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Competing Voices:
**Dialogic perspectives on Chinese children's use of touch screen
devices in a New Zealand early childhood education setting**

A thesis
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Abstract

Internationally, preschool children's use of touch screen devices is increasingly discussed from the perspectives of teachers and or caregivers. However, there is little discussion of this topic from a cross-cultural perspective. Furthermore, children's own voices on their touch screen experiences are missing in the discourse. This study considers Chinese immigrant preschool children's experiences of touch screen devices in a New Zealand Early Childhood Education (ECE) setting, aiming to discern the competing Voices of New Zealand ECE teachers, Chinese immigrant caregivers and children themselves. To achieve this aim, initially I sought to understand everyday touch screen use from the perspectives of New Zealand ECE teachers and Chinese immigrant caregivers, then explore children's voices in this discussion by videoing their engagement with touch screens, and finally explore a possible new layer of competing Voices between adults and children.

I set out to interrogate touch screen use by young learners in a social and aesthetic way by applying Mikhail Bakhtin's dialogic theory to explore the potential for competing voices around preschool children's touch screen use. I used genre as my unit of analysis as it allowed me to examine voices, not only through utterances, but also gestural expressions across different spaces. I used Heteroglossia as a central framework for analysis because it enabled me to understand multiple voices in social interaction. A visual method was used to collect the data because this method enabled me to see multiple forms of children's voices in addition to their utterances, and to identify further competing voices through children's employment of various genres when using touch screens across ECE centre and home contexts.

The Voice of conditional support and the Voice of opposition or reluctance were identified as competing Voices within and across New Zealand ECE teachers, and within and across Chinese caregivers. The findings highlight that the Voices of teachers and caregivers in my study are not necessarily in competition with each

other, but are instead in competition within and across each group. Six genres were recognised during children's touch screen use: the adult-led learning genre, the compliance genre, the invisible speaker genre, the child-led learning genre, the resistance genre and the whisper genre. Through these genres, children's Outside-in Voice and Inside-out Voice were identified according to the source of voices. The Outside-in Voice reflects the influence of adults' voices on the child, while the Inside-out Voice illustrates the child's agency in expressing their inner voices. Building on the tension within children's Voices, a new layer of competing Voices between adults and children was discerned: the Voice of adult power and the Voice of child agency.

My findings have implications for children, ECE teachers, caregivers and policymakers. Children could be supported to express their voices on issues that affect their lives, and to spend more time on free play. Implications for ECE teachers are that teachers need to be invited and given support to understand the complexity of children's voices through genres. Teachers need to be helped to appreciate that there are benefits of standing back and giving children space to be creative and learn collaboratively and or independently. Caregivers could be encouraged to relax some of their authority, to listen to children's voices and to include children's voices in decision-making on issues that affect them. Caregivers could also consider the conditions they place around their child's touch screen use such as time limit and the extent of scaffolding. Policymakers would be advised to provide teachers with professional learning and development with regard to how to scaffold children's touch screen use and digital play into play-based learning.

Areas for research include further investigation of the genres children employ during touch screen use and the use of interpretations other than Bakhtinian dialogism to do this. Research could focus on the touch screen learning experiences of a wider group of children, including children who are immigrants and children of different ages in different cultural contexts.

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List of Abbreviations

CMoE: China Ministry of Education

ECE: Early Childhood Education

ECE centre/service: Early childhood education centre

ECE teachers: Teachers in an early childhood education centre

NZ: New Zealand

NZMoE: New Zealand Ministry of Education

UNCRC: The United Nation's Convention on the Rights of the Child (Office of the United Nations High Commissioner for Human Rights, 1989)

UNICEF: The United Nations Children's Fund, originally known as the United Nations International Children's Emergency Fund, was created by the United Nations General Assembly on 11 December 1946, to provide emergency food and healthcare to children and mothers in countries that had been devastated by World War II.

Glossary of key Bakhtinian terms

Addressivity: An unavoidable state as a human being engages in dialogue with the world as it appears to them in relation to others.

Aesthetic: The dialogic interaction between two or more noncoinciding consciousnesses, or ethical co-being.

Alterity: The potential to alter or change through dialogue.

Answerability: An ethical obligation or accountability to others.

Author: A person interacting with the consciousness of others (at its extreme it may be a form of assessment).

Authoritative discourse: Ideas that are passed down to us and are fixed.

Becoming: A lifelong dialogic process of coming to be something or of passing into a state.

Carnavalesque: Genres that act to de-crown or mock hierarchy

Centripetal force: A force that is moving or tending to move toward a center.

Centrifugal force: A force that is moving or tending to move away from a center.

Chronotope: The ‘setting’, considered as a spatio-temporal whole, or an optic for discourses and their values.

Dialogism: A study of subjectivities encountering one another in the social act.

Dialogue: Conversation between two or more people with an answerable feature.

Double-voiced discourse: A discourse becomes double-voiced when someone else’s words introduced into our own speech that inevitably assume a new interpretation and become subject to our evaluation of them.

Genre: A combination of language content and forms in dialogue.

Heteroglossia: The presence of multiple voices, the battleground between different social forces (centripetal force and centrifugal force).

Hidden dialogue: The other's voices actively influence the author's voices, forcing it to alter itself accordingly.

Ideology: Less political than the Marxist meaning typically given in the West because it is concerned with the way a given social group views the world. This is betrayed through utterance, according to Bakhtin.

Internally persuasive discourse: The evolving ideas people bring from their personal experience of life.

Invisible speaker: The presence of the voice without the physical presence of the speaker.

Monologism: A singular way of engaging in dialogue and interpreting meaning that does not pay heed to alternative approaches or perspectives. There is only one voice.

Outsidedness: The quality 'I' bring to the evaluation of other

Plural: More than one.

Plurality: The fact or state of being plural.

Polyphony: A chorus of voices who speak for themselves.

Underground: Voices that speak outside the official discourse.

Utterance: A spoken word, statement, or vocal voice in the chain of dialogue.

Visual surplus: The additional insights offered by others.

Voice: Includes all kinds of language and its use (seen and unseen; verbal and nonverbal) including intonation, which reflects the values behind a consciousness.

Whisper: The voice expressed in a private space which is different from its public expression.

Bakhtinian terms are retrieved from:

White (2016). *Introducing dialogic pedagogy: Provocations for the early years*, NY: Routledge.

For further examination of these terms see:

Hirschkop, K. (1989). Glossary: Alternative translation of key terms. In K. Hirschkop & D. Shepherd (Eds.), *Bakhtin and cultural theory* (pp. 190–194). Manchester: Manchester University Press.

Morris, P. (1994). *The Bakhtin reader: Selected writings of Bakhtin, Medvedev, Voloshinov*. New York: Oxford University Press

Chapter 1

Introduction

This opening chapter sets the scene for the thesis. I start by explaining my personal interest in the topic, and provide the rationale for the following considerations:

- i) the focus on Chinese preschool children's touch screen experiences in a New Zealand ECE setting;
- ii) the examination of culturally competing voices; and
- iii) the emphasis on children's voices.

The chapter subsequently establishes the research questions which were formulated based on these three considerations. These research questions focus on children's use of touch screen devices, competing voices and children's voices. The chapter concludes with an overview of the contents of each chapter of the thesis.

1.1 My interest in this topic

My interest in the topic of competing voices in relation to children's touch screen use derives from my experience as a Chinese mother of two young children attending Early Childhood Education (ECE) in New Zealand. In the course of this experience, I soon became aware that Chinese immigrant families and New Zealand local educators (teachers and parents) understand the value of children's use of digital technologies in very different ways.

Chinese parents, like myself, have a high regard for the value of new technologies and the role these technologies play in children's early learning. My experience and observations indicate that some Chinese parents use these touch screen devices to assist their children's learning. I see this use of these devices as indicative of Chinese parents' wish to advance their children's opportunities and manage anxieties caused by prevalent slogans in Chinese society such as 'Do not let your child lose at the starting line' (Ding, 2013). Such statements reflect the deeply-rooted values of Chinese parents which are

shaped by traditional Confucianism: the drive for the next generation to accomplish something more than the previous generation (Lee, 1996). Motivated by these aspirations, Chinese parents endeavour to ensure that their children do not forfeit the learning opportunities that emerging technologies might bring.

Since using touch screen devices for children's learning is common in Chinese families, I came to New Zealand with an assumption that touch screen devices would be visible in children's lives at home and in ECE centres. However, after visiting some ECE centres in New Zealand, I found that touch screen devices are not as conspicuous in New Zealand ECE services. Instead, the focus of ECE centres is on offering frequent outdoor experiences and play-based learning activities, with less orientation towards digital activities. I was perplexed by this situation, which prompted me to delve further by talking with Kaiako¹ and parents. I soon discovered that many Kaiako perceive children's use of digital technologies as problematic, with the perception that, if their use is not limited and appropriately supervised, children's use of touch screen devices will be unsafe, leading to inadequate social interaction and undermining engagement in play-based learning activities.

This difference in perspectives prompted me, from an educator's and a researcher's stance, to try to ascertain what is happening for Chinese children, who move between different cultures, with touch screen devices in New Zealand ECE settings and the significance of these experiences. It is to this phenomenon that my study turns.

