



Teacher Use of Digital Stories to Promote Reflective Practice Supportive of Migrant and Refugee Children's Sense of Belonging

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Abstract

Creative and innovative reflective methods are important to prompt and sustain alternative and novel ways for teachers to consider their professional identity and practice. Digital storytelling is one such method that enables the sharing of valued events including narratives of lived experience. This paper reports on a case study investigating teacher use of digital storytelling to promote reflection and pedagogical awareness in support of immigrant and refugee children's developing sense of belonging. The case study is part of a larger funded project aimed at strengthening the identity and belonging of refugee and immigrant children in early childhood education. In the case study, four early childhood education teachers in an education and care centre planned and created their digital narratives, reflected on the process, and considered the opportunities and implications for integrating digital storytelling in their practice. A range of qualitative data were collected through observations (notes, photographs, video recordings), focus group interview, and teacher created artifacts. Thematic analysis identified that teachers valued their experiences with creating their own digital stories in identifying and affirming their values and identities as teacher practitioners, and in thinking more deeply about coming to belong. They recognised the transformative potential of digital storytelling in promoting understandings of belonging, facilitating reflective practice and identifying relevant belonging-based pedagogical strategies. They recommended other staff and parents could undertake a similar process, predicting that this would enable even stronger reciprocal connections between staff, parents and children to facilitate greater understanding of children's cultural backgrounds and home experiences as a basis for establishing more targeted belonging-based pedagogies.

Keywords Refugee and migrant children · Belonging · Digital storytelling · Early childhood education · Teacher reflection · Sustainable Development Goals

Introduction

The current escalation of the Ukrainian war conflict due to the Russian invasion of Ukraine has sparked a new tragic wave of refugee crisis. It is estimated that close to 7.9 million Ukrainians have been displaced (UNHCR, 2022a). At mid-2022, an estimated 103 million people world-wide

were forcibly displaced (UNHCR, 2022b). From this figure, 32.5 million are refugees while 4.9 million are asylum seekers. As of 2021, an estimated 36.5 million (41%) of the number of forcibly displaced people were children below 18 years of age (UNHCR, 2022b).

New Zealand has been accepting and resettling refugees since World War 2 (INZ, 2022). Following trends in global mobility due to refugee resettlement and migration, New Zealand's population and demographic landscape has been diversifying extensively. The rapidly increasing ethnic and linguistically diverse people groups in New Zealand (including in its ECE settings) has resulted in the country being characterised as 'superdiverse' (Chan & Ritchie, 2023). This has implications for early childhood teachers who have had to adopt new and different ways to respond equitably to address diverse children's educational needs.

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New Zealand's early childhood curriculum, Te Whāriki, is a bicultural curriculum for infants, toddlers, and young children (MOE, 2017). Te Whāriki's framework is described in terms of four principles (Empowerment/*Whakamana*, Holistic Development/*Kotahitanga*, Family and Community/*Whānau Tangata*, and Relationships/*Ngā Hononga*), five strands, goals and learning outcomes. The curriculum foregrounds a relational pedagogy approach in the ways teachers work with children, parents, and *whānau* (a Māori term referring to extended family or family group) to enhance a child's *mana* (a Māori term referring to the prestige, authority, status inherent within each individual that is inherited at birth). The four principles guide teachers' pedagogy and practice and are supported by the five strands which provide for a holistic curriculum: *mana atua* - wellbeing, *mana whenua* - belonging, *mana tangata* -contribution, *mana reo* - communication, and, *mana aotūroa* - exploration. With particular reference to the strand of *mana whenua* - belonging, Te Whāriki portrays belonging as children needing "to know that they are accepted for who they are and that they can make a difference" and that "whānau feel welcome and able to participate in the day-to-day curriculum and in curriculum decision making" (MOE, 2017, p. 31). Belonging is nurtured through children's interactions with teachers and peers, through valuing each child's diversity and through respecting the achievements and aspirations of each child's family and community. Te Whāriki emphasises that children are more likely to feel at home if their own culture, language, and world views are valued in the ECE setting.

This paper discusses a case study of teacher reflective practice through digital storytelling to promote their personal understanding of coming to belong and relevant pedagogical strategies supportive of immigrant and refugee children's sense of belonging at one ECE centre. It is part of a larger research project on strengthening refugee and immigrant children's belonging and identity through ECE (Mitchell et al., 2018). The project acknowledges that developing a healthy sense of belonging is a fundamental human need and basis for cultural identity and crucial for refugee and immigrant families to enable them to thrive and pursue productive life goals (Guo & Dalli, 2016). ECE can play a potentially transformative role in addressing the challenges in refugee and immigrant settlement, including supporting the development of a sense of belonging.

Fostering Belonging Through the Educational uses of Digital Storytelling

Stories and storytelling are creative and constructive ways for people to form their identities, make connections with others, and come to understand their place in the world (Bruner, 2002). A sense of belonging is developed when people feel accepted, appreciated, and understood in their

relationships with individuals and groups (Riley & White, 2016). Having a sense of belonging touches on people's affect and fosters connections and relationships with others (Sumsion & Wong, 2011).

Digital stories recognise the storyteller's own cultural richness and experiences and are personal narratives of first-person voice through digital and multimodal means (Robin, 2006). They are shared through a short video clip (two to six minutes long) incorporating text, video, audio recordings of voice, music, and images to create, inform, provoke, appeal, and share compelling stories to convey complex concepts and emotions (Gubrium & Harper, 2013). Digital stories offer immersive and participatory experiences for audiences as they connect people in disparate places and situations (Anderson & Chua, 2010).

