

E-Portfolios: Supporting Collaborative Partnerships in an Early Childhood Centre in Aotearoa/New Zealand

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Abstract This article describes and analyses a small scale qualitative research project which explores teachers' and parents' perspectives on whether e-portfolio software can support and enhance collaborative partnerships between teachers, children, parents and whānau (families) in an early childhood setting in Aotearoa/New Zealand. Two of the key themes that were identified through thematic analysis are (1) communication: a key characteristic of collaborative partnerships, and (2) e-portfolios as a tool to enhance partnerships. These themes respond directly to the research questions and notwithstanding, all participants agreed that e-portfolios have made a positive contribution to collaborative parent-teacher partnerships in the context of this setting. Implications for practice, limitations and recommendations for future research are suggested.

Keywords Early childhood education · E-Portfolios · Learning stories · Collaborative partnerships

Introduction

In Aotearoa/New Zealand much diversity exists in early childhood education with different programmes, philosophies, structures and settings contributing to the distinct individual learning environments that provide care and education to children between three months to 5 years of age (Alvestad et al. 2009; Ministry of Education [MoE] 1996). However, despite this inconsistency, young children will have their learning positioned within the vision that is created by *Te Whāriki*, the national early childhood curriculum, irrespective of the setting (Alvestad et al. 2009; MoE 1996).

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Te Whāriki is underpinned by socio-cultural and ecological systems theories and Kaupapa Māori, whereby the social interactions and relationships between people are believed to be central to the learning process (Edwards, as cited in Cooper et al. 2014; MoE 1996) and children's learning, more often than not, will be documented in learning stories. Learning stories are a narrative form of assessment using a notice, recognise and respond sequence to record learning that is considered valued and are open to contribution from children, parents and families/whānau, positioning the teacher in a supporting role of children's learning and the collaborative partnerships between the early childhood setting and the home context (MoE 1996, 2017). Collaborative partnerships are to a large degree, a basis for working effectively with families (Clarkin-Phillips and Carr 2009; Duncan 2006; Keesing-Styles 2000) with much literature supporting the positive correlation between family involvement in their children's education and their long-term academic achievement (Epstein 2001; Fan 2001; Kim 2002; Redding 2006). In the context of early childhood education in Aotearoa/New Zealand, which emphasises responsive, reciprocal, relationships (MoE 1996), and the theoretical perspectives of Bronfenbrenner, who proposes mutual trust and a balance of power within a child's connecting microsystems is beneficial for development, collaborative partnerships can best be defined as:

Mutual respect, trust, open 'both-ways' communication, common goals which both parties are clear about, recognition of the unique contribution and strength the other brings to the relationship, shared decision-making, sensitively to the perspectives of the other, teamwork and an absence of rivalry. (Keesing-Styles 2000, p. 5).

Stonehouse (2011) suggests that children's learning is enhanced through these type of partnerships by collaboratively negotiating positive experiences within the early childhood setting, a view shared by international research as being significant in providing long term positive outcomes for children (Cooper et al. 2014; Turney and Kao 2009). However, with the advancement of technology into early childhood education, it is inevitable that learning stories have begun their transition from hard-copy portfolios to online medium, as has the way in which we communicate with parents and families. Therefore, it is well worth exploring whether teachers are able to engage e-portfolios to cultivate these partnerships. It is anticipated that the data provided from this study will be pertinent to early childhood professionals, particularly those already using, or considering moving to, an e-portfolio programme.

Educa and Storypark are currently the two e-portfolios providers to choose from when early childhood services in Aotearoa/New Zealand are considering the move from the more traditional hard-copy portfolios to the online version. Educa and Storypark offer a range of features designed to increase family involvement in their child's learning (Educa 2016; Storypark 2015). Both programmes provide a range of ways to communicate with families, such as learning story templates, conversations, video and audio, and can be accessed in multiple ways, such as desktops, laptops, tablets and smartphones, with an app available for tablets and smartphones. Additionally, Educa and Storypark provide an extensive range of help articles, set-up guides, video tutorials, training, and tips and tricks for using the programmes, as

well as an ongoing help desk feature, which can be accessed by email or live chat for early childhood services at the outset. According to both websites, Educa and Storypark provide a private, safe and secure environment for their customers, which they claim: empowers teachers and parents, engages families, nurtures life-long learning and fosters partnerships with parents and families (Educa 2016; Storypark 2015).