1.2 The wider rationale for this study

1.2.1 Why Touch screens?

As we move to a digital age, there are shifts to new forms of communication and patterns of work in learning and leisure practices (Edwards et al., 2017; Stephen & Edwards, 2017). The increasing use of digital devices represents one such shift in children's everyday play and learning. Of all digital devices, touch screen devices, such

¹ Kaiako: A Māori term referring to teacher(s) in New Zealand ECE curriculum Te Whāriki.

as smartphones and touch screen tablets, are the most popular digital devices for young users at home and in ECE settings, due to the ease of operation and user-friendly features of touch screens (Merchant, 2015). While there has been a significant increase in research on children's use of touch screen devices, most studies have focused on primary and secondary schools, and examined the effects of using such devices on students' learning outcomes (Duijzer et al., 2017; Hubber et al., 2016; McCollum et al., 2014; Xie et al., 2018). Much less is known about young children under five years of age (e.g. preschoolers, toddlers) as users of digital devices.

1.2.1.1 Touch screens and young children

From a global perspective, studies on young children's use of touch screen devices have shown that many children spend time using touch screen devices daily (Chaudron, 2015; Ebbeck, 2016; Erdogan et al., 2019; W. Li, 2014; C. Liu, 2015; Marsh, 2016). For example, a cross-country study done in the US, China, South Korea and Turkey (Erdogan et al., 2019), indicates that iPads and tablets are the most common digital devices that children (4-6 years old) used freely at home. A United Kingdom-based study reports that nearly half of 0-2-year-olds and two-thirds of 3-5-year-olds are able to turn tablets on and off, swipe, drag, tap, open, and exit apps (Marsh, 2016). A Singaporean study points out that smartphones and touchscreen tablets are the most popular technological devices used by children under the age of seven (Ebbeck, 2016). According to these findings in Singapore, children under the age of seven years use smartphones and touchscreen tablets daily except for infants (aged under one year). Children aged three to five years old spend 0.6 hours per day on average on smartphones or other touchscreen devices. Likewise, Li's (2014) survey, done in Nanjing city, China, also reveals a high level of ownership and usage of iPads among preschool children: 87% of 3 to 6-year-olds own and use iPads. In a survey done in Nanjing city, Liu (2015) found that 81% of preschool children used touchscreen devices every day for less than an hour, while 19% of children used touchscreen devices for more than one hour a day. The international studies on young children's use of touch screen devices at home and in ECE settings, for example Edwards et al. (2017) and Yelland et al. (2017)'s studies, highlight the importance of understanding how children use these devices and the

implications for ECE educators. However, studies on preschool children's use of touch screen devices in New Zealand are limited. My understanding is that one of the primary reasons for the absence of research in this area is that opinions are polarized, locally, nationally and globally, in private and public education spaces. Examination of the New Zealand ECE curriculum and practices demonstrates that daily routines of natural play, outdoor experiences and play-based learning activities for young children are highly valued by New Zealand policy-makers (New Zealand Ministry of Education [NZMoE], 1996, 2017). These priorities suggest that New Zealand ECE educators are less oriented towards touchscreen learning experiences. However, there is a shift in the latest Te Whāriki (NZMoE, 2017) compared with the previous version (NZMoE, 1996). The section that follows examines the touch screens in New Zealand ECE curriculum.

1.2.1.2 Touch screens in New Zealand ECE curriculum

In New Zealand, the early childhood curriculum Te Whāriki was issued in 1996 and then revised in 2017. Two decades ago, Te Whāriki (NZMoE, 1996) indicated a narrow emphasis on computers, as befitted the time, stating 'computers allow children to gain experiences with communication technologies'(p.97). Recently, digital technologies have obtained a place by explicit statements in the ECE curriculum. The latest Te Whāriki (NZMoE, 2017) shows a supportive attitude towards the use of digital devices by explicitly including these in the list of materials children might experience. It states that 'children experience a wide variety of materials and technologies, such as clay, fabric, fibre, paper, pencils, props for imaginative play, brushes, rollers, stamp pads, scissors, calculators, digital devices, musical instruments, sticky tape, glue and carpentry tools' (p. 44). This statement illustrates that Te Whāriki (NZMoE, 2017) is more expansive, reflective of the ubiquity of an array of devices, rather than just computers.

Te Whāriki (NZMoE, 2017) further states that 'children's contributions to their wider communities may occur through direct participation or virtually, through the use of digital and other technologies' (p. 36), and advocate children's development of 'ability to represent discoveries using creative and expressive media, including digital media'

(p. 47). These statements also suggest that in the original Te Whāriki (NZMoE, 1996) the use of computers for their own sake (to learn about ICT) was of some value. However, in the latest Te Whāriki (NZMoE, 2017), there is a recognition that children don't use devices to learn about the devices themselves, but rather to connect more widely with the community and to communicate. Furthermore, the latest Te Whāriki (NZMoE, 2017) encourages ECE kaiako to raise the 'awareness of how they can make contributions to groups and group wellbeing, including within digitally mediated contexts' (NZMoE, 2017, p. 37), and the 'understanding that symbols can be 'read' by others and that thoughts, experiences and ideas can be represented as words, pictures, numbers, sounds, shapes, models and photographs in print and digital formats' (NZMoE, 2017, p. 42). Given that ICT is already incorporated in current ECE curriculum in New Zealand, an investigation of the use of touch screen devices is warranted to further examine how these technologies support young children's learning and interests in this context.

However, Te Whāriki (NZMoE, 2017) also maintains a cautious attitude and warns the ECE kaiako to 'support children to develop an understanding of security and safety when communicating in a digital world' (p. 45). While children's limited engagement of digital technologies is encouraged, the New Zealand's ECE curriculum Te Whāriki (NZMoE, 2017) appears to be cautious in this regard. This caution illustrates the presence of a tension in the curriculum centred on the question of adopting a developmentally appropriate focus, while also arguing for socially and culturally mediated learning. This cautious approach, alongside a wider social and educational, national and intercultural push for technologically literate learners, raises the importance of understanding this phenomenon given the ubiquitous presence of touchscreen devices in children's lives (Burns, 2019). Equally important is the need to understand what meanings are given to this experience, especially when children are from different cultural backgrounds, for instance, when a child from a Chinese culture enters the New Zealand early childhood education context.

1.2.1.3 Touch screens and culture

A careful consideration of the role of culture in children's use of digital devices is absent from the literature thus far, such as in the case of immigrant families (Lovato & Waxman, 2016). Although there are plenty of studies examining children's touch screen use in a range of countries, little is currently known about young children's everyday experiences of touchscreen devices in New Zealand ECE settings, least of all about Chinese children in New Zealand ECE settings. Due to this gap, I was motivated to understand Chinese children's learning experiences in a multiple culture context given their own cultural identities.

In addition, when Chinese immigrant families' views encounter local New Zealand educators' view concerning children's technology use in homes and ECE settings, involving elements of place, time, activity and role (Edwards et al., 2017), competing voices may arise, along with social and cultural, local and international debates in this regard. It has been my thesis from the outset that these conflicting voices, views and beliefs in ECE settings will inevitably exert an impact, both on young children's earliest experiences of touchscreens and their learning experiences in general. This is important because children's early learning experiences will exert an fundamental influence on their future learning and development. While the importance is understood, very little is currently known about Chinese preschool children's touch screen experiences in New Zealand ECE settings. It is this gap the present study seeks to address.

1.2.2 Why examine competing voices?

There are competing voices in coexisting statements of support and opposition, concerning the use of information and communication technologies (ICT) in both China (Dong & Newman, 2016) and New Zealand (Hatherly & Chapman, 2013a; Khoo et al., 2015; Merchant, 2015; Radesky, Kistin, et al., 2016). Studies have examined Chinese parents' attitudes toward preschool children's touchscreen use. As noted above, surveys by Li (2014) and Liu (2015) found a high level of usage of iPads among preschool children. Liu (2015) further pointed out that Chinese parents regard touchscreen devices as a tool for educating and spending time with children while seeing both the positive and negative sides of use, and the need to employ moderate control of their use. Erdogan

et al. (2019) reported that Chinese parents emphasized that digital play promoted sustained attention and contributed to young children's concentration, self-regulation and motivation for learning.

In the few available studies, the voices of New Zealand ECE educators are polarized in both private and public education spaces. For example, a case study by Barback (2012) reported that a preschool staff member posted an article about the benefits that some ECE centres were seeing from incorporating iPads as tools for learning. The post unexpectedly gave rise to an online forum discussion and evoked a flurry of parental responses; some showed tentative support for the concept, while others preferred to sit on the fence or were totally against it. A recent study by Santamaria (2020) investigated four types of ECE services in New Zealand to examine the use of digital devices. Within each type of ECE services, there are both users and non-users of digital devices. For those users of digital devices, teachers shared their rationale that digital devices had become commonplace in society and that primary schools in their neighbourhood expected new entrants to know how to use digital technology. Thus this can be viewed as the ECE services' way of accommodating the changes brought by digital technologies to the education of young children. For those non-users of digital devices, teachers in Santamaria's study consider that using tablets for play limited children's creativity and imagination, and that 'by not using tablets at their service, children were more creative and imaginative, physically active, and social' (p.112). These teachers believed that 'children's learning should focus on natural play because it supports their neurological and physical development' (p.111), but tablets use 'limited children to a prescriptive or fixed play environment and took away the freedom of selection from children' (p.111). Teachers 'collectively stressed that tablet use led to sedentary activity as they perceived that brain development required constant physical movement' (p.112).