Digital storytelling has been used in teaching, mainly to support teacher and learner reflection on their learning, highlight emotional connections, and encourage a supportive environment where participants can safely express themselves. Investigations into the use of digital storytelling have concentrated on preservice or student teacher development of reflective capacity and deep learning (Barrett, 2006) to challenge existing assumptions and make sense of their personal struggles and experiences as part of their shifting identities as teacher professionals (Coggin et al., 2019; Wu & Chen, 2020). For example, Kolano and Sanczyk's (2022) study investigating preservice teacher interaction with immigrant children found support for ways in which creating digital stories challenged preservice teachers' dispositions about immigration and deepened understandings of their diverse students' English language learning experiences. Creating digital stories concerning culture and family identities has been found to enable novice teachers to reflect on their values and cultural identities important to them (Mitchell, 2021). Other studies have considered the way digital storytelling could support preservice teacher literacy and digital skills (Shinas, & Wen, 2022), mathematics (Starčič et al., 2016), science (Seckin Kapucu & Yurtseven Avci, 2020) and learning of history, including historical understandings (Peñalba et al., 2020).

Research into in-service teacher adoption of digital storytelling, on the other hand, has emphasised reflective practice into areas such as fostering special education teachers' understanding of inclusive education (Yasar-Akyar et al., 2022), secondary school learning and development of an interdisciplinary community of practice across subject domains (Clarke, 2017), and science teachers' progressive development of sense of agency and action competence, including their motivation for continuous collegial professional collaboration (Henningsen & Ørngreen, 2018). Yet others have evidenced the role of digital storytelling as a form of documentation to promote long-lasting literacy learning processes to influence teacher practice and

development (Lemieux & Mason, 2022). Taken together, the research into digital storytelling use indicates its value as a potentially transformative tool for teaching and learning in support of a range of capacity development, including in subject specific domains.

Few studies have investigated the social, cultural, and pedagogical aspects and resources that build ECE teacher capacity to work effectively with refugee and immigrant children. To create learning environments that empower children's learning and development, teachers need to continually interrogate and critically examine their ideas and values influencing their practice to ensure their practice go beyond being mere technical acts (Papatheodorou, 2008). This case study explored ECE teachers' experiences and views as they adopted digital storytelling as a method for reflecting on their own migration journeys and the processes of making connections and developing trustworthy relationships. By doing so, teachers intended to enhance their pedagogical practices that targeted belonging-based strategies to promote refugee and immigrant children and their families' developing sense of belonging at their ECE centre, and in New Zealand society.

Theoretical Framing

The project adopts a sociocultural–ecological paradigm to consider the holistic development of children and families at multiple interrelated levels—the individual, family, community, and civil society (see Mitchell et al., 2018).

A sociocultural perspective typically privileges the breadth of cultural knowledge and experiences that refugee and immigrant children bring to their learning from their homes and communities, i.e., their 'funds of knowledge' which provide for valuable resources that teachers can draw from (González et al., 2013). This is underpinned by an understanding of how teachers, children and their families participate in particular activities and practices, how they draw on the available tools and social networks including communities they belong to, and how they use and value the different discourses involved in a local setting (Lave & Wenger, 1991). The mutual shaping of individual and collective knowledge growth in a particular community is therefore dynamic and complex. Sociocultural theories also highlight the importance of identity—who we are—which can be conceived in terms of being and belonging where identity is developed through interactions (De Leeuw & Rydin, 2007). In this case study, digital storytelling played a key role in affording teachers with the means to reflect and interact with others about the key people, places, events, and values influential in their belonging journey in New Zealand, and which formed the basis of their identity as teaching professionals. In turn, this process was intended to foster insightful practices supportive of effective and inclusive

learning environments for refugee and migrant children and their families.

Research Design

The wider research project investigated varied ways ECE teachers can enhance support for migrant and refugee children's sense of bicultural belonging in New Zealand in ways that sustained their connections to their home countries (Mitchell et al., 2018). It gathered a depth of information about dimensions and processes of belonging and documented relevant teaching and learning strategies longitudinally across a two-year cycle of data collection and analysis. The research design followed an iterative process used in design-based research, which "aims to develop theories of the process of learning and the means of supporting these processes" (Penuel, 2014, p. 99).

Four ECE centres that included a high percentage of refugee and/or immigrant children served as case studies in the project. The digital storytelling case study reported in this paper occurred in one of these centres. The specific research question guiding the case study was:

How do ECE teachers' experiences of digital storytelling about their migration journeys foster their understandings of belonging and pedagogical awareness in support of migrant and refugee children's sense of belonging in New Zealand?

In conducting the research, our position was that of university researchers working in partnership with teacher researchers to collaboratively improve educational practice (Coburn & Penuel, 2016). This aligns with our sociocultural framing guiding the way we conceptualise and theorise the nature and purpose of researcher-practitioner collaboration to enhance collective understandings and developments. In our project, teaching and learning strategies were developed, trialled, and evaluated by teachers and researchers in joint meetings and workshops. Ultimately this partnership is intended to improve learner outcomes and develop practitioner research capability to make a difference to teaching and learning in New Zealand (Teaching and Learning Research Initiative, n.d.).