Theoretical Framework

Te Whāriki is Aotearoa/New Zealand's early childhood curriculum document and is used in a diverse range of early childhood services as a framework for providing "a consistently high quality curriculum" (MoE 1996, p. 7). Its philosophy aims at empowering children "to grow up as competent and confident learners and communicators" and emphasises the importance "of reciprocal and responsive relationships for children with people, places and things" (p. 9). The four foundation principles of *Te Whāriki* (relationships, empowerment, holistic development and family and community) reflect the theoretical perspectives of socio-cultural theory, ecological systems theory and Kaupapa Māori (MoE 1996). Whilst ecological systems theory and the Kaupapa Māori are written in the curriculum document, Carr et al. (2003) describes how Vygotsky's ideas are reflected in the framework of *Te Whāriki* as being situated, with learning being distributed across and stretched over, the cultural tools of people, places and things and integral to the learning process (MoE 1996; Carr and Lee 2012).

Two key aspects that reflect the theoretical perspectives of all three theories, which were of particular significance to this study, are documented in the principles of 'family and community' and 'relationships'. The first principle, family and community identifies the importance of parents and families being part of the assessment process as "parents and caregivers have a wealth of valuable information and understanding about their child" (p. 30). Additionally, the curriculum states "observation and records of children's learning should be part of a two-way communication that strengthens the partnership between the early childhood setting and families" (p. 30). The second principle, relationships, recognises that assessment practices are "influenced by the relationships between adults and children, just as children's learning and development are influenced by the relationships they form with others" (p. 30). Strong socio-cultural perspectives underpin the *Te Whāriki* curriculum framework, however within any situated early childhood context in Aotearoa/New Zealand, the fundamental views on education, systems of evaluation and assessment, multiple perspectives and the communities' culture will all influence the nature of assessment practices, learning stories and the collaborative partnerships between teachers, young children and families/whānau.

Although socio-cultural theory underpins the principles of *Te Whāriki*, Kaupapa Māori is also significant to the curriculum framework. *Te Whāriki* is Aotearoa/New Zealand's first bicultural curriculum document (May 2001), honouring the Treaty of Waitangi by supporting and promoting bicultural development (Metge 1990). The bicultural aspect of *Te Whāriki* was of particular significance to this study as it is

underpinned by the principles of Kaupapa Māori. One of the primary goals for bicultural development in education is increasing Pākehā commitment to developing collaborative partnerships with Māori that support Māori aspirations for tino rangatiratanga and is a political process linking it to the Treaty of Waitangi; to develop the social and economic status of Māori people (Akinyela 1991). The significance of *Te Whāriki* in this partnership, is the intentional effort to promote a Treaty-based model of bicultural partnership by collaborating with both Pākehā and Māori in its inception (May 2001). Moreover, it was developed from within the early childhood sector in partnership with Kohanga Reo National Trust and Māori Language Revitalisation early childhood development (Carr and May 1993). *Te Whāriki* has given equal whakamana (empowerment) through the principles and strands, both in English and Māori. The document outlines learning expectations reflecting both Pākehā and Māori partnership in relation to the Treaty of Waitangi with the context firmly grounded in Aotearoa/New Zealand. This year, with the release of the revised version of *Te Whāriki* (2017) has seen the document written in English and Te reo Māori both equally represented, supporting this partnership and allowing for absolute clarity so misunderstanding would not be through written translation. This partnership demonstrates collaboration between cultures which has given rise to two separate approaches that have been innovatively woven together in Aotearoa/New Zealand's educational context and reflects Whakamana: empowerment.

Methodology

Informed grounded theory (IGT) within the socio-cultural and ecological theoretical frameworks of the early childhood context in Aotearoa/New Zealand was chosen as the best method to answer the research questions in this small qualitative research project. Thornberg (2012) states that IGT refers to:

a product of a research process as well as to the research process itself, in which both the process and the product have been thoroughly grounded in data by grounded theory methods while being informed by existing research literature and theoretical frameworks (p. 7).