Given the polarized perceptions and attitudes held by New Zealand ECE educators and wider communities towards preschool children's use of touch screen devices, it is important to examine what happens when these polarized voices encounter the cross-cultural voices of families, such as when a child from a Chinese family and culture enters a New Zealand ECE setting. Under such circumstances, there are not only competing voices from within the ECE service, but also there are layers of complexity

when family views are taken into account, especially where families come from multiple cultural backgrounds. These competing voices, domestic and intercultural, are important for us to understand because the perceptions, beliefs and attitudes of teachers and parents may exert significant influences on children's touch screen practices and everyday learning experiences (Blackwell et al., 2013). There is little information available concerning such competing voices, social, cultural, ideological and educational, about Chinese four-year-old preschool children's experiences of touch screen devices in New Zealand ECE settings. The paucity of studies on about intercultural competing voices in this respect and context indicates a gap in the research that this thesis seeks to address.

1.2.3 Children's voices concerning touch screens

Also pertinent to this research study is the recognition of the importance of listening to children's voices. The value of children's voices has been articulated by the United Nations. The United Nations Convention on the Rights of the Child (hereinafter referred to as UNCRC) proposed 'children's voices' as one of the children's rights in 1989, stating in Article 12:

“...ensure that a child who is capable of forming his or her views should have the right to express those views freely in all matters affecting that child and that the views of that child should be given due weight in accordance with the age and maturity of the child.” (UNICEF, 1989, p. 2)

Although the UNCRC states clearly that children have the right to express their views freely in all matters affecting them, it also adds the limitation that children's views should be given due weight in accordance with their age and maturity. In practice, young children's voices have been ignored consistently because of the level of maturity of the child as assessed by adults. Research routinely reveals that children are not always asked for their views by those making decisions about their lives (Aubrey & Dahl, 2006; Lundy, 2007; Parker, 2015; Tisdall, 2014).

However, there has been a significant paradigm shift with regard to foregrounding children's views in ECE research in recent years. This shift has challenged many long-

held assumptions about ECE pedagogy and research related to young children. The challenge has primarily come from those working in the sociology of childhood, which recognises children as having power and agency as social participants (Lundy 2007). There are important implications for educational research when researchers and educators view children as active and equal participants in their learning (Daniels, 2005; White, 2016). Central to this paradigm shift is the challenge to the image of children that has become embedded in many taken-for-granted ECE practices. This is the assumption of a power and knowledge differential between adults and children, that assumes it is the prerogative of adults to make 'right' decisions on behalf of children (Cannella, 1997).

There has been a ground-swell of research that recognises this repositioning of children's voices (Christensen & James, 2000; Einarsdottir, 2005; Graue & Walsh, 1998). Considering seriously children's perspectives on their everyday lives has become an important element of childhood studies (Mayall, 2002). Christensen and James (2008) and Mayall (2008) have been among those authors who have articulated the view that children should be active participants in the research process who can offer unique insights into their lives. In spite of this recognition, in many studies, the relationship between the researcher and the child has not been one in which children's voices were well expressed and/or heard. The work of Gallas (1998) shows the depth and length of relationships between teachers and children that are needed to allow the development of a more sensitive and nuanced understanding of what children might be conveying. It seems that hearing the perspectives of children is particularly challenging when working with young children (e.g. preschoolers, toddlers and babies), whose voices are more likely to be ignored due to adults' assessment of the worth of their views and difficulties of understanding their messages.

The inclusion of children's voices in research on their experiences with touch screen devices has mostly occurred in studies on older children and adolescents (Manuguerra & Petocz, 2011). Among the limited number of studies of children under five years old, Fane et al. (2018) examined the use of emoji on iPads in exploring the voices of children aged from three to five years old. Fane's study contributes insights into children's voices, but does not examine the influence of other voices on children's voices in social

interactions. The literature is scarce in its examination of four-year-old preschool children's voices on their experiences of touchscreen devices, especially where the inquiry also explores multiple perspectives and competing voices from families and teachers. This gap in understanding is what this study intends to address.

In the light of the gaps in the research that have been identified, the present study incorporates the voices of preschool children as active participants in investigating their experiences of touch screen devices, alongside the adults in their lives. The centrality of children's voices in this study acknowledges children's right to be listened to and have their views taken seriously. In order to explore children's voices, I use a visual method to illuminate those voices in real life contexts across the ECE centre and in their homes.

1.2.4 A dialogic route

Among other methodological lenses, I adopt a dialogic methodological approach to this study. Having grown up in China, I appreciate the wisdom that lies in ancient Chinese philosophy, as articulated in phrases such as '*Harmony and Diversity*', '*Teaching without words*', '*Actions speak louder than words*', and '*Free wandering*'. Consequently, when I first encountered Bakhtin's dialogic theory, especially his conceptualisation of '*Heteroglossia*' (diverse voices), '*Voices*' (multiple forms, verbal and non-verbal), '*Genre*' (utterance and form), '*Hidden dialogue*' (dialogue without words), and '*carnavalesque*' (free expression), these ideas held a personal spiritual resonance for me and my philosophy of life.

Correspondingly, I decided to adopt Bakhtin's dialogic theory, because it provides me with a totally new perspective for identifying and listening to diverse voices, and verbal and non-verbal utterances which may sometimes conflict with each other, as well as providing an opportunity to discover the hidden voices in dialogues. In *Problems of Dostoevsky's Poetics* (Bakhtin & Emerson, 1993), Bakhtin discussed competing voices in Russian literature, such as in the works of Dostoevsky, and he also examined different genres throughout literary history. Having read Bakhtin's Chinese translations and further reflected on the competing voices that coexist in dialogue, more

and more connections arose between Bakhtinian dialogism and the ideas I had pondered on for a long period of time about multiple competing voices on children's touchscreen engagement. This led to my final choice of Bakhtinian dialogism as my methodological lens to examine competing voices in relation to Chinese children's touch screen experiences in the New Zealand ECE context.

1.3 Research questions

In the light of the limited information that is available about Chinese preschool children's experiences of touch screen devices in New Zealand ECE settings, and the need to illuminate voices through multiple contexts and perspectives on their learning and engagement with these devices, this thesis explores the following questions:

- i) What are the competing voices of New Zealand teachers and Chinese caregivers surrounding Chinese preschool children's touch screen use in a New Zealand ECE setting?
- ii) What are Chinese preschool children's voices on their experiences of touch screens?
- iii) What competing voices of adults and children can be discerned in children's touch screen use?

1.4 Overview of thesis chapters

There are nine chapters in this thesis.

The first chapter presents a rationale for the research. I start by explaining my personal interest in the research topic as a Chinese parent of two children attending ECE in New Zealand. The chapter then sets out the rationale for the choice of topic as follows: i) the limited information available concerning Chinese children's use of touch screen devices in New Zealand ECE settings; ii) the need to consider that there might be competing voices, perceptions and attitudes, both domestic and intercultural, in relation to preschool children's use of touch screen devices, from Chinese families and New

Zealand ECE educators; and iii) the current scarcity of children's voices in this discussion. My research questions, developed from the above points thus focus on children's touch screen use, competing voices and children's voices.

Chapter 2 examines the literature on children's use of touch screen devices. I start by examining the international research on the topic of children's use of touch screen devices in ECE settings, highlighting competing voices from parents and teachers, and a gap of cross-cultural perspectives. I then examine preschool children's touch screen use in New Zealand and in China. I found that there are no studies that inquire into Chinese immigrant preschool children's touch screen use in New Zealand ECE settings. Another shortfall in the literature is the absence of children's voices on the subject. Therefore, this study aims to improve understanding of the intercultural competing voices of Chinese immigrant parents and New Zealand ECE teachers concerning children's use of touch screen devices, and to add children's voices to this discussion.

Chapter 3 focuses on hearing children's voices on the use of touch screens. Children's right to express their opinions and their right to be heard is reviewed in general and then children's voices in a digital age are specifically examined. I argue that children's voices, as a missing perspective, are of great importance in order to understand their everyday experiences of touch screens and they should be invited to be part of the discussion.

In Chapter 4, I introduce the theoretical framework that underpins this study. Bakhtin's dialogical methodology is introduced. I argue for Bakhtinian dialogism as an effective methodological lens for me to examine the diverse voices that formed preschool children's touch screen use in a cross-cultural context because it offers a way of understanding children's voices as plural in their multiple forms (verbal and non-verbal) in a social and cultural way. I argue for Bakhtin's notion of genre as my unit of analysis as it allowed me to examine voices not only through utterances but also gestural expressions across different spaces.

In Chapters 5, I introduce the research approach to explore children's voices and competing voices. Based on my choice of dialogic methodology, a visual method of 'seeing' children's voices is described, alongside interviews, observation and journals

as the means for my data collection. My research design is introduced, including 30 days fieldwork in a New Zealand ECE service based in Hamilton, which allows me to closely observe and engage in direct dialogue with children and educators who use or do not use touch screens in their everyday learning and teaching practices. Finally, ethical considerations are discussed, as well as my role as a researcher and the role of my voice in this study.

In Chapters 6 and 7, I report on my findings in response to my research questions.

Chapter 6 provides an answer to my first research question regarding the competing voices of New Zealand teachers and Chinese caregivers surrounding Chinese preschool children's touch screen use in a New Zealand ECE setting. Two overarching competing voices emerged from viewpoints expressed by New Zealand teachers and Chinese caregivers: the Voice of conditional support and the Voice of opposition or reluctance.