The Context

This case study was conducted with four ECE teachers working in a multi-cultural, multi-religion community and early childhood centre in an urban area of a medium-sized city in New Zealand. The centre is located next to the local mosque and caters for the needs of children from migrant and refugee families. Although a big proportion of children attending were of the Muslim faith, families from other faiths and

cultures also chose to attend the centre. The children were mostly from families with English as an additional language.

Participants

The four teachers (Maria, the Head Teacher, and three teachers—Sophia, Melanie, and Leena) in the case study were from different nationalities, cultures, and faiths. Apart from Melanie, who identifies as New Zealand Māori, the remaining teachers were immigrants having lived in New Zealand for several years and having varied experiences as ECE professionals in New Zealand (see Table 1). While working on the initial development phase of the project and exploring a range of ideas, including creative and arts-based pedagogical strategies to support the children to develop a sense of belonging at the centre, the idea of sharing lived stories and experiences of migration and belonging in New Zealand through means of storytelling was suggested by the university researchers. This included new ideas such as digital opportunities for storytelling.

Although they were aware of the richness of stories and storytelling in promoting literacy and enjoyment, and fostering cultural connections (Goulding et al., 2017), the

teachers had never considered creating their own stories to think about who they were as teachers and as a teaching team, to consider processes of coming to belong, and subsequently to share their stories with the children, families, and the wider community at the centre. After initial discussions, teachers were open to making their own digital stories of their migration experiences and their journey of belonging in New Zealand, in part to familiarise themselves with how to create digital stories. But more importantly, they conjectured that sharing their own stories with children and the wider centre community, might encourage families to tell their own stories of migration from their homelands, thereby fostering families' sense of belonging, strengthening reciprocal relationships with teachers and giving teachers an understanding of families' aspirations for their children. Teachers were particularly interested in the visual and multimedia mode of conveying stories, which added a new and different dimension to their practice at the centre and a potential new method of communicating with children and their families. The teachers did not consider themselves to be digitally savvy but were willing to learn along the way. Table 1 highlights the four teachers' backgrounds, teaching experiences and the key themes inherent in their completed digital stories.

Table 1 Teachers' backgrounds and the themes they incorporated in their digital stories

Teacher	Ethnicity	Qualification in ECE	Teaching experience in ECE (years)	Years working at Centre where the study was conducted	Key themes in completed Digital Story (3 to 5 min in length)
Maria (Head Teacher)	Australian Slovak	Bachelor degree	21	3	<ul style="list-style-type: none"> ● Highlights of significant life events ● Significant people ● Faith ● Migration journey ● Centre staff
Sophia	Fijian Indian	Graduate Diploma	11	5	<ul style="list-style-type: none"> ● Migration journey ● Significant people ● Highlights of significant life events in shaping identity and practice ● Faith ● Centre staff
Leena	Afghan	Bachelor degree	14	5	<ul style="list-style-type: none"> ● Migration journey ● Significant people ● Highlights of significant life events in shaping identity and practice ● Faith ● Centre staff
Melanie	New Zealand Māori	Bachelor degree	7	1	<ul style="list-style-type: none"> ● Cultural heritage/ancestral lineage ● Significant people ● Places of importance and journeying overseas and homecoming to New Zealand

Data Collection and Analysis

A range of qualitative data were collected to serve as *triangulation* purposes (Merriam & Grenier, 2019):

- observational notes and photographs of teacher participation in the digital storytelling development process;
- teacher created artifacts, i.e., the final version of their digital story scripts, digital stories, and written reflections of their digital storytelling experience (see Sammons, 2021; Sammons & Ali, 2021);
- a focus group interview with teachers conducted at the end of the project. The focus group discussed teachers' experiences of the digital storytelling process, teachers' thoughts generated about belonging, and implications for pedagogical practice, including usage with families in their centre; and,
- video recordings of teacher presentations of their digital stories during a Community Evening held with children's families. Further videos were recorded of teacher reflections on the potential of digital storytelling for their practice.

An inductive thematic analysis (Braun & Clarke, 2006) was undertaken to identify, code, analyse, and report on themes within and across the different data to address the research question (see Appendix 1 for a summary of the emerging themes). The Findings section reports predominantly from the focus group interview and teacher written reflections which have been triangulated with the other data sources.

The Digital Storytelling Process

The first author, met regularly with the four teachers to facilitate and support the development of their digital stories. They formed a Story Circle group (Lambert, 2010), an integral part of the digital storytelling process to provide social, emotional and technical support and feedback. The development of teachers' digital stories occurred broadly in three stages—pre-production, production, and post-production (Gubrium & Harper, 2013).

In the initial pre-production stage, the group collaboratively viewed examples of digital stories, considered the purpose and audience for their story, decided on the digital story platform—which was WeVideo (a free online software)—and brainstormed what their digital stories could look like to plan their story scripts. The group went through guidelines and questions to prompt their thinking for their draft scripts. Teachers were asked to consider the purpose of their story, plan and draft their key messages, and to think about their own migration/ homecoming experiences that

resonated with their ideas about belonging, the challenges encountered and what supported them.

