An everyday example was the children’s fascination with catching some local feral cats. The iPads become central to this endeavour. The children are [also] starting to notice a lot more too [going on around them], like, we’ve got a couple of feral cats in the school and they’re dead-set on catching them. So, we have this ongoing series of photos … and so [the children] set up the iPads on record to record the cat flying past. And, they’ve done this jumble of wool and string and everything in the in the trees, so the cat runs through, it gets tangled… [Children say] “There’s the cat. Quick grab an iPad”, so they all grab an iPad, they go out, they just sit there on guard ready to capture photos of these cats. So, they use these as actual recording tools, they are using them as tools to record their learning about them. (Interview 16/08/19)

The applications on the iPads offer such a learner a way to document, review and extend their own learning inquiries. The following excerpt speaks of the same child [Child 1], guiding a child who has little language and is described by educators as ‘high needs’ [Child 2].

[Child 2], he’s really quiet, he was sitting next to [Child 1] and copying what he was doing and then [Child 2] indicated, “No, no I don’t want to take photos, I want to take record.” And so, then he went from the photos to a video - after I said to him, “What are you doing, [Child 2]? I’m just taking a video, ...” He was sitting next to him, copying what he [Child 1] was doing. (Interview 29/11/18)

This is one of many examples educators mentioned of children helping each other to learn about the features of the iPads. Some of the children seemed to have a real flare for production and would go to great lengths to organise peers to ‘star’ in the short videos produced in the pre-school.

We have, every Thursday, a little musicians session and [Child 1] didn’t want to join. So I said to him, “Well as the producer, would you like to sit down and would you like to record the session?”, so he did… He’d just go video, photo, audio. This boy just goes all out. And he does- he’s like that in his general play, where he experiments with everything. Takes many different angles. (Interview 29/11/18)

EVERYDAY AUTHORS

As a result of the digital applications, the early learning site has become awash with a variety of videos, photos and books. Arising ‘organically’ out of children’s every day happenings, the children have begun to build upon their initial photo taking and videoing during their daily explorations, retelling and sharing their experiences (visually/verbally) through the making of books.

[Child] was really interested in making a lot of books, [using] Book Creator. She said, “I want to take lots of photos. So, I can take photos of my friends doing things”. And so, she just went around; she took just random pictures, she’s always doing that now that she knows how to make a book. She’s made about four books you know, just about things she likes… For our nonverbals we’ve had [Child 2] picking up iPads and… [Child 3] too, you know [who we help create a book], but look, I cannot actually explain the benefit that the iPads really created for us, you know, and we’ll go back and look at photos and go, “Oh, Wow!” (Interview 17/08/19)

The three excerpts below outline the activity of a child (referred to also as Child 1) described by educators as capable, artistic and meticulous in the organisation of their own learning space and creative productions.

[Child] says, “I’m making a pump for the water, because our water pump outside doesn’t work, so I’m gunna make one.”

[Child] makes sure the hose goes down into the pump and then fills it up with water. [Child] appears to think about the trajectory of the water, then he pauses. He takes his time, looking at different angles and ponders how to tackle the issue of the water’s flow. (Interview 7/11/18)
Making books in pre-school proved an effective way to interest children in meaning making and reading. For reluctant readers, or those who come from families where reading is not part of their everyday activity, it is also a powerful way to connect children to the concept of the written word, and written texts more broadly. Until children understand the role that written texts play in their lives and what mastery provides in ‘real’ life beyond school, many children who come from literacy poor backgrounds will fail to engage in any depth with more rote approaches (Preece & Levy 2018). The pilot research, undertaken here, indicates that multimodal approaches can encourage pre-school children to engage in a range of language and text rich activities, such as bookmaking. Central to this is focussing the bookmaking on activity that has meaning for them.