IGT allowed an evaluation of the fit between the emerging data and the initial questions and guided all stages of the research process; this supported a focus on the process, as well as the outcome (Cohen et al. 2007). The flexibility of IGT allows researchers to shape and reshape the data and refine the data collection, as opposed to a more rigid prescription, and it is this moving back and forth between data and analysis that is the real strength of this approach (Charmaz 2006).

I engaged abductive reasoning, making comparisons and interpretations in searching for concepts, categories and explanations of the phenomena. Thornberg (2012) explains this concept of abduction as something in-between deduction and induction and denotes the creative process of discovering new concepts, ideas or explanations which cannot be described by pre-existing knowledge or theories. Kelle (2005) argues that the drawing of good abductive inferences is dependent on

the researcher's previous knowledge, rejection of rigid beliefs, development of open-mindedness and reflexivity. Reflexivity, is the concept used to describe a deep level of self-conscious reflection and awareness of what the researcher brings to a situation, that is, how the researcher's multiple positionalities impact on the research process as a researcher and a practitioner (Charmaz 2006; Cohen et al. 2007). It is with informed 'responsibility' that I admitted my own theoretical understanding from the outset of this study, to avoid masking my own preconceived assumptions and preventing undue bias.

The specific phenomena focused on in this study were the e-portfolios, and more specifically, the collaborative partnerships between teachers, young children and their families. The aim of the study was to examine if and how e-portfolios can be used as a tool to assist teachers to support and promote collaborative partnerships between themselves, young children and their families, as well as supporting families to engage in collaborative partnerships with their children's teachers.

Five registered early childhood teachers from one early childhood centre were selected by purposeful sampling to participate, first in individual semi-structured interviews followed by a focus group discussion. According to Hycner (1999), "the phenomenon dictates the method (not vice versa) including even the type of participants" (p. 156). The primary participants were five registered early childhood teachers who "had experiences relating to the phenomenon to be researched" (Kruger 1988, p. 150) and were chosen through purposeful sampling to provide a cross-section based on teaching experience. Purposeful sampling was chosen as the best strategy for selecting participants that were most suitable for the particular purpose of the research and fit the profile (Mutch 2005). The selection process took into account the length of their practising certificates: one provisionally registered teacher, one teacher who had been registered for less than 5 years, one registered teacher who had been practising for more than 5 years, one registered teacher who had been practising for more than 10 years and one registered teacher who had been practicing for more than 15 years made up the participant teachers. Additionally, all parents in the early childhood setting who had opted to have their children's learning documented through the e-portfolio software were invited to participate in an open ended questionnaire to support triangulation and credibility of the study. Sixteen parent questionnaires were completed and returned for analysis.

A discovery-orientated interview process was designed to support the process of developing and refining questions as a basis for a more rigorous and reflexive inquiry (Agee 2009). Discovery orientated questions are broad, allowing for a process of discovery and exploration, rather than a more rigid, focused question which may limit opportunities. Agee (2009) adds that more focused questions can also constrain the researcher's understanding and analysis of the phenomena and a set of initial interview questions allowed for a review of the topic on a broad scale before refining the lens. The interviews were semi-structured and organised around a set of open-ended questions, which allowed room for divergence in line with IGT by providing space for emerging topics (Charmaz 2006). These interviews became the platform to develop a second set of similar questions for the focus group. All interviews were audio taped for transcription and analysis. The data gathered from the semi-structured interviews and focus group was coded into themes and analysed

using thematic analysis. Analysing the data began after the first interview. This sequential approach enabled identification of relevant codes and concepts, and allowed redirection and revision of the interview questions for the focus group.

The third data collection method was a questionnaire that invited parent voice and supported the collaborative aspect of the study. This was distributed to all current parents/families involved with the e-portfolio software in the target centre. Prior to completion, the questionnaire was piloted to check that the design worked in practice. This allowed opportunity to identify, refine and amend problematic questions. Children's voices were not included in the data collection, as the initial focus was on parent-teacher partnerships.

Three key themes were identified in this study and align with *Te Whāriki's* principles of 'family and community' and 'relationships', which relate to the aims of the research. This paper examines two of the key themes: communication: a key characteristic of collaborative partnerships and e-portfolios as a tool to enhance partnerships, which link to the theoretical framework that guided this study and were used to answer the research questions.