Meetings within the story circle involved the group sharing their draft story scripts, allowing teachers time to reflect on their lived experiences and supporting one another in coming to understand their own development of a sense of belonging in New Zealand. The process was at times cathartic as the teachers had not had the opportunity to reflect on their coming to belong journey, nor was this aspect acknowledged nor recognised as an important dimension of their identity as teaching professionals in their day-to-day work. Issues such as navigating cross cultural challenges, language barriers, stereotypes of their faith and ethnicity groups emerged, including ways they have and are continuing to address these. Even the teacher who was New Zealand Māori was prompted to reflect deeply on her genealogical connections, her identity as a teaching professional and cultural sense of belonging. Story scripting for their digital stories drew heavily from these insights and enabled teachers to craft rich episodes of their own journey of developing a sense of belonging in New Zealand.

In the Production stage, the group explored the various features of the WeVideo software (see Fig. 1).

Each teacher collated audio and visual files including photos and images they could include to embellish their scripts and uploaded these to WeVideo. They further narrated and recorded their story scripts, refining them further where needed. Although the first author provided initial technical support, as their digital stories were developed, the group as a whole supported one another with troubleshooting issues



Fig. 1 Teachers planning their digital stories in WeVideo (Mitchell et al., 2018)

and advice on adding additional background effects and music (see Fig. 2).

In the Post-production stage, the group collectively viewed each other's draft digital stories to give further suggestions for refinement.

Each teacher's final digital story (between four to six minutes long each) was shared and celebrated with the wider research team to recognise the group's collective accomplishments (Lambert, 2010) (see Fig. 3). Teachers also played their digital stories at the Community Evening meeting to parents and significant others, which was well-received.

Findings

Four main themes were identified from the analysis of data: benefits of digital storytelling; the impact of digital storytelling on teacher understandings about belonging;

the impact on teacher pedagogical practice; and general considerations for adopting digital storytelling (see Appendix 1).

Benefits of Digital Storytelling

Teachers valued the digital storytelling experience as it enabled different and creative forms of communicating which can be more evocative compared to text.

As a naturally shy person, I thought the idea of digital storytelling was amazing. I knew that [the software] would allow me to incorporate my creativity and design skills in an engaging manner (Sophia).

Teachers appreciated the visual and multimodal aspects for making connections with children's families and *whānau* who may not be fluent in English and for communicating in a short space of time:



Fig. 2 A screenshot of a digital story in progress (Mitchell et al., 2018)

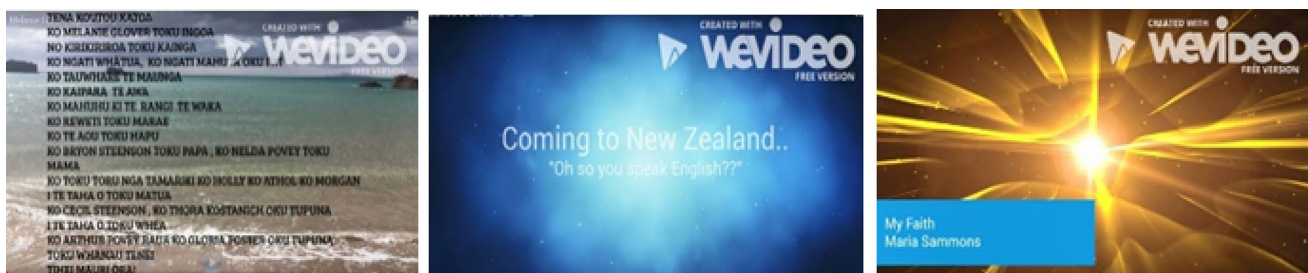


Fig. 3 Screenshots of some of the completed digital stories (Mitchell et al., 2018)

The written word is not that accessible for a lot of our families...seeing something like that on the screen with audio is impactful, better than something written down on a piece of paper...By way of digital storytelling is motivating and quite effective, in getting others to want to share their details. And I think that's key, is the communication. We want to develop relationships. And that seems to be a really time efficient way to do that. Whereas you wouldn't work the room and tell 20 people a five-minute story about your life (Maria).

Through their digital storytelling experience, teachers perceived they gained important skills—digital, writing, research, and communication skills—as new ways to connect with families at the centre.

The Impact of the Digital Storytelling Experience on Teacher Understandings

Understanding Belonging Through Personal Migration Narratives

Digital storytelling was transformative in supporting teachers to think deeply about notions of belonging. Teachers reflected on their experience of creating their digital stories as a way to convey their own lived experiences as immigrants or as New Zealand Māori. Common themes in teachers' digital stories depict their journey towards belonging in New Zealand. For instance, Sophia underscored how belonging was fundamental to her moving forward in a new migration context:

...belonging is a process which comes from not-belonging, to moving on and belonging. I picked up the journey from where I did not belong, to this country, to the place that I belong now...if I don't belong to some place, I wouldn't move forward... a place... [promotes a] feeling, a sense of belonging.

The teachers' journey towards belonging included reference to the ways their identities were shaped by their cultural background and home countries, values such as their faith/spirituality and the important people in their lives (see Table 1). Maria highlighted the importance of key persons and her faith as an example:

I, for the longest time didn't make this link, but during this [process] I did link into my dad's experiences that formed my appreciation for what I had. I didn't realise that what I have is a direct product of what he instilled in me. He helped me to form my appreciation of what I have [through my faith]. I didn't really put all that together until I did this [digital storytelling]...because that drives me daily.

Those decisions, my faith. That drives me right down to where I work, who I'm friends with, what I do. And those pieces of my story, influence my identity. That's me, that's who I am. I am me because of those experiences, where I come from, and my faith. And the fact that my dad had such a huge part in developing that faith.