Chapter 7 addresses my second research question regarding children's voices on their experiences of touch screen devices, and my third question concerning competing voices of adults and children on children's touch screen use. From Bakhtinian standpoint, I use genre as a way of exploring children's voices. My findings reveal that children strategically navigated their way through a series of touch-screen genres - the adult-led learning genre, the compliance genre, the invisible speaker genre, the child-led free play genre, the resistant genre, and the whisper genre - often in a complex and plural way. Through these genres, children's voices of the Outside-in Voice and the Inside-out Voice were identified. Competing voices were discerned through the tension within children's voices, because the Outside-in Voice reflects the influence of adult's voice on the child's voice, while the Inside-out Voice represents the child's agency of expressing their own voice. Therefore, the Voice of adult power and the Voice of child agency is presented as another set of competing voices between adults and children. I conclude by arguing that children's everyday use of touch screen devices is a form of Voice which is discoverable through the genres.

Chapter 8 provides a discussion based on my findings. I firstly discuss my findings in relation to Bakhtinian dialogism. I use heteroglossia as an analytical framework to

understand competing Voices and children's Voices. I then discuss my findings in the more general literature about children's touch screens use and children's voices.

Chapter 9 concludes this study. I propose to share the tension many Bakhtinian researchers experience when drawing conclusions. I go back to these questions and summarize how my findings respond to these questions. I then describe the implications of my findings for policymakers, ECE teachers, caregivers and children. I conclude the chapter by summarizing the limitations of the study and setting out possibilities for further research.

In Chapter 2 that follows, I begin to build an argument for the emphasis this thesis places on touch screens for young children in education globally, and why they are such a source of controversy in early childhood education before leading into the cross-cultural contextualisation and dialogic methodological orientation that sets the scene for the empirical study that will follow.

Chapter 2

Children's use of touch screen devices in early childhood education: A review of the literature

My thesis argument is initially located in the context of the international research on the topic of children's use of touch screen devices in early childhood education (ECE). This broader picture provides a context for an evaluation of research conducted on Chinese immigrant children in New Zealand ECE settings. Correspondingly, there are three major parts to this chapter: i) International research on children's use of touch screen devices in ECE; ii) Research done in New Zealand on children's touch screen use in ECE; and iii) Research in a Chinese context.

In this chapter, I start by examining the international literature on children's use of touch screen devices in ECE, focusing on perspectives of parents and teachers on children's touch screen use, and the roles parents and teachers play in children's touch screen use. This examination of the literature indicates that studies have identified competing voices from parents and teachers on children's use of touch screen devices. The review of international literature also highlights a gap in research on cross-cultural perspectives regarding children's touch screen use. This gap leads me to the subsequent sections which examine research done in New Zealand on children's touch screen use in ECE, and research in a Chinese setting, including an exploration of Chinese parents' view on children's touch screen use and Chinese immigrant parents' views of childrearing.

My argument is that although there are a number of international studies that inquire into young children's use of touch screen devices, there is very limited research on immigrant preschool children's touch screen use from a cross-cultural perspective. Furthermore, there are no studies that inquire into Chinese preschool children's touch screen use in New Zealand ECE settings. Understanding what may occur in this situation is important when a Chinese child enters a New Zealand ECE setting. Another

shortfall in the literature is the absence of children's voices on the subject. In the existing literature, the perspectives of parents and teachers on young children's touch screen use are explored extensively, but children's voices are still a missing perspective, one which awaits exploration. Based on these gaps identified in the current literature, this study aims to improve understanding of the intercultural competing voices of Chinese parents and New Zealand teachers concerning children's use of touch screen devices, and to add children's voices to this discussion.

2.1 International research on children's use of touch screen devices in ECE

2.1.1 Children's touch screen use in ECE internationally

Nowadays, many children live in a digital world in which their play and learning are closely related to digital technologies and devices (Edwards, 2019; McLaren & Jandric, 2020; Stephen & Edwards, 2017). In this era of digital technologies, digital devices such as smartphones, touch-screen tablets and e-readers are becoming ubiquitous. Touch screen devices are increasingly popular in family life, and inevitably, in children's lives (Chaudron, 2015; Marsh, 2016; Neumann & Neumann, 2017a), because the touch-based feature of these devices makes them user-friendly for young children (Eileen Wood et al., 2016). Additionally, touch screen devices have greater utility across the whole family; smartphones are not always safe in the hands of pre-school children, while e-readers, as a technology, are focused on providing reading materials, and not activities such as games that children enjoy on digital devices.

Many studies from different countries, including the UK, the USA, and Australia, have shown that young children use digital technologies daily (Neumann, 2015; Ofcom, 2017). In the UK, young children's tablet use was compared over a period of time. Interviews with 200 parents of children under five years of age were conducted in 2012 and with 1,034 parents in 2015. Results revealed that the proportion of young children who used tablets increased from 23% in 2012 to 73% in 2015 (Leggett, 2015). The UK 2015 Childwise Monitor Pre-School Report (Leggett, 2015) found that 60% of children owned a tablet. Other countries have reported similar trends in young children's access to and use of tablets. In the United States, the 2017 Common Sense census on media

use by children aged zero to eight, which included a representative sample of more than 1,400 parents in the US, reported that 98% of children aged 8 and below lived in a home with some type of mobile device, 95% of families with children had a smartphone, and 78% had a tablet device; 42% of children had their own tablet, and they spent an average of approximately 2 hours 15 minutes a day with screen media (Rideout, 2017). In Australia, a survey of 109 parents of 3- to 5-year-old children showed that 61% of them had access to tablets at home and were using them for an average of 20 minutes daily (Neumann, 2015). The 2017 report from the Royal Children's Hospital Australian Child Health Poll showed that one-third of preschool children (0-5 years old) could access a touch screen tablet or a smartphone, spending up to 26 hours per week on these touch screen devices (The Royal Children's Hospital Melbourne, 2017). However, there is little information from New Zealand. The only report that I was able to locate in New Zealand was the Children's Media Use Study, which focused on digital technology use and access to digital media amongst 6 to 14-year-olds (NZ on Air, 2015). Of the 708 households interviewed, 72% of parents said their children used devices such as iPads or tablets, either at home (59%) or outside the home (29%).

The widespread use of touch screen devices in society has given rise to debate on whether touch screen devices should be a part of ECE learning settings. In the early stages of this debate, the research focus was largely on the extent to which the use of these devices would be beneficial or harmful for young children (Hubber et al., 2016; Neumann & Neumann, 2017b). However, with the increasing use of smartphones, iPads and touchscreen tablets by young children, mostly at home, the debate shifted from whether they should be used by children, to how these devices could be used most effectively to help children's learning in both home and ECE settings (Edwards, 2019; Edwards et al., 2017). The research pointed out that children become more independent and seek less support and teaching from adults once they acquire the necessary knowledge about how to use tablet computers (Couse & Chen, 2010; Dias et al., 2016). As a part of the evaluation activities of the US Department of Education's Ready to Learn (RTL) Program, M. Cohen et al. (2011) indicated that children learn and explore in natural ways when using touch-screen technology as they learn by trial and error and repetition, accompanied with interest and engagement. This view was supported by

Marsh (2016), who argued that touch screen tablets allow pre-schoolers to engage in a range of interactive digital experiences such as creating stories, videos, music, and coding. Another study also indicated that the wide range of entertainment and education apps available provide multisensory experiences for young children to learn about their world from an early age (Neumann, 2018).

Internationally, a considerable amount of literature has focused on how touch screen devices can be used in ECE and home settings. However, the research to date has tended to focus on examining children's touch screen use within one cultural group; there is an absence of literature that looks at the use of touch screen devices from a cross-cultural perspective. It is apparent that there is a gap in the research on children's use of touch screen devices in a cross-cultural context, where a new layer of competing voices from families and educators from different cultural contexts may be produced.

2.1.2 Touch screens in families for young children: Parents' views

Over the past decade, researchers have begun to examine parents' perspectives on young children's use of touch screen devices. Some studies, undertaken in the USA, China, Turkey, South Korea, UK, Australia and France, indicate that parents have a supportive attitude to children's touch screen use because they view touch screen devices as learning tools for children (Cristia & Seidl, 2015; Erdogan et al., 2019). By contrast, other studies, in the UK, the USA, Singapore, Turkey and France, highlight parents' concerns about children's touch screen use (Ebbeck, 2016; Genc, 2014; Wartella, 2012), with findings suggesting that parents viewed touch screen devices as a challenge to traditional conceptions of children's play and learning. This latter group expressed high levels of concern about the consequences of touch screen use for their children's development and well-being.

2.1.2.1 Touch screens as a learning tool at home

In terms of parents' attitudes towards children's touch screen use, the literature has indicated that many parents have a supportive attitude because they view touch screen devices as a tool for helping their children's learning (Cristia & Seidl, 2015; Erdogan et al., 2019; O'Connor, 2017). For example, a comparative study by Erdogan et al. (2019)

examined parents' attitudes to children's digital play in US, China, Turkey and South Korea. They found that most parents recognised the inevitability of technology's importance in their children's lives and believed that through digital play children could learn how to use technology for the future. The authors further reported that Chinese and American parents emphasized that digital play promoted sustained attention and contributed to young children's concentration, self-regulation and motivation for learning. Turkish and Korean parents discussed the benefits of digital play for learning English. In this study, it is clear that touch screen devices were viewed as a learning tool, encouraging digital literacy, language learning, concentration, self-regulation and motivation.