It is generally considered good practice for early childhood educators to document children’s learning and share it with their parents and caregivers. As such, the sharing of these books with family happened ‘naturally’ through digital and printed means, in part driven by the children’s enthusiasm to share their stories and in part by educators, to open lines of communication with their remotely living community. The books, photos and videos were shared with families, sometimes in hard copy and sometimes using a moderated social sharing platform that was administered by educators, to control who had access to content. It was very positively received by families and the broader community.

So then being able to record that learning that does happen, and actually make it visible for the parents… It’s been absolutely huge. We’ve had, we’ve had so many comments from parents we’ve had parents “Oh, can we please? Can I hook up the children’s Grandma in Canada [via moderated sharing platform], because she would love to see what they’re doing? And, and so it has, it’s really created this sort of network. (Interview 7/11/2018)

The children’s productions thus became a catalyst for connecting with families. The multiple modalities children’s work was available in made it easier for the staff to share children’s productions and/or documentation with the community, be it local or international.
Not just that it’s tied that learning with what they are doing with home. For instance, we had
young [child], he’s at the woodwork, he was building a house… and so we took some photos,
just a small post to put up on,…, And you know Mum wrote back: “I just love this because [child]
is always building with his Dad in the shed”. And, you know, we [staff] love it, and just those
small little connections has really, helped our relationship with the parents too, where they’ve
come in and gone. “Oh, you know, we see what you posted. And it’s fabulous. So, you know,
to need any donations towards that”, because they’ve seen that we have been [for example]
cooking”… And so, it’s, it’s really, it’s really spread, sort of far and wide [in the community],
actually. (Interview 15/08/2019)

The excerpt above reveals the extent to which the digital learning stories have
filtered into the community, and there are many other examples. One that stands
out for retelling, is the case of an ‘I can’ book created with and for a non-verbal child
whose family rarely made personal contact with the pre-school. A family member
asked for another copy of [child’s] ‘I can’ book. The ‘I can’ book created with the help
of an educator scribing, depicted photos showing a range of the child’s favourite
activities. Educators thought it was an important connection made with the remotely
living Indigenous family. Such connection had previously largely alluded them.

These kinds of outcomes are impossible to measure on standard indicators, but
they are clearly important in the remote learning context where Indigenous family
members have had generations of feeling alienated from (western) schooling
and other social systems, such as health and welfare. These are systems that hold
‘democratic’ authority over many aspects of the community (Gray & Beresford 2001).
The remote community in which the Multimodal Childhoods (pilot) Project was
undertaken remembers and suffered the forced removal of children, which occurred
between the late 1930s and mid-1970s. This is relatively recent history and, as such,
developing reconciliatory relationships between schooling and local families must
be acknowledged as important in such communities. Such relations require time,
respect and open channels of communication. It can be argued on the evidence
presented here that the multimodal approaches in the pre-school have contributed
in some small, but positive way to building relations between the pre-school and its
remotely living community.
Across the interviews with educator participants, a recurring point of discussion has been the heightened awareness of what children do and enhanced abilities to report on children’s outcomes.

So for us, being able to capture these moments on these digital technologies that we can then turn into something meaningful for them… So, if we can capture (moments like) that and keep that, I guess, in like a [digital] journal or portfolio type thing that we can keep or share. (Interview 16/08/19)

Educators spoke of this being invaluable in terms of reducing their administrative load. It also represented a fundamental shift in the educator as primary documenter of learning. Here the pre-schoolers themselves were very involved in recording (via video/photos/audio/writing/drawing/making) and therefore actively participated in the documentation of their own learning. This then, worked toward honouring the child as a co-constructor of their own learning and assessment. The practice of co-construction aligns strongly with the principles of the Reggio Emilia Project, where children are viewed as “active protagonists of their own growth and development processes” (Rinaldi, 2013 p. 31).