While for Sophia it was key persons and events that played a key role:

the collection of thing[s] that have mattered a lot in my life, in the journey...for example how my family was, events that mattered a lot in my life, and then studies... important events from my home country to New Zealand.

On the other hand, Melanie, found the digital storytelling experience valuable in locating herself within her wider Māori genealogical heritage (*whakapapa*) and the multiple roles she undertakes as part of her identity:

I'm more aware of myself. And sometimes I think listening to your voice being played back, and watching yourself too. There's so many things, you're a teacher, you're a mother, you're a daughter, you're a sister, you're just this big list of people. And it's looking at yourself and thinking where you sit with it all, and being aware of it. And I think that Digital Storytelling did put that. You could see, and feel, and put that into, [those aspects of your origins, your *whakapapa*.

Enhanced Personal Reflection

The process of digital story telling enabled teachers to think deeply about their formative experiences and how these influenced their identity as teachers and informed their practice.

Looking back on my own story made me realise why I am like I am. And why do I do the things I do in teaching. Which I think, I can now challenge my own practice. Like, 'Oh that's why I do that.' And is that a good thing? Or is that productive? Or is that a challenge I need to change? So I sort of feel like I know myself a little better, and know why I teach the way I do (Melanie).

Creating an artifact like a digital story enabled me to not only reflect deeply on my teaching and life experiences but also understand how and why those experiences matter (Sophia, written reflection).

When asked how their views on their teaching practice had changed, all teachers acknowledged the time and space

for reflection that the storytelling experience afforded them to gain insights into their beliefs and practice:

It's really benefitted the doers and the receivers, you know. We all got something out of each other, and we've all got something from doing our own...I'm more aware of myself. Because I really hadn't taken the time to think why I am how I am. So I'm more aware of myself and how my views drive my everyday life. Because I wasn't quite aware of how many decisions I make based on my beliefs and my views. And it's pretty much everything. And I guess I hadn't made that obvious connection before. I'm more aware of myself (Maria).

The experience was somewhat cathartic for some teachers; the fact they were given permission to share their journey of coming to belong in New Zealand in a deep and meaningful way.

Since I have told my story it lightens my heart. It's been a big part of [feeling]... more strongly belonging to this country. Somebody has heard my story. I [can now] move on...[it's] like a closure. It's a very strong therapy. I love this process of storytelling (Sophia).

Engendering Deeper Collegial Connections

Creating and sharing their digital stories with one another enabled teachers to learn reciprocally from one another:

I think putting the pieces of our life together in front of each other, learning from each other. How the stories might look like... That was an interesting part of the project, coming together and talking about it (Sophia).

In doing so, teachers came to develop a new appreciation and deeper understanding of each other as individuals which served to promote deeper collegial connections, insights and growth as a teaching team:

Sharing [our digital] stories created connectedness amongst our colleagues. It strengthened our emotional ties by letting our team know our real self. It made us all comfortable sharing ourselves with one another. We had portrayed to others that we trust them by letting them know about our life. This promoted a sense of care, empathy and intimacy. It made us realise that life is full of adversities and they are a universal phenomenon, and our stories are one of the innumerable life-like stories. It instilled in us a deeper appreciation of our life journeys (Maria, written reflection).

The Impact of the Digital Storytelling Experience on Teacher Practice

Pedagogical Strategies for Fostering Children's Sense of Belonging

Their digital storytelling experience raised teachers' awareness of relevant pedagogical strategies such as storytelling, active listening, inviting children and families' contribution and roleplay to foster children's sense of belonging. Sophia made links between her digital storytelling experience with storytelling as a pedagogical strategy in enabling children to express their emotions. She elaborated on this strategy based on a recent observation during the celebration of *Matariki* (the Māori new year) at the centre:

I think it's a good emotional outlet for the children as well. When we were doing Matariki story with the lights off, and they [children] were taking turns in telling their stories, they came up with their own emotions. Like there was a story, and we kept adding to that. It's a good thing to let out those emotions when they talk about themselves.

Similar to how they had been given the time and space to reflect on their belonging journey in the digital storytelling experience, teachers affirmed children also needed the time and space, to be given turns to express themselves emotionally.

Very mindful that we listen to our children. I think that's the basis of everything. Like taking turns and having that reciprocal relationship, sharing. They all feel empowered, that they are being listened to. Whatever they say is being heard. We give them time and space to talk (Sophia).

Teachers added the need to engage in active listening without being judgemental to be an important part of their practice. This included valuing and acknowledging children and their families' input in the curriculum to encourage their contribution and foster their sense of belonging at the centre.

The children believed we wanted to hear what they would say. Because we do. And I think acknowledge that that's a valuable input...And acknowledging their input into the curriculum as valuable. And the same with the *whānau* too. Making them feel like whatever they come into share something, or bring something to show, that we acknowledge it's valuable (Maria).

Melanie made links between the importance of actively listening to children with her Māori identity and practice:

From my own like pedagogy practice, I see it from a Māori perspective as well. Because I think that each person in

Māoritanga (Māoridom) has what we call *wairua* (spirit), it's your spiritual being, it's your soul. When you were saying back on the mat, 'We want to hear' we actually do. We actually enjoy hearing what their feelings, and what they want to say. And they get a good feeling, and that comes into it as a whole person... That they're valuable.