Ethical Approval

The research was conducted in the centre where I was employed in a senior position; however, a large percentage of my day-to-day activity was spent in the classroom as part of the teaching team, thus the relationship with participants was equitable rather than at a power differential. The participants were made aware that by taking part in the research or opting out of the research would not have any effect on staff appraisals or the working relationship of the teachers at the centre. Tolich (2001) states that setting up open relationships and committing to open dialogue where the research process can be discussed honestly would support an environment where difficulties could be resolved successfully.

Once ethical approval was granted the centre manager was contacted and the participant information sheets and ethics consent forms were compiled and distributed to the teacher participants. Each teacher participant was issued a participant information sheet so they were fully informed on the justification of the research. This included reference to the data collection methods as well as the ways in which results will be disseminated to participants, other stakeholders and the community (Tolich 2001). The teacher participant information sheet also communicated: who the researcher was, what was required of participants and who to contact if they had any concerns. It also highlighted that participation in the research was voluntary and that participants had the freedom to choose whether they wanted to be involved or not (Tolich 2001). Each teacher participant was also issued with an ethics consent form to sign, agreeing to participate in the interview and focus group, whether they wished to receive a summary of the findings and that the focus group discussions must remain confidential. As this study involved interviews with a small number of individuals and a focus group, confidentiality and anonymity with respect to participants' identity could not be guaranteed. Therefore, a synopsis was presented at the beginning of the focus group that outlined clear expectations around

confidentiality and anonymity as the basis for providing respect and dignity for all participants as part of ethical research. Also, sensible steps were taken throughout data collection, data analysis and thesis writing to protect the identity of all participants. No names were used in the research reporting stage; instead, participants were referred to by the following pseudonyms: Ann, Belinda, Celeste, Donna and Ella. Parents participating in the survey were not identifiable as their responses were part of a larger sample group.

The parent/family participant information sheet stated the purpose of the research, research questions and aims, and how the results would be disseminated. It also stated that participation was voluntary, based on fully informed consent and that consent was given by returned ethics consent form and attached questionnaire. Both the participant information sheet and the accompanying ethics consent form informed parents/families that once they had returned their questionnaire they could not withdraw from the research, as the researcher would not be able to match their individual responses due to anonymity.

The centre was not identified in the research, nor was any reference to the e-portfolio software the centre used included in the findings. This assisted in maintaining anonymity of both the centre and the research participants and minimised the risk of potential ongoing implications as well as protecting my employment situation. Full support and consent from the centre manager was sought prior to conducting the research.

All raw data was destroyed upon publication of the research project and completion of the Master of education programme. The raw data was shredded and the audio was erased.

Findings and Discussion

Increased Communication: A Key Characteristic Of Collaborative Partnerships

A key finding that emerged from both teacher and parent participants was a shared view that e-portfolios have supported and enhanced the development of collaborative partnerships between teachers, children, parents and whānau within this situated context. References to collaborative partnerships were more obvious in the teachers' interviews with teachers sharing a mutual interpretation, which reflected a view that effective communication with parents and whānau was a significant aspect of collaborative partnerships. The participant teachers identified it was often difficult to engage parents and whānau in the traditional hard-copy portfolios and as such they were unable to gather parent and whānau voice for assessment of children's learning. They agreed that this was a real disadvantage of the hard-copy portfolios as they valued having parent and whānau involvement in the assessment process, in line with the socio-cultural assessment practice of *Te Whāriki*. However, the participant teachers responded that there had been an increase in parent communication and interactions since going online and this was a significant difference between the two types of portfolios.

This emphasis on communication aligns with the *Te Whāriki* principle of family and community, which identifies the importance of parents and families being part of the assessment process. The early childhood curriculum outlines that parents and whānau have a wealth of knowledge about their child and that observation and records of children's learning should be part of a two-way communication as this strengthens the partnership between the early childhood context and home. This view was evident when teachers highlighted the speed and frequency that parents and whānau are now responding to the learning stories and daily diaries that are shared with them. This immediacy of e-portfolios is also reported in the findings of similar research (Hatherly et al. 2009; Higgins 2015) and is a key aspect in helping to strengthen partnerships with families.

The teachers in this study described online communication as having supported them with face-to-face conversations. Belinda, one of the teacher participants commented that she often had feedback from parents within minutes of posting online and believed this had enhanced her communication with parents, both online and physically, and had led to greater understanding of a child's home context. Belinda stated

I've definitely got a few parents who are communicating straight away... instantly between us...you move forward quickly and you get more context so the child has more consistency, their worlds merge.