CONCLUSIONS

In the remote community, children and families had very varied levels of experience with digital technologies in their home lives. Some pre-schoolers reportedly engaged in the use of digital technologies regularly, others had never accessed it before. An unforeseen phenomenon then was that some of the pre-schoolers were initially confronted, surprised, perplexed by the digital technology in the pre-school. As one of the educators explained:

The spectrum of learner experiences with digital technologies was diverse; from young children eagerly creating content with confidence, to those who had never seen a digital image of themselves. (Interview 7/11/2018).

The Multimodal Childhoods (pilot) Project, however, illustrated the potential for multimodal approaches to reposition remotely living pre-schoolers relationally to their foundational learning. Seeing the digital technology as a powerful tool for production, play and meaning making offered the pre-schoolers ways to engage in learning that connected to their ways of being in their community. These were ultimately shared with family and community.

The introduction of the multimodal approaches offered learners ways in which they could deepen their own meaning-making through their play-based explorations within the pre-school’s emergent curriculum. This had two-fold benefits for pre-schoolers and educators. Educators were able to capture and record these moments of learning digitally. Pre-schoolers, regardless of abilities, were able to illustrate their developing dispositions for engaging with incremental shifts in conceptual understandings related to numeracy, literacy and their social worlds. These approaches were particularly beneficial for providing communicative opportunities for learners identified as having little or no oral language, or from backgrounds of profound disadvantage, such as trauma, neglect, or both. The diverse experiences children brought to pre-school from homeworlds were accounted for in multifaceted ways. The multimodal approaches made visible the contribution of communication modes such as gesture, symbolism and object placement to meaning making; as well as the functionality of emergent literacy practices, such as oral language and written text.

Across the pilot project, the change in the educators’ view of their own capacities for digital practice led to a change in teacher-standpoint towards learning with digital technologies. This revealed itself in several ways. First, it resulted in an important shift in the positioning of the digital applications inside the learning environment as educators made the iPads continuously available for use by pre-schoolers inside and outdoors. This led to the devices assuming a more prominent position in the learning environment and they were quickly taken up by learners as part of their repertoire of explorations and play.

Second, as a result of changed teacher standpoints towards the digital devices, some pre-schoolers took the lead in creation and production. Pre-schoolers encouraged educators and peers to be part of their productions, undertaken as part of their everyday activities. In doing this, pre-schoolers at times became teachers to their peers. The early learner-produced artefacts created a sense of momentum for the educators to deepen and extend the digital play within the existing planned curriculum. The iPads became part of, not extraneous to the learning experiences in the site.
Third, this opened new pedagogical possibilities for ‘meta-review’. In other words, new ways of speaking about and reflecting on learning were possible. For staff, this meant being able to talk with learners, about skills and dispositions they were developing that, without the digital device, may have been difficult to capture in the learning milieu. The digital applications afforded educators opportunities to rewind, replay, and review learner actions that may otherwise have needed small manipulations and adjustments to help them succeed (e.g. to connect train carriages together to avoid frustration or to correct a pencil grip).

Fourth, the ability of learners to see and review themselves for who I am, what I like, what I do, and so on was indicative of important learner identity work in action. This development was of particular import, because improvements in positive learner identity are recognised as integral and interrelated to improved learner resilience; and in turn, future academic outcomes and achievements.

**POSTSCRIPT: LITERACY IN REMOTE COMMUNITIES**

The findings arising out of Multimodal Childhoods (pilot) Project support the view that one-size fits all interventions to perceived literacy deficits in communities do not work (Comber 2016). It appears that there is a disconnect between ‘standard’ literacies and measures and the culturally valued ways of being and doing in the remote communities of South Australia. The pilot explored the utility of multimodal approaches in one remote pre-school context. Importantly, however, it directed the authors to consider using multimodal formats for bridging the divide between doing learning in the remote site of formal early learning and the community beyond it. It also reinforced how early learners’ natural explorations traverse many aspects of the curriculum, for example in the use of numerate concepts in their stories and play. It is these aspects of taking multimodal approaches in early learning that the authors now turn their attention to, as they continue to research beyond the pilot project.


REFERENCES


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