Maria added her observations on the impact of empowering children to express their emotions and teachers' active listening on children's development into adulthood:

All those feelings that you can evoke in early childhood, that goes into developing the adult personality, that's really important. If they're [children] feeling valued at this age, they will grow into adults that feel valued (Maria).

In their discussion on supporting children's emotional expression, teachers also considered roleplay to be an extended form of storytelling and a potential pedagogical strategy:

Because they are sharing what they want to [say]. And roleplay is huge here, and very popular for getting those different emotions out (Melanie).

As an extension of children's storytelling experience, teachers thought of the potential of sharing their own digital stories with children. This approach could foster deeper connections with children through shared life experiences as part of supporting their sense of belonging in New Zealand.

Children will get to know their teachers better. Children know us as professional individuals. However, seeing our life story will give them a different perspective. They will have an opportunity to see our heritage, our land, our people. Some of them may even be able to relate our story to their own life story, to their similar families, to their struggles, to their achievements. It will foster in them a deeper sense of belonging to the whole preschool environment (Maria, written reflection).

Additionally, teachers raised the possibility of using digital storytelling to create stories with children to encourage a different interactive and multimodal format of telling stories:

One of our next projects is to create children's stories via digital storytelling. We believe this will be very beneficial to children's learning as it applies both sounds and visuals. Unlike traditional PowerPoints, [digital stories] enable a more interactive style of storytelling. We believe that digital storytelling can exponentially transform the classroom experience (Maria, written reflection).

Engendering Reciprocal Connections with Families

Teachers saw the value and potential for using digital storytelling with the wider staff and communities at the centre

and beyond to empower them to share stories of their family and children's cultural background, migration and coming to belong in New Zealand as part of relationship building and making connections:

Yeah, encouraging communication and building relationships. When we had the [Community Evening] with the families, that was really quite nice and special for them to see [our digital stories]. And hopefully they will open up a little bit more about their own journey (Melanie).

Having reflected on their own digital storytelling experiences, teachers saw the potential for children's parents and/or families to develop their own digital stories, and for staff to gain insights into children's histories and cultural backgrounds. They conjectured that digital storytelling could enable the reciprocal sharing of their/their children's stories of migration and belonging:

And the way they're put together, the imagery with the words because it meant so much to the person composing it. You can feel that when you watch it... The visual, creative and personal format. And you wonder, if you offer that to a *whānau*, that might give them the feeling like they've got permission to share their story. A lot of people don't want to burden other people with [their journey]... sometimes we feel that we wouldn't want to talk about it... and you're being too nosy into their personal life (Melanie).

Considerations for Other Practitioners

In reflecting on the digital storytelling process, teachers proposed several suggestions for how other practitioners might adopt digital storytelling as part of reflective practice. Establishing a supportive collegial environment conducive for collaboration and reciprocal sharing was fundamental in their experience. Teachers thought the Story Circle characterised this for them.

I found that really helpful, that group environment. I am a social creature that needs to have reassurance from those around me that you're heading in the right direction. So the Story Circle was great for my insecurities. It was also great to hear the direction other people were taking. Like that they were getting personal, really personal, and I felt comfortable to do the same (Maria).

Teachers noted how a supportive environment would be important to encourage children's families to reciprocally share their stories.

Make sure the environment is very open, and non-judgemental. Like how the parent[s] feel, having their

story and sharing it with us. So we have to make sure our relationship was already somewhat established (Sophia).

Other issues noted included the time needed to learn to use the technology and considerations for the storyteller's privacy including to whom/the audience their stories might be shared with.

In advising other practitioners, Maria encouraged them to explore digital storytelling for its reflective opportunity and the personal growth from the experience:

I would encourage other ECE teachers, and centres, and families to have a go. The personal growth that comes from putting yourself out there... I would suggest try not to be too critical of yourself, and to share openly. 'Cause it is hard to move past that self-conscious bit. But when you do eventually get over that, it's really valuable.

Discussion

Digital storytelling can be a powerful means for teachers to reflect on their own lives and foster pedagogical awareness on notions of belonging. Our study explored ways in which teacher use of digital storytelling could promote reflection and pedagogical awareness in support of immigrant and refugee children's developing sense of belonging. Several authors have emphasised the importance of reflection for teachers to enact more productive practices (Coggin et al., 2019; Gore, 2015). Digital stories can capture pivotal episodes for reflection and consideration of alternative practices to improve teaching (Robin, 2008; Yasar-Akyar et al., 2022). Our study illustrates how through creating their own digital stories, teachers at one multicultural ECE centre came to think deeply about their own migration narratives and notions of belonging that defined who they are.

The creation of digital stories facilitated our study teachers' ability to move from internal reflection to presentation and sharing. As others have argued, the process of presentation and sharing is equally important in digital storytelling (Kim et al., 2021). Teachers considered the visual and multimodal format of digital storytelling privileging their voice and choice of message to convey complex and at times emotional aspects of their belonging journey in New Zealand in a short space of time to be an advantage (Gubrium & Harper, 2013; Robin, 2008). This was a more effective way to communicate complex messages, compared to traditional words and text. They recognised the potential use of digital storytelling to bridge language and cultural barriers for parents of refugee and immigrant children who have limited language proficiency.