The perception of touch screen devices as tools to help children's learning has been noted in many other studies (Livingstone et al., 2014; Marsh, 2016; Neumann, 2018; Neumann & Neumann, 2014). These studies found that through the use and exploration of touch screen devices, young children can develop their literacy and various operational skills. Livingstone et al.'s (2014) study of ten UK families (with children aged 0 – 5 years) found that young children were able to navigate between icons and apps using visual and audio stimuli and to adjust multimodal features, which made them competent learners and users of touch screen devices. Neumann and Neumann (2014) indicated that young children's independent and shared interactions with socio-cultural tools such as touch screen devices have the potential to foster emergent literacy in Australia. Marsh (2016) found that young children can also develop a range of technical and operational skills such as unlocking the device, navigating through interfaces, menu selection and using different touch gestures such as tap, drag, or swipe through the use and exploration of touch screen devices. Cristia and Seidl's (2015) study based in France, involving 450 French parents of infants between the ages of 5 and 40 months, found that most families gave their children access to touch screens at home, and parents pointed out that touch screen devices can help children's fine motor development through certain types of interactive gestures. This positive attitude was also reported in O'Connor's (2017)'s study in the UK, involving 226 parents of children aged 0 - 3 years. Investigating parents' perceptions, attitudes and views on children's touch screen use, the researcher reported that 72% of parent participants perceived

touchscreen devices as tools for learning new knowledge and skills for children. Clearly, in these cases, parents' attitudes toward children's touch screen use were supportive and touch screen devices were viewed as helpful for children's learning.

2.1.2.2 Touch screens as a distraction to learning and a hazard

The studies discussed in the previous section indicate that many parents recognize the value of touch screen devices as a tool for enhancing children's learning. However, a considerable number of studies have shown that parents have concerns about children's touch screen use. The reason for these concerns may be related to early childhood discourses around 'natural play', which are very powerful in shaping the perceptions and beliefs of parents of young children (O'Connor, 2017). According to Radesky et al. (2015)'s study, while parents are motivated by their understanding of what is best for the young child, they also view mobile technology as a source of entertainment and comfort for their child.

Similarly, O'Connor (2017) pointed out that UK parents expressed concerns about touch screens potentially replacing traditional play and learning, and fears around children accessing inappropriate material online. The concerns about touch screens replacing traditional play and learning, according to O'Connor's (2017) study, are related to UK middle-class conceptions about being a good parent. In this conception, good parenting involves a focus on encouraging children to read print books and express themselves through physical creative and outdoor activities. Correspondingly, the way touch screen devices are used by children threatens these traditional concepts of play and learning, and parents are understandably anxious about the consequences of touch screen use for their children's development and well-being. This concern is congruent with the research that highlights the importance of talking to children and encouraging social interaction to ensure their healthy emotional and social development (Whitehead, 2010). Again, children's use of touch screen devices appears to challenge this view by requiring a low level of interaction and communication skills.

Parents' concerns have been expressed about a wide variety of matters in relation to children's use of touch screen devices. These concerns include: i) children's health,

wellbeing and education (Wartella, 2012); ii) children's intellectual and physical development (Ebbeck, 2016); iii) the purpose of the touch screen use (eg. not for educational purposes but entertainment) (Genc, 2014); and iv) children's use of time and the cognitive effects of passive media exposure (Cristia & Seidl, 2015).

Some of these parental concerns are captured in a study by scholars from Northwestern University's Center on Media and Human Development (Illinois, US) who reported on a national survey on parenting in the age of digital technology (Wartella, 2012). This survey reported that parents are 'very' concerned about issues concerning their children's health, wellbeing and education, including health and safety, literacy skills, school performance, behaviour, social and emotional skills, fitness and nutrition, verbal skills, maths and science skills, spirituality and religion, creativity and talent, media use, sleep patterns, extra-curricular activities, and cultural awareness (Wartella, 2012). Likewise, a Singaporean study (Ebbeck, 2016), involving 1,058 parents/caregivers of children aged below 7, examined parents' views of their young children's access and time spent on technological devices. These Singaporean parents expressed concerns about children's physical and intellectual development being affected by their use of digital devices.

In addition to children's health and development, parents also expressed their concerns about the purposes of children's touch screen use. Genc (2014) interviewed 85 parents from three preschools in Turkey, asking parents about their perceptions of preschool children's technology use. Parents reported that their preschool children's use of touch screens are generally not for educational purposes but games, which prompted considerable parental apprehension.

Children's overuse of touch screens and its consequences also disturb parents. For example, Cristia and Seidl (2015) conducted an online questionnaire, involving 450 French parents of infants between the ages of 5 and 40 months on their young child's use of touch screen technology. Findings reported parents' concerns about their children's overuse of touch screen devices and its consequences, such as the cognitive effects of passive media exposure when they engaged with touch screen devices.

While some studies expressed voices of support from parents, in that touch screen devices can be used as tools for helping children's learning, parents' voices of concern were also widely expressed. They raised issues such as children's health, wellbeing and education, intellectual and physical development, purposes of touch screen use, time use, and the cognitive effects of passive media exposure.

It is clear that in the international literature, there are coexisting voices of support and concern among parents relating to children's use of touch screen devices, which suggests a layer of competing voices within parents as a group. The origin of these viewpoints appears to hinge predominantly on the extent to which parents believe touch-screens hold educational value, as opposed to entertainment.

2.1.2.3 Reports on the role parents play in scaffolding children's touch screen use

Recent studies (Neumann, 2018; Eileen Wood et al., 2016) have discussed parents' roles in their children's engagement with touch screen devices using a socio-cultural framework. In this literature, scaffolding was discussed as essential for children's touch screen use and children's learning and development (Neumann, 2018; Neumann & Neumann, 2014; Eileen Wood et al., 2016). According to D. Wood et al. (1976)'s definition, scaffolding is the process whereby a more knowledgeable other (e.g. parent, teacher, peer) provides a child with assistance to complete a task.

The scaffolding role was initially addressed in computer-based learning contexts by Yelland and Masters (2007), who conceptualized three different types of scaffolding: cognitive, technical and affective. Eileen Wood et al. (2016) expanded on this understanding of these three kinds of scaffolding by examining parents' scaffolding roles and the nature of the parent-child interactions that take place when children and parents engage with a mobile device. A total of 104 parent-child dyads of parent-child interactions using the touch screen tablet were video recorded to observe first-hand the support and exchanges between parent and child (age range 46.21–75.9 months). The results indicated that parents played a role as active contributors to children's touchscreen-based learning activities, providing a great deal of support to their children while interacting with the touch screen tablet, including verbal, emotional-verbal,

physical and emotional-physical supports. Wood claimed that the scaffolding role provided by parents is highly beneficial for enabling children to engage more actively in learning tasks.

The three types of scaffolding (cognitive, technical and affective) roles of parents were further examined by Neumann (2018), who video-recorded 55 parent-child interactions (average age: 3.49 years) when they played on an iPad at home. By coding all parent utterances into three types of scaffolding behaviours (cognitive, affective, or technical scaffolding), Neumann found that the most frequently used scaffolding by parents was cognitive scaffolding, and the least frequently used one was technical scaffolding. Neumann claimed that parents play a key role in guiding young children's interactions with tablets (e.g. iPads). Neumann further suggested that coaching parents in using scaffolding strategies during touch screen activities has the potential to support children's early learning.

In other studies, parents were reported as the ones who make the rules about children's touch screen use (L. S. Clark, 2011; Livingstone et al., 2015; Oliemat et al., 2018; Rosin, 2013; Seo & Lee, 2017). For example, L. S. Clark (2011) examined how parents establish rules to mediate children's use of digital devices, which shows parents make rules with regard to children's touch screen activities. Rosin (2013) reported that parents are in the habit of setting rules for children's use of touch screens at home, which also shows the power of parents in their children's engagement with touch screen devices. This view was also reported in Oliemat et al. (2018) study in Jordan. They found that parents impose rules regarding children's tablet usage through examining a total of 40 6-year-old children's play with touch-screen tablets. Seo and Lee (2017) emphasized the importance of 'rules and restrictions' and identified restrictive mediation (setting rules to restrict the time or content of children's touch screen use) as an appropriate form of parental mediation and strategy for children's education when using touch screens.

In summary, parents were frequently reported as playing a scaffolding role in children's touch screen use. Parents' power in making rules for children's touch screen use were also reported. However, these reports are mainly based on parent-child interactions in

a single cultural group. These studies do not examine immigrant parents' perspectives with regard to their roles in their children's touch screen use in a different cultural context. Correspondingly, my study aims to address this aspect.

2.1.3 Touch screens in ECE for young children: Teachers' views

Several studies have examined young children's use of touch screen devices in educational settings from teachers' perspectives. There appear to be two schools of thought in the professional literature when it comes to early childhood teachers' perspectives on children's use of touch screen devices. One argument is that touch screens can be great learning tools and bring potential learning opportunities, and in this way can enhance children's learning. The opposing argument is that touch screens (and other digital technologies) disrupt the extant ECE emphasis on natural play as learning. This contention seems to be based on perspectives of learning in the ECE context. These arguments raise the possibility that the notion of touch screen devices as a new way of producing enhanced learning opportunities for children may be difficult to accept in an environment in which play-based learning is historically valued.