Anne also explains

I find when there's a comment from the parents, I always feel I want to respond...back it up, or support it/acknowledge it, because they've taken the time to do it...so I always make sure I reply.

Such views indicate that teachers in this setting are committed to building collaborative partnerships with parents and whānau and have a strong professional knowledge that underpins their beliefs and practice. Teachers' willingness to respond to parent feedback in their own time reflects their commitment to supporting partnerships with parents, as learning story assessment in this study is strongly viewed by teachers as a collaborative process and therefore should be shared between teachers, young children and their families.

However, although teachers said they valued parent and family involvement in the assessment process, they made significant reference to the difficulties they have encountered when trying to elicit parents' contribution to their child's assessment through the traditional hard-copy learning story portfolios, despite engaging in numerous ways to encourage parent involvement and as such, parents were generally positioned as peripheral participants rather than active participants in assessing their child's learning. It is unclear from the findings whether or not teachers had actually explained to parents the importance of having parent involvement in the assessment process therefore no claim about causality can be made from the data in this study. Nevertheless, it does highlight the ongoing challenge teachers face when trying to engage parents in children's assessment. This reflects the complex nature of the socio-cultural assessment approach of *Te Whāriki* with literature suggesting that whilst effective communication with families is

important, establishing relationships with parents and whānau can be problematic (Bernhard et al. 1998; Ebbeck et al. 2003; Laloumi-Vidali 1997). Nevertheless, since the move to e-portfolios, teachers had noted a culture of reciprocity that had been created between themselves and parents that was previously lacking in the hard-copy portfolios.

Similarly, the parent questionnaire exposed that most of the participating parents believed that communication was the most significant determinant for having an effective collaborative partnership with their child's teacher(s). Parents responded that it was not only the improved two-way communication they experienced in the e-portfolios, it was the speed and frequency with which their child's learning and development was being communicated, which has led to more effective collaborative partnerships with teachers. Almost half of the participating parents responded that they felt drop off and pick times were very busy and they often missed the opportunity to have conversations with their child's teacher(s). Parents emphasised that they found the e-portfolios beneficial in alleviating some of this tension as they now have an alternate way to communicate with teachers. The asynchronistic component of the e-portfolios means that parents and whānau can access the portfolios at any time, as well as being able to communicate without having to be physically available at the same time. This is echoed by research from Higgins (2015) who reported that many of the challenges around finding a suitable time for parents and teachers to talk are alleviated through e-portfolios. Teachers in this study commented that they had been regularly checking the e-portfolios, often in their own time, to check if parents had responded. They said they were more likely to respond to parent feedback quickly now as opposed to the hard-copy portfolios because it was this reciprocity in the online platform, they believed, was enhancing their partnerships with parents and whānau. This is resonant of Gonzalez-Mena and Eyer (2001), who claim that time and effort from teachers is essential in developing collaborative partnerships with families. A willingness of the centre to give teachers the time to provide opportunities to support the removal of barriers has been particularly significant in ensuring relationships are nurtured within this environment. However, whilst teachers have good intentions, it seems that through the e-portfolios, the work/private life boundaries are weakened and work relations intrude into teachers' private time.

E-Portfolios as a Tool to Enhance Partnerships

Teachers emphasised that over the last year, the single most significant factor contributing to the development of collaborative partnerships between the early childhood setting and the home environment has been the ways in which they have used the e-portfolios as a tool to intentionally cultivate these partnerships. Teachers believed that this strengthening of partnership is visible in a number of ways. Firstly, they identified that they used the information they gathered from parents and whānau through the online dialogue to inform their teaching practice. From a philosophical perspective, this could arguably align with Vygotsky's genetic law of development, which suggests this primacy of social interaction in human development is a twofold process: first the learner acquires knowledge through