The teachers were generally very positive towards the use of digital storytelling. They expanded on the different ways they benefited from the process of creating their own digital stories. For instance, teachers valued the process where they reflected on the significant people, places, events and values that shaped their teaching beliefs, influenced their practice, and therefore, gained a deeper understanding of their own identity as early childhood practitioners; as exemplified by what Melanie referred to the "why I am" and "how I am". They opened aspects of their lives to each other, which in turn, fostered a better understanding of and deeper connection to one another as colleagues. They related this connection as part of their sense of belonging to the centre and noted the importance of time and space essential for this to occur (De Leeuw & Rydin, 2007; Riley & White, 2016). These rich insights into one another's experiences and of the key people, places, values, and who they are as individuals including their identity as teachers, enhanced understandings of similar and nuanced issues refugee and immigrant children and their families might be experiencing in adjusting to their new life in New Zealand. The mutual sharing and shaping of teachers as individuals and as a collective therefore resulted in new and deeper collegial connections, insights and growth as a teaching team as well as in terms of the possibilities for working with children and caregivers.

The digital storytelling experience promoted teacher reflection and generated deeper insights into belonging-based pedagogical strategies they might adopt with refugee and migrant children and their families at the centre. As such they became aware of the value of particular strategies - storytelling, active listening, inviting children and their families' input into the curriculum and the use of roleplay. Although these are not novel strategies, teachers came to a new appreciation and consideration of their use in the context of fostering children's belonging. Teachers highlighted that storytelling including digital storytelling and roleplay can validate refugee and migrant children's emotions, offering them the time and space to express themselves. As part of this and in line with Te Whāriki's aspirations, teachers acknowledged the importance of both children and their families' sharing and contribution to the centre (MOE, 2017). Digital storytelling needs to be considered as contexts for engagement in purposeful learning possibilities, in terms of the ways it can foster connection between digital storytellers and the changing roles of teachers in their work with children and caregivers to truly maximise its affordances (Anderson & Chua, 2010). Teachers considered that the sharing of their own lived experiences and narratives of belonging in their digital stories can foster empathy, trust and even stronger reciprocal relationships with parents and their children (Sumsion & Wong, 2011). Parent and family participation in digital storytelling could have similar benefits and generate greater understanding for teachers of

children's cultural backgrounds and home experiences. Digital storytelling could be one way to find out about families' funds of knowledge (González et al., 2013) and how these might be incorporated within the curriculum.

Our study points towards the value of digital storytelling as a creative and reflective method to prompt and sustain alternative and novel ways for teachers to think about their profession (Gore, 2015) and expand the possibilities for teachers to represent, share, and discuss reflections on teaching. However, digital storytelling on its own does not automatically result in these benefits. Teacher creation of digital stories need to acknowledge the unique sociocultural context shaping teachers' identity and sense of belonging. Crucially, a safe and supportive setting is necessary for teachers to share and productively reflect. The Story Circle established as part of the digital storytelling process provided the structure and supportive collegial sharing setting for this to occur. Clear guidelines are therefore needed to establish the appropriate setting and to support teacher awareness of the issues and possibilities when embarking on the digital storytelling process.

Another challenge was the time needed to create a meaningful narrative in their digital stories. Teachers brainstormed ideas, wrote and revised their script, explored ways they could further develop their narratives in the software in a coherent and appropriate manner that depicted their belonging journey. They believed that digital stories are powerful tools but the time needed cannot be underestimated for them to communicate their digital stories even in the short four to six minute video clip (Kim et al., 2021). Having clarity on the purpose, taking the risk to open up to audience and developing some familiarity with using the software can go some way towards facilitating this process.

Limitations of the Research

The research participants represent a convenience sample of teachers at one ECE setting in New Zealand and is not representative of possible participants across different settings. Nevertheless, we have sought to provide *rich, thick descriptions* of the participants' context, perspectives and reactions to their digital storytelling experience (Merriam & Grenier, 2019). While our qualitative case study findings cannot be generalised to a wider population, they can be related to similar ECE contexts and can provide nuanced insights into the potential of adopting digital storytelling in teacher practices in support of appropriate and meaningful belonging-based pedagogies. However, a key limitation of this study is the possible omission of relevant ideas and perspectives from other stakeholders such as the children and their families who were not reported in the study. Future research can extend the current scope to encompass these potential views.

We also feel confident in our data collection methods to obtain the kinds of data we were aiming at. In addition to multiple data collection methods to serve as *triangulation* purposes, as part of the larger two-year longitudinal study involving rounds of data collection, we had already established relationships with the teacher participants. The digital storytelling experience occurred at the 14-month point of the wider study through an ongoing focus on and understanding of teachers, their context, the children and the families they interact with and teachers' willingness to adopt and reflect on their engagement with digital stories.

Conclusion

Exploring ways to foster belonging, in which multiple cultures can be recognised and valued, is critical to children from refugee and immigrant backgrounds to ensure their ongoing settlement and engagement with their communities for the wider benefits of society. Maria's final quote aptly encapsulates the essence for why ongoing ECE teacher development and practice in support of children's sense of belonging is crucial:

Acknowledging there is a need to have effective ways to share life experiences and values in this diverse country [New Zealand] is important to ensure each individuals' belonging and value. The incredible amount of war and conflict, past and present in the world makes sharing emotions, values and journeys important to potentially facilitate peace.