2.1.3.1 Touch screens as a learning tool in ECE

Several studies have discussed the value of touch screen devices and other technologies for enhancing children's learning (Dorouka et al., 2020; Kalogiannakis et al., 2018; McKenna, 2012; Schacter & Jo, 2016; Wang et al., 2016). Empirical research has been conducted to examine whether touchscreen learning can lead to improvements in young children's learning outcomes. Findings show that touch screens facilitated children's learning performance in various ways.

Some studies have argued that there is a beneficial effect of touch screen devices on young children's learning achievements (Dorouka et al., 2020; Kalogiannakis et al., 2018; McKenna, 2012; Schacter & Jo, 2016; Wang et al., 2016). For example, a pre- and post-test study conducted by Wang et al. (2016) found that after 10 minutes of exposure to an iPad touchscreen app designed to teach how to tell the time, the post-

test scores of 5-to 6-year-old children were significantly higher than those on the pre-test, supporting their prediction that children could benefit from touchscreen learning. This positive role of touch screen learning for learning outcomes has also been proved in a limited number of studies of younger children (Patchan & Puranik, 2016) and even toddlers (Strouse & Ganea, 2017).

Other studies have attempted to connect children's touch screen use with a specific learning purpose, such as critical responses, communication, problem-solving skills, mathematics, and word learning. For example, S. Wood and Jocius (2014) examined how three iPad applications were used for developing children's critical responses to children's literature. They highlighted how two black male elementary school students used these digital tools to respond critically to issues of power and equity presented in the children's literature used in the tutoring programme in which they were taking part. Khoo et al. (2015) study highlighted the learning potential of iPads for enhancing young children's communications with peers and teachers in a New Zealand early childhood centre. She found that iPads were one of the wide variety of digital and mobile technologies available for young children to access resources to inform their learning and their peers' learning. In this study, young children were found to be able to use iPads to express, share and communicate their ideas to others in multimodal ways that were appealing and meaningful to them, and also to emulate teacher talk to help peers become aware of, and use, iPads productively in peer group learning. Huber et al. (2016) examined young children's transfer of learning from a touchscreen device from the perspectives of teaching and learning. The researchers aimed to determine whether children improved at a problem-solving task after practising with an isometric task on the touchscreen. They explored the extent to which practice modalities such as a touchscreen or a physical version affected performance, and investigated whether the benefits of touchscreen practice required prior experience of solving the physical version of the task. Huber found that 4- to 6-year-old children improved at a problem-solving task through practice on a touch screen device, and the extent of this improvement was similar to that of children who practised only with a physical version. Moyer-Packenham et al. (2016) study demonstrated improvement in 3- to 8-year-old children's learning performance and efficiency through six different virtual

manipulative mathematics apps on touch screen devices. Russo-Johnson et al. (2017) examined touch screen interactivity and young children's learning of words and provided initial information about the effectiveness of touch screens for children's learning. Their study provided suggestions about how to promote children's learning through the design and development of touch screen apps.

Given these positive effects of the use of technology and children's learning outcomes, Hsin et al. (2014) attempted to propose a typology for conceptualizing the complexity of the relationships between technology use and children's learning. Based on a systematic literature review of empirical studies of how technologies influence young children's learning, Hsin et al. (2014) argued that children's learning with technologies is conditioned by several factors, which they categorized into children, adults, and technology aspects. A trend for examining children's development of digital literacy emerged, involving an investigation of the skills needed for and perceptions of technology use.

In sum, the set of studies above consistently discussed the value of touch screen devices for enhancing children's learning in educational settings. However, many teachers hold a different view that children's touch screen use will interrupt natural play and have strong negative effects on children's development. The next section examines this opposing view.

2.1.3.2 Touch screens disrupt the extant ECE emphasis on natural play

I. The extant ECE emphasis on natural play

Historically, 'natural play' for young children has been valued by ECE educators and researchers. The Children's Play Council in the UK has done a review on children's natural play and indicated the distinction between nature play and human-made play (Lester & Maudsley, 2006). It defines play as 'the process whereby children can fulfil their drive to affiliate with nature' (p.4) and argues that the natural environment and natural elements provide optimal settings for children to engage with and actualise their drive to play. Through this definition, it can be seen that the enduring strength of

established early childhood discourses around ‘nature’ and ‘natural play’ is still very influential in shaping the perceptions and beliefs of ECE educators (O’Connor, 2017).

II. Touch screens disrupt the extant ECE emphasis on natural play

According to the Children’s Play Council’s definition of natural play (Lester & Maudsley, 2006), digital play is clearly not what they perceive as natural play because its features are made by humans. In this view, touch screens disrupt natural play by assigning the pre-programmed activities to children and requiring them to move figures on screens in a relatively fixed environment, instead of offering natural elements and the natural environment for children to engage with and actualise their drive to play. As a consequence, children’s use of touch screen devices was perceived as problematic by some ECE educators as it might disrupt the naturalness of ECE settings (Verenikina & Kervin, 2011).

Studies (O’Connor & Fotakopoulou, 2016; Santamaria, 2020) have argued that children’s use of touch screen devices alongside other technologies could disrupt the extant ECE emphasis on natural play as learning. For example, a UK study reports that children’s touch screen use could challenge the notions of ‘innocence’ and ‘naturalness’ emphasised in ECE discourse (O’Connor & Fotakopoulou, 2016). This view is particularly popular in the New Zealand ECE context because of the cultural connection between New Zealand and the UK. Children’s natural play and play-based learning activities are highly valued in New Zealand ECE settings. A recent study (Santamaria, 2020) conducted in several different types of ECE settings in New Zealand, illustrated some ECE teachers’ perceptions of ‘natural play’ versus ‘touch screen play’. According to these ECE teachers who claimed to be non-users of digital devices, children’s use of touch screens could disrupt children’s natural play, resulting in negative effects on children’s cognitive development (p.111), creativity and imagination (p.111) , and social skills (p.113). One view these ECE teachers believed is that ‘children’s learning should focus on the natural play because it supports their neurological and physical development’ (Santamaria, 2020, p.111); otherwise, children engaged in touch screen play, were just ‘sitting with their neck down, swiping... [which] aren’t helpful to their development’ (p.111). These teachers collectively stressed that ‘tablet use led to

sedentary activity as they perceived that brain development required constant physical movement' (p.113). Another view these ECE teachers believed is that 'digital technology limited children's imaginations' (p.111). They argued that using tablets limited children to a prescriptive or fixed play environment and took away the freedom of selection from children, and children were more creative and imaginative, physically active and social when they don't use tablets in their service. To support their views on the limiting effects of touch screen devices on children's imagination, these teachers claimed that children simply imitated adults' use of digital technologies and concluded that 'children had become used to resources and activities being given to them as opposed to using their creativity and being resourceful' (p.111). Discussing children's social skills, these ECE teachers believed that 'children's natural play with peers supported the development of their communication skills'. In contrast, touch screen play was viewed as restricting children's social skills. The teaching team in one ECE centre believed that social activity was best carried out without using ICT and that when children were mentally present in their education, this led to them creating memorable and joyful learning experiences in connection with people, animals, and the natural environment. The teaching team claimed that 'the four-year-old children experienced learning by being social because the open-ended and sociocultural environment nurtured their development' (p.113).

In sum, while many teachers recognized the value of touch screen devices in enhancing children's learning in educational settings, others believed that children's touch screen use will interrupt children's natural play and have strong negative effects on children's development. These divergent views on the benefits of children's touch screen use in ECE settings also raise questions about the role of the teacher with regard to children's touch screen use. The next section examines the teacher's role.

2.1.3.3 Teachers' roles in children's touch screen use in ECE

I. The Teacher's role in a play-based learning ECE context

Debates have arisen on play-based learning and teacher-directed learning in ECE (Bubikova-Moan et al., 2019; Pyle & Danniels, 2017). Play as the primary context for

young children's learning is a dominant discourse in ECE (Danniels & Pyle, 2018; Johnson et al., 2013; Elizabeth Wood, 2009) and teaching as a context for supporting young children's learning is a highly contested discourse (McArdle & McWilliam, 2005). Some scholars claim that teaching is not a key component for young children's learning and ECE does not involve teaching (Siraj-Blatchford, 2009), while others argue that teachers' scaffolding in a particular play format, such as mature play or guided play (Weisberg et al., 2013), is beneficial to young children's learning of academic skills (Bodrova, 2008). Some scholars even question whether there is a deliberate silencing of the term 'teaching' in play-based ECE contexts (McArdle & McWilliam, 2005; Ryan & Goffin, 2008). Other researchers suggest that the ways in which the concept of teaching is silenced or disguised is related to the use in ECE literature of particular terminology to describe what ECE teachers do: such terms include 'sustained shared thinking' (Grieshaber, 2008, p. 7), 'noticing, recognising and responding' (McLachlan et al., 2018, p. 114), 'facilitation of learning opportunities', 'guided participation', 'scaffolding', 'developing', 'co-construction', 'supporting', 'demonstrating' (Arthur et al., 2017; Hill et al., 2005). Such terminology is constructed through ECE discourses that require the exclusion of the use of the term 'teaching' in ECE. As McArdle and McWilliam (2005) suggest, 'to teach without teaching' (p. 330) is the accepted slogan of an early childhood pedagogy premised on a narrow view of teaching which equates teaching with transmission and instruction.

From a play-based learning perspective, young children's learning is positioned as occurring within the 'natural' context of the play, and this 'natural' context is supported by the facilitation of a caring, unobtrusive, maternal figure, and requires the deliberate interaction of a more expert other. In this way, a binary between the 'natural' context of play and the 'structured' context of teaching is constructed. As a result, the role of the ECE teacher has become controversial.