social interactions, then internalises it and adds their personal value (Turuk 2008). Teachers explain children's learning through a socio-cultural lens and articulate that children learn through what they describe as 'meaningful interactions' (MoE 1996). Additionally, teachers highlighted that when parents and whānau add feedback, comments and their own (parents) stories to the e-portfolios, they felt better positioned to support and plan more effectively for individual children's learning and development. Similarly, this can be seen in the Māori concept of Ako. According to Tamati (2005), the concept of Ako means to both learn and teach and aligns within the context of whānaungatanga. Whānaungatanga is viewed as foundational in success for Māori children and shapes the learning context through the concept of Ako, which supports children to develop a strong sense of themselves as capable and confident in who they are (Māori) within the wider community context (Tangaere 2006). Ako is significant in learning relationships as the power distance is equitable and focuses on the dynamics of interactions and relationships in the construction of new knowledge (Tamati 2005). Such an approach highlights that the use of this new technology has the power to change the attitudes of both teachers and parents in relation to participation and portfolio ownership.

During the focus group interview, the teachers discussed how their interactions with parents and whānau and the wider community had impacted on their relationships with children. A key finding of this research was that all five teacher participants developed a greater understanding of the context of the children's world beyond the early childhood setting, which was not previously evident when using the traditional hard-copy learning story portfolios to document children learning, and was a distinct advantage of e-portfolios. Teachers articulated that this meant they were able to build stronger relationships with the children and their families and therefore able to plan more effectively for children's learning and development. One teacher discussed an example of the connecting links between home and preschool that she had experienced with one particular parent, which had contributed to effective collaborative partnerships with this family:

If you read the comments from Tom's [pseudonym] mother on some of his stories, she's talked about the things she's seen in the home environment and how she's encouraging him to persevere with different situations...like she's helping him cook at home...and he's peeling the vegetables...and she's showing him how to do it, and to persevere to do it himself, and follow through with situations, and that's something that we've been focusing on in his learning stories.

Her phrase 'to persevere' and 'we've been focusing on' suggests that parents and whānau involvement is central to teachers thinking in this context. This was also evident in the other teachers' discussions throughout both the individual interviews and the focus group.

Participation of the Wider Family Network

According to Barrett (2005), Batson (2002), and Cooper and Love (2001), e-portfolios are well established in the secondary and tertiary sector and there is an

abundance of literature that acknowledges e-portfolios as supporting and promoting increased conversations, improved relationships and better learning outcomes. E-portfolios offer teachers new ways of engaging in partnerships with parents and families through communication, exchanging of information and the sharing of online resources, which can be seen in this setting as well and two recent studies conducted by Goodman (2015) and Hooker (2016). However, to date, there is a lack of research that has addressed the impact of the wider family network. This could be due to the fact that the bulk of the research around e-portfolios has been conducted at secondary and tertiary level and as such is not aimed specifically at eliciting the views of grandparents and extended family members. Unlike the early childhood educational curriculum, which encourages participation of parents and the wider family network to support a child's holistic development (Ministry of Education 1996, 2017), the secondary and tertiary sector utilises portfolios as part of learner development with the learner taking responsibility for structuring their evidence for assessment (Cooper and Love 2001).

In this study, teachers noticed and responded that the wider family network was 'not missing out on children's learning and development' and viewed this as a key advantage of the e-portfolios. Similarly, parents said they 'liked' that they could share their children's learning with their wider family network. Most of the parent participants had invited grandparents, aunts and uncles to join their child's learning journey with many of these extended family members residing in other countries and typically have little physical contact with their grandchild, niece or nephew. Teachers expressed that the culture of collaboration with parents/families/whānau has been enhanced since the centre had moved to e-portfolios and that teachers are also experiencing this connection with the wider family network. Teachers mentioned in significant detail that these extended family members, who were mainly categorised by teachers as being 'grandparents' (but are in fact a mixture of grandparents, aunts and uncles), are adding yet another layer of information and insight into the child's wider family context. Teachers noted that up until now, they have not had much contact, if any, with extended family members outside of the immediate family, so e-portfolios have not only bridged this gap, they opened up a whole new dimension to a child's world and, subsequently, the way in which teachers can plan more effectively for children. Teachers discussed relationships as central to their early childhood beliefs and articulated that they intentionally respond to the wider family network to establish trust and to cultivate communication between themselves and extended family/whānau members. From the teachers' perspective, this access to the wider family is another key difference between e-portfolios and the hard-copy portfolios. This significant increase of involvement of parents and their wider family context has provided teachers with greater opportunities for gathering evidence and making more informed assessment of children's learning.