This study fills a gap in the research literature on how teacher use of digital storytelling can be a way forward to develop teacher capacity to work effectively with refugee and immigrant children. In our study, the process of making their own digital stories about belonging and telling these to others, enabled ECE teachers to reflect and interrogate their beliefs and assumptions to think more widely about relevant and meaningful belonging-based pedagogical practices supportive of refugee and migrant children and their families' sense of belonging. Our study can contribute towards ensuring more equitable and quality ECE teaching and learning practice as espoused in the UN Sustainable Development Goal for 2030, particularly, SDG 4 focused on "ensuring inclusive and equitable quality education" to support learning that improves societies (United Nations, 2020).

Appendix 1

See Table 2.

Table 2 Emerging themes from the data analysis

Theme	Sub-themes	Codes	Elaborations/examples
Benefits of Digital Storytelling	Affordances of digital storytelling	<ul style="list-style-type: none"> • Creative forms of expression • Visual vs. written modes of communicating especially for those experiencing language barriers • Effective communication tool to develop relationship with colleagues and families • Digital • Communication through creative modes • Narrative writing for an audience • Research 	<ul style="list-style-type: none"> • Can be emotional • Chunk important information into 5 min video highlights • Time saving
	Learning new skills	<ul style="list-style-type: none"> • Understanding 'sense of belonging' through own migration journey • Significant factors/common themes in teachers' belonging journey 	<ul style="list-style-type: none"> • Cultural background/home countries • Faith/spiritual values • Significant people • Important life events
Impact of the digital storytelling experience on teacher understandings of belonging	Teachers' personal migration narratives depicted their coming to belong journey	<ul style="list-style-type: none"> • Teacher awareness of links between significant events and people to own identity and sense of belonging • Opportunity to reflect on own growth, more aware of own self and how personal views shape particular beliefs and practices • Time and space for reflection through the digital storytelling experience • Carthartic for teachers to share their belonging journey 	<ul style="list-style-type: none"> • Influences on the 'why' and 'how' of teachers' practice • Understanding own identity- 'why' I am like that as a teacher
	Increased reflective capacity	<ul style="list-style-type: none"> • Reciprocal learning and sharing • Deeper appreciation of one another 	<ul style="list-style-type: none"> • Permission to share stories / bottled up feelings • Giving voice to introvert teachers • Consider colleagues' perspectives • Review and better understand one another • Emotional ties strengthened • Trust • Empathy • Intimacy • Care
	Deeper connections with colleagues	<ul style="list-style-type: none"> • Growing together as a team, promote "togetherness" • Cemented sense of belonging at the centre with colleagues. 	

Table 2 (continued)

Theme	Sub-themes	Codes	Elaborations/examples
Impact of the digital storytelling experience on teacher practice	Pedagogical strategies relevant to promoting children's belonging	<ul style="list-style-type: none"> • Storytelling with children for emotional expression • Time and space for children to talk 	<ul style="list-style-type: none"> • Turn taking, reciprocal sharing • Give children opportunities to share in a circle • Give them time and space to express themselves • Examples of <i>Matariki</i> storytelling • Examples of inviting families into the centre to share homeland stories • Non-judgmental of children • Impact of ECE experiences on healthy development into adulthood • Children who feel valued growing to become adults who are valued
		<ul style="list-style-type: none"> • Active listening: • Storytelling enables links to bicultural heritage – Māori culture • Empower children by listening and valuing their input/contribution at the centre, in the curriculum • Valuing families' input/contribution at the centre & in the curriculum • Role play • Using digital stories with children 	<ul style="list-style-type: none"> • Potential for emotional expression • Foster connections • Share lived stories to support belonging • Interactive form of storytelling • Fun • Positive experience from the community evening sharing • Make connections with the power of personal stories
Advice/considerations/implications	Deeper connections with children's families	<ul style="list-style-type: none"> • Encourage communication 	
	Conducive environment	<ul style="list-style-type: none"> • Encourage reciprocal sharing from families through digital storytelling • Story circle set up supportive of teachers to support one another in terms of technical issues, insecurity, personal sharing • Existing relationship and camaraderie important to open sharing 	<ul style="list-style-type: none"> ♣ Collegial ♣ Open sharing ♣ Collaborative ♣ Non-judgmental ♣ Safe – emotional safety to feel comfortable to share as process of developing can be quite emotional ♣ Common belief in a creator ♣ Igra's values- care for staff and creating a sense of belonging for staff ♣ Role of facilitator ♣ 1-1 support to group and feedback
		<ul style="list-style-type: none"> • Need to be supportive of children's families to share as well 	

Table 2 (continued)

Theme	Sub-themes	Codes	Elaborations/examples
	Challenges	<ul style="list-style-type: none"> • Time - process to create digital stories takes time • Technology – need to get up to speed with the technology • Overcome challenge/fear of technology • Confidentiality – check who views and where • Encourage other teachers to give it a go 	<ul style="list-style-type: none"> • Don't be too self-critical • Share openly- get past self-consciousness to learn more about own self
	Take the risk		

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Declarations

Competing Interests The authors have no relevant financial or non-financial interests to disclose. In the reported research, we opted to use the free online software - WeVideo - for the creation of digital stories. It is but one of many other software options available online for digital storytelling. As a project team, there is no intent to promote/advertise/endorse any particular software in our research project.

Ethical Approval Research ethical approval was gained from the Human Research Ethics Committee, University of Waikato, New Zealand (Approval no: FEDU006/18).

Consent to Participate The authors affirm that all human research participants provided written informed consent for their participation in the research project and publication of the data collected from them.

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