In sum, in a play-based learning ECE context, there are competing voices with regard to the teacher's role, as play is the dominant discourse in children's learning. Within these competing voices, the role teachers play in children's engagement with touch screen devices in ECE settings needs to be examined. This is what the next section discusses.

II. The teacher's role in children's touch screen use in ECE

Despite the perceived efficacy of touch screen devices for educational purposes, the role that ECE teachers ought to play concerning children's touch screen use is less defined. Some scholars (AlAgha et al., 2010; Neumann & Neumann, 2017b) emphasise teacher-led activities and describe the teacher's role in young children's touch screen learning as a leader, guide or supervisor, while other scholars (Falloon & Khoo, 2014; Khoo et al., 2015) give more importance to children's roles and argue that children should be placed at the centre and teachers should be scaffolders, using touch screen devices as a tool to scaffold child-led touchscreen-based learning. While some of these views may relate to the age of the child and perceived competencies, these competing voices can also be attributed to different perceptions of children's learning.

Examining teacher-led learning, AlAgha et al. (2010) study investigated how to use touch screen technology to facilitate teacher-learner dialogue and teacher-led activities across multi-touch surfaces, which shows the importance and leadership of teachers in children's touch screen learning activities. Neumann et al. (2017) examined the research to date on tablets, apps and emergent literacy in young children at home and at pre-school, and argued that teachers and parents should develop effective strategies for scaffolding young children's tablet use and provide advice on selecting quality literacy apps, which have the potential to enhance emergent literacy learning in young children.

With regard to child-led learning, teachers were considered as supporters and scaffolders. Khoo et al. (2015) shed light on different ways in which teachers could make use of an iPad to expand children's learning in an ECE setting. As scaffolders, according to Khoo's study, teachers can use an iPad as a relational tool, a communicative tool, a documentation tool, and an informational tool for supporting child-led learning. Khoo et al. (2015) further identified the teacher's scaffolding role by finding that teachers created new and different opportunities for teaching and child-led learning, scaffolded children's learning interactions with the iPad, and supported children's development of digital literacy awareness, dispositions and skills. Räsänen et al. (2019) found that through teachers' scaffolding, children's use of digital and non-

digital tools for learning purposes became more sophisticated as children wrote emails, read books, searched the Internet, wrote stories both in handwriting and with digital devices and created a Webshop. This study highlights how, through the use of technology in early childhood classrooms, teachers are beginning to move from a traditional model of teaching to a model that more broadly supports children's learning and development.

The studies discussed in the preceding section demonstrate that there are different teachers' perspectives regarding young children's touch screen use due to different conceptions of children's play and learning.

In summary of children's touch screen use internationally, I conclude that there are studies on children's touch screen use in different countries, but not in relation to of immigrant populations from a cross-cultural perspective. At this point, there is no research-based evidence about Chinese immigrant children's touch screen use in New Zealand ECE settings. This is especially important because there are significant numbers of children from immigrant families enrolled in ECE services in New Zealand, and one of the largest groups of immigrants comes from China (Statistics New Zealand, 2015). It is this gap that leads me to examine Chinese children's touch screen use in New Zealand ECE settings. The next section reviews research undertaken in New Zealand on children's touch screen use in ECE.

2.2 New Zealand research on children's touch screen use in ECE

2.2.1 Touch screen use in New Zealand ECE settings

Although ICT has increasingly permeated children's lives in New Zealand (NZ on Air, 2015), studies on children's use of touch screen devices in ECE are scant. This section reviews studies done in New Zealand with a specific focus on kaiako (a Māori term referring to teacher or teachers in New Zealand ECE curriculum Te Whāriki) and children's use of touch screen devices, including iPads.

In an investigation on whether iPad use in ECE enriched children's learning, Fagan and Coutts (2012) conducted a qualitative study that involved observations of iPad use in a

kindergarten and a childcare centre. These researchers found that kaiako used tablets for exploration, creativity, collaboration, communication, leadership, and documentation of learning. These researchers recommend the use of five open-ended apps. Children can use these apps to take photos, record conversations, make video recording, and write and draw on the screen. It suggested that these apps would both enhance children's creativity and support the development of their literacy, numeracy, musical, and fine motor skills.

Similarly, Hatherly and Chapman (2013b)'s case study at an education and care service for two- to five-year-olds found that iPad-use positively complemented Te Whāriki's (NZMoE, 1996) literacy and communication goals on account of their capacity to facilitate intentional teaching and child-led learning. The data was drawn from five observations by kaiako on children's iPad behaviour. This included reflective interviews done with teachers about children's learning. Hatherly and Chapman (2013) reported that kaiako customarily aimed to facilitate the development of children's literacy skills and while emphasizing the need to achieve a balance between using iPads and non-digital books. These kaiako commented that while children were more inclined towards using the iPads, their centre's overriding goal was to develop children's capacity to read non-digital books.

In another study on kaiako and children's use of touch screens, Khoo et al. (2013) explored iPad use at an ECE centre. These researchers' observations of iPad use and teacher-child conversations found that children aged five and under used iPads in child-led explorations. These activities included taking photos, communicating with other children while using apps, and children reflecting on their own learning. The results from this research reveal that kaiako used iPads for the purpose of socializing, communicating, collaborating, and for the purpose of documenting activities and information retrieval. Furthermore, they found that iPads, as a collaborative tool, improved the interaction quality of relations between kaiako and children, and supported scaffolding initiatives taken to improve children's learning. The resulting improved interactions provided a model for children's interactions with their peers. In summary, these found that the iPad's communicative features facilitated the further development of peer-learning and exploration.

Khoo et al. (2015)'s case study examined the iPad use of two kaiako and approximately 40 children's in an ECE service. The interviews conducted with the kaiako highlighted the value of iPad use in that their use attends to the Te Whāriki's (NZMoE, 1996) principle of relationships, Ngā Hononga, in that iPads enable children and kaiako to form relationships through collaborating in the small groups that work with iPads requires. Referring to sociocultural theory, Khoo et al. (2015) argued that touch screen devices do not drive teaching and learning, but rather that learning is driven by relationships kaiako had with children, parents, and families. Furthermore, Khoo et al. (2015) found that iPads and apps were used by kaiako for observation, communication, information retrieval, and documentation. According to these researchers, touch screen devices enable children to enhance their capacity to create learning , an outcome that further enhances relationships between kaiako and children. These researchers concluded that the use of tablets enriches social interactions between kaiako and children. What they observed is that kaiako modelled both the limits of using tablets as learning tools and the social etiquette required when using them. This involved better quality learning in that it resulted in peer learning and collaboration in place of children exploring the use of iPads through mere trial and error.

In sum, the local studies shows that touch screen devices were generally used for a variety of purposes in New Zealand ECE settings such as exploration and creativity. Many of the studies reviewed found that touch screen use encouraged collaboration between children and their peers as well as between children and kaiako. The limited empirical studies on touch screen use exemplify the need for further research on children's touch screen use in New Zealand, particularly with regards to immigrant children's touch screen use from a cross-cultural perspective.

2.2.2 Perceptions of Kaiako in New Zealand ECE settings

Some New Zealand studies focus on kaiako perceptions of the potential use that iPads might have for learning in ECE settings. Almashaileh (2016) interviewed four ECE Kaiako and found that they believe iPads and apps facilitate both teaching and learning as a consequence of enabling them to access a wider variety of educational content.

These kaiako believe that the main affordances offered by iPads are their portability and ease of use. The researcher furthermore found that iPads offer the potential of better skills in the areas of literacy, numeracy and language learning for collaborative and cooperative learning and so on. Alternatively, Finch and Arrow (2017) also reported the perceptions of ECE kaiako. They found that parents think of iPads as unnecessary toys, while kaiako believed using iPads had the effect of social isolating children or causing anti-social behaviour. However, Finch and Arrow's (2017) observations of kaiako when they were scaffolding three- to five-year-old children, concluded that children's use of iPads resulted in turn-taking and peer collaboration, which is appropriate behaviour. MacCallum and Bell (2019), in their ethnographic case study done in a kindergarten in the Hawkes Bay tried to determine how mobile devices and tablets enables three- to five-year old children's learning and communication. This case study comprised a three-month trial in which two kaiako used iPads. The researchers' observations of and meetings with these two kaiako highlighted that they initially needed professional development in order to effectively use of tablets. As a consequence of the confidence they gained from this training, the kaiako went on to quickly learn how to solve the inevitable issues that arose when learning to use iPads independently. In this context, the iPads were used to be creative, such as to create e-books and drawing pictures; to take photos and videos, and assessment; to add learning evidence and outputs on learning stories and for kaiako to write comments on this evidence and outputs.

In contrast to the above reviewed studies, Gerritsen et al. (2016) study surveyed the amount of active playtime and screen time that three- to four-year-olds in four different types of ECE services experienced in the Manukau and Waikato regions.² This study describes how children's computer and tablet use in community daycare centres and kindergartens ranged in frequency with respect to how often these devices were used – sometimes it was daily, sometimes it was monthly. While some service types reported they did not use digital technologies, for reason that they preferred children to be

² These different types of services included 80 private daycares, 76 community daycares, 45 public kindergartens, 31 play centres, and five kōhanga reo services (Gerritsen, 2016).

involved in free-play and other physical activities, the study neglected to elaborate upon why all 31 playcentres, which participated in this study, did not use computers/tablets. Perhaps one answer to this issue might be found in the work of Gerritsen et al. (2016), who discovered that services, generally speaking, are of the mind young children's engagement with television, DVDs, computers, and tablets encourage sedentary behaviours that negatively affected their health. This latter study stresses the need for policy and education guidelines to support the idea that children's activities should be physical and as such involved limited screen time. Furthermore Gerritsen et al. (2016) recommended that kaiako should participate in professional development that would lead them to promoting children's health and avoiding childhood obesity.