Teacher's Confidence

After initial insecurity and expected challenges of adopting new technology, teachers stated that, at the time of the data collection, they now felt confident

enough with the programme to be able to use it as a tool to intentionally build on the existing partnerships they had with parents/family/whānau. They discussed that because parents are responding to learning stories, ‘snippets’, daily diaries and other happenings online, they had been making an effort to be more proactive in the online platform as opposed to the hard-copy portfolios. In this way, they have created an environment of reciprocity that was not evident in the hard-copy portfolios. The teachers described how the e-portfolio software had involved parents more in their child’s learning. The most notable was that parents were beginning to actively engage in the software themselves by contributing their own stories about what was happening in their home context. Whilst the e-portfolio environment is secure for families to view their child’s learning and development, teachers can see everything that is being posted by both teachers and families. It emerged that all five teachers have been reading each other’s children’s portfolios and the stories that parents had posted, as they pop up on a type of running newsfeed similar to Facebook, which they could all view. This was something that had seldom been done in the hard-copy portfolio environment, as time, access and the general nature of hard-copy portfolios did not support this. The teachers believed this is a positive aspect of the software because they are able to gain a greater knowledge of all the children and their home context.

Teachers revealed that the format of the e-portfolios, which, when ‘published’, presents a professional looking streamlined document, has sped up the way in which they are able to effectively document a child’s learning, which they feel is largely due to specific characteristics of the e-portfolio programme that supports this process. The teachers explained, whilst they still reflect on children’s learning to analyse the learning that has taken place, the e-portfolios have generic learning tags¹ which are used to tag children’s learning and save time as they do not have to refer to *Te Whāriki* constantly to determine which strand and learning outcome most represents a child’s learning and development. Additionally, teachers indicated they no longer have to make fancy backgrounds and borders that make the learning stories aesthetically pleasing to parents/family/whānau as they are now able to insert photos into a single generic template, which they said saves an incredible amount of time. Essentially, teachers write the narrative, insert the photos, tag the learning and hit publish, job complete. Teachers identified that because of this, they can now spend more time focusing on the story itself, as well as writing more stories. Teachers’ commented that the nature of the learning story has not changed, just the way in which they can now tell the story. Consequently, teachers are enthusiastic about using e-portfolios, and they emphasised that they are committed to continue to enhance connections with parents and whānau through the online platform. Although Smith (2003) states that “Learning stories seem to have the extraordinary power to excite and energise teachers, parents and children”, she actually refers to the traditional hard-copy means of documentation. Still, teachers in this study reported a renewed excitement for learning stories in this new online learning

¹ Learning tags are like a label that is attached to a learning story. They generally relate to elements of the curriculum, outcomes, goals, dispositions, schemas, values, culture, interests or subjects. Each setting can create their own tags that reflect the specific context of the setting.

environment reporting that they would often respond to parents in their own time. Similarly, Higgins (2015) reported that popularity of e-portfolios with families placed additional pressure on teachers to produce more learning stories, and that teachers were motivated to write more stories for children whose parents actively engaged with the portfolio than for those children where families were less engaged. It seems that the real challenge in engaging families is not the learning stories themselves, but the way in which they are shared with young children and families.

Teachers noted a number of challenges that caused frustration when using the technology the centre currently used, the three comments that tended to be present in the majority of teachers' interviews were: (1) uploading photographs to the e-portfolios took a long time, and (2) that during this process the computers regularly froze and learning stories are lost as there is no auto-save function available. Finally, (3) there is no technology available in the classrooms to support the additional functions that the online programme offers, such as, video and audio capabilities. From a technological perspective, Anne very succinctly summed up how the teachers perceived the current technology in their centre: "If you're going to do a good job, you need the tools to do it with!"

Contribution to Children's Portfolios

The challenge of engaging families in hard-copy portfolios is evident in the responses of the parent questionnaire, which echoes that of the teachers' in terms of engagement. Many parents indicated that they did not take their child's portfolio home very often and did not contribute to them often/or at all. Nonetheless, whilst parents and whānau appear not to be interested in looking at, or contributing to their children's hard-copy portfolios, a large number of parents made direct reference to feeling unhappy and disappointed that they now did not have a physical book to keep when they left the centre. Along with not having a physical learning story portfolio, some parents viewed their child as missing out on being able to revisit their experiences through the hard-copy portfolios.

However, the data revealed that since the move to e-portfolios, a large number of parents now share their child's online learning stories with them, engaged them in conversations about what was happening in the photographs and talked to them about their friends, as opposed to the hard-copy portfolios, which they tended to use as a tool for children to revisit individually. Additionally, parents' now perceive that through the e-portfolio software they have a greater understanding of their child's day through the alerts of new learning stories, daily diaries and other postings. They also said they have increased conversations with their child about preschool activities, as well as an increasing dialogue with their child's teacher/s, which they feel has contributed to the development of collaborative partnerships. This increased engagement from parents in their child's learning is significant as it relates to the aims of this study revealing the ways in which e-portfolio software supports families to engage in collaborative partnerships with their child's teachers. This reciprocity aligns with socio-cultural theory that emphasises the importance "of reciprocal and responsive relationships for children with people, places and things" (MoE 1996, p. 9).

Implications for Practice

E-portfolios are relatively new to early childhood education and as such, there is very little data to draw on in regards to how this new technology impacts on the early childhood sector. The findings from this study contribute to the current research base and can provide future studies with useful data to draw on in relation to how teachers and parents use this tool to enhance and develop collaborative partnerships. The findings from this study can also be helpful for teachers and centre managers to consider, when shifting to e-portfolios in their setting.

A willingness to engage in the online platform from both parties has been a significant factor in the success of e-portfolios as a tool to support and enhance partnerships between teachers and parents in this early childhood context.

Willingness was central to answering the research questions of this study. Firstly, teachers were found to be using the e-portfolios in a variety of ways that encouraged parent participation and through the synthesis of the data collected, it was established that teachers experienced greater success in encouraging participation with the online e-portfolio model, than that of the more traditional hard-copy portfolio model. Secondly, through two-way communication and collaboration with parents and the wider family network, teachers have a greater understanding of a child's home context, which has supported them to plan more effectively for a child's learning and development by allowing a more holistic understanding of a child's microsystems. Teachers mentioned that increased parent engagement has not been limited to the online platform; a subsequent improvement in face-to-face interactions has also been observed. The data indicated that by creating a culture of information sharing through the e-portfolio system, teachers were able to draw on families' funds of knowledge, which is then used to support and foster children's learning and development. Parents also made significant reference to using the e-portfolios as a tool to engage in open dialogue with their child in the home context. Parents shared that by engaging with the e-portfolio system has contributed to a greater understanding of their child's day; they favoured the immediacy and their accessibility of the e-portfolios and valued the quick responses from teachers. This reciprocity has supported parents' confidence to continue engaging with their child's teachers and has contributed to creating collaborative partnerships between both parties.

Although, the findings in this study supported collaborative partnerships between teachers and parents/families, teachers raised a significant concern around e-portfolios and one that should be considered, especially in early childhood settings that are currently using, or are considering moving to e-portfolios. The concern was centred on children's accessibility to their e-portfolio and therefore participation in assessment of their learning.

Conclusion

This study explores the relatively short-term engagement of teachers, parents and whānau with e-portfolios; therefore, aspects such as consistency and increasing or declining engagement of teachers and parents and whānau are absent. A lack of

technology was found to limit teachers' and children's accessibility and therefore engagement in the classroom, which would not necessarily be reflective of all early childhood settings nationwide.

Whilst the collaborative partnerships between teachers, parents and whānau have been enhanced since moving to e-portfolios, there is very little data to draw substantial conclusions on if and how e-portfolios impact on collaborative partnerships with children. The findings revealed that, to a degree, teachers believed that partnerships with children improved as a secondary result of enhanced collaborative partnerships with parents. However, this study identified some key characteristics of collaborative partnerships that are essentially absent for children in this online context. Most notably is shared decision-making, inter-dependency and mutual respect. Additionally, children's accessibility to their e-portfolios arose as a significant tension amongst the teachers, whose pedagogical views were infused with the aspirations of *Te Whāriki*, which promote children as having opportunities to be part of the assessment practice, as well as opportunities to revisit their learning (MoE 1996). Therefore, further investigation in children's accessibility to their e-portfolio, alongside their perspectives of e-portfolios could be beneficial for future study in the early childhood sector.

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