A recent study conducted by Santamaria (2020) in four different types of New Zealand ECE services indicate that, while some kaiako manifest a supportive attitude towards touch screen use due to its learning potential, other kaiako claim to be non-users of touch screen devices. According to the supporters, using tablets was that children "are going to be exposed to it", "it is the way of the world" (p.135); and tablets were used for educational game in the centre (p. 136). According to the latter kaiako, children's use of touch screen devices might disrupt their natural play, which in turn might result in the development of their cognitive development, creativity and imagination, and social skills becoming impaired. These researchers advocate that children should play an ICT-free type environments where they can create through use of their physical senses, which is to say in a natural environment that enables them to connect with other human beings and the animal world (p.113).

In sum, these studies highlighted diverse views among kaiako about how touch screen devices should be used and found that devices were used individually or in groups. The contradictions or confusion of kaiako suggests competing voices in the ECE sector, which is an aspect that my study seeks to explore further.

2.3 Research conducted in a Chinese context

While the majority of studies reported thus far are based on Western perspectives on children's touch screen use in ECE settings, a growing body of scholarship exists in

Asian cultural contexts (Dong & Newman, 2018; Ebbeck, 2016). Due to the high percentage of young children who own touch screen devices (W. Li, 2014; C. Liu, 2015; W. Y. Liu, 2017), it is important to understand Chinese parents' views on children's touch screen use. I discuss these views in the following section.

2.3.1 Chinese parents' views on children's touch screen use

Over the past decade, Chinese parents' beliefs and attitudes in relation to digital learning in early childhood have become polarised (Dong et al., 2020). On the one hand, parents have begun to appreciate the value of digital devices and tend to feel comfortable with their children's use of digital devices in the home (W. Y. Liu, 2017). Parents also support the appropriate use of digital devices in ECE settings. What is more, parents have positive attitudes towards the value of their children's use of touch screen and believe that children should be educated on how to use digital devices with the intention of enhancing their academic development and future opportunities. On account of the increasingly diverse digital landscape that we live and work in, parents have come to believe that a range of digital technologies might offer young children new knowledge and learning that are fundamental to their futures. Researchers found that those parents with a higher level of education tend to believe that using digital devices will develop their children's learning competencies, language skills, self-expression, and social competencies (C. Chen et al., 2020).

On the other hand, parents are concerned with the possibility that unrestricted digital use of digital devices will risk them engaging with dangerous content on the internet. Parents are worried about the impact of digital devices on children's social and developmental health (Jiang & Monk, 2015). Due to the rapid growth of touch screen devices and other digital technologies, parents have expressed their uncertainty about mobile or touch screen devices, as they are unable to discern whether these devices will be beneficial or harmful to their children, let alone what the best way to incorporate these touch screen devices should be (C. Chen et al., 2020). Some parents set rules and limits on the frequency and duration for using digital devices, but did not recognize the importance these devices play in enabling young children's learning (Liu, 2017). Dong

et al. (2020) report that, in a recent survey undertaken in China during the COVID-19 pandemic, involving 3,275 parents of children aged from three to five, some parents have a negative attitude regarding children's use of digital devices when this activity involves online learning. This study highlights the point that parents believe that using digital devices for online learning inhibits both the learning experience and social interactions that are required to engage young children, and that such experience may result in poor learning outcomes.

In sum, there are competing voices among Chinese parents with regard to children's touch screen use in the Chinese context. There is no literature on Chinese immigrant parents' views on this issue. This significant absence in the literature is important as the competing voices will possibly be more complex when expressed in a different cultural context, such as that which they find in New Zealand. It is in this latter context that my study seeks to explore the value of touch screen devices to children's learning. In order to understand this cross-cultural context, I examine Chinese immigrant parents' views on childrearing in the following section.

2.3.2 Chinese immigrant parents' view of childrearing

Some of the more pertinent studies on this subject indicate that Chinese immigrant parents' view of childrearing are deeply shaped by traditional Chinese beliefs, even when they are not living in their country of origin (H. Chen, 2001; Ebbeck & Gokhale, 2004; Huntsinger et al., 2000; Zhang et al., 2002). For example, H. Chen (2001) found that there was 'no significant differences between the Chinese and Chinese-American groups' (p. 310) when comparing Chinese parents, Chinese-American parents and American parents on their way of raising and educating children. Chan (2004) examined Chinese immigrants in Australia and found that in order to establish a sense of security, Chinese immigrants try to be more Chinese than the Chinese in their homeland. Guo (2010), who studied Chinese immigrant children's learning experiences in New Zealand early childhood education settings, found that Chinese immigrant families are very good at maintaining their culture and, furthermore, that the family experiences of immigrant Chinese children influence their learning experiences in non-

Chinese learning settings. The above studies show that Chinese immigrant parents' perceptions of raising children are deeply influenced by their traditional culture.

The Chinese philosophers Confucius (孔子), Mencius (孟子) and Xunzi (荀子), among others, are philosophers whose ideas have influenced the way in which children are raised by their parents (Chan, 2004). While these philosophers have differing perspectives with respect to what human nature comprises, they all agreed that human beings can be educated to become a good people, irrespective of their genetic makeup. The idea that education can make a big difference is central to the Chinese understanding of culture. Confucius, of all Chinese philosophers, is considered to be the philosopher whose thoughts most inform Chinese people's views on the nature of human development (Chan, 2004; Lin & Fu, 1990; Shek & Chan, 1999). Confucian thought influences the thinking of many, if not all, aspects of the formation and education in children in China (Chan, 2004). The most important contributions Confucian thought has made to the education of children and young people, according to Guo (2010), has to do with the work of self-perfection and the development of one's character; work that must be integral to the hard work required when seeking academic success; when one is a child or a young adult. This learning-centred idea of Chinese parents is of great importance to my study as it might suggest competing voices when their children attend New Zealand ECE centres where the play-centred idea is recognised.

In addition to keeping their deeply rooted cultural traits and beliefs, other studies indicate that the experience of immigrating to another country can lead to an alteration in the traditional beliefs and values of the immigrants. Goldman (1993) refers to this experience as 'cultural lag' to illustrate the difference between resistance to change and change that inevitably occurs when demonstrating how cultural values change. Sharlin and Moin (2001) researched immigrants' adjustment of values in their host country and found that the beliefs and attitudes toward life are formed through comparing life before immigrating to the experience of life after immigrating. As such, the task of strategically forming a satisfactory personal life in a new society involves immigrants challenging certain features of their traditional beliefs while at the same time attempting to retain certain features that continue to have value. The above described

transformation is inevitable given the daily exposure to the new cultural values and realities that comprise experience of the immigrants' host environment, and therefore it should not be surprising that Chinese immigrant families change their beliefs and practices (Parette et al., 2004). Zhang et al. (2002), in a broad-spectrum study, researched how Chinese immigrants come to constitute some common deeply rooted cultural traits while at the same time nurturing some new traits that are characteristic of their new environment. Lin and Fu's study (1990) illustrates this transformative dynamic when they compare childrearing beliefs and practices among Chinese and immigrant Chinese in the US, when observing the adaptability of Chinese immigrants to life and its social structures in the United States. Similarly, Li's (2001) study of Canadian Chinese immigrants reveals that Chinese immigrants were motivated by an internal need to conform to the sociocultural context in Canada. Guo's (2010) study of Chinese immigrant families in New Zealand indicates that parents tend to embrace the mainstream culture that characterises life in its ECE centres, by cooperating with their child's centre, while at the same time holding back their opinions from the resident 'Kiwi' teachers³. This strategic behaviour reflects Chinese immigrants' prioritizing, above other ideals, the need to develop a sense of their valued participation in their new community (Parette et al., 2004). This critically self-conscious active approach to change, inevitably, influences the ways Chinese immigrant parents raise children.

In sum, from the above studies we can see that Chinese immigrant families' views on childrearing are conditioned by the tensions that must inevitably be associated their giving up life in their home country to live in another cultural context. On the one hand, some Chinese families tightly hold on to their origins despite the challenging nature of their immigration experience while, on the other hand, they inevitably move through a process of gradual assimilation. It therefore follows that there should be a mix of the two cultural forces within the development of their viewpoints on childrearing, of course with a degree of diversity in how individuals and family groups or communities respond to this challenge. The diversity in Chinese immigrant families' views on childrearing means that it should be expected that there would also be a diversity of

³ Kiwi: a nickname for New Zealanders.

views with respect to the role touch screens should play in their children's education. This study explores the diverse views of Chinese immigrant parents about their children's touch screen use in a New Zealand context.

2.4 Summary

It can be seen that there are a variety of competing voices concerning young children's touch screen use (Barback, 2012; Khoo et al., 2015; C. Liu, 2015; Radesky, Peacock-Chambers, et al., 2016; Eileen Wood et al., 2016), including multiple perspectives from parents (Cristia & Seidl, 2015; Ebbeck, 2016; Radesky, Kistin, et al., 2016; Eileen Wood et al., 2016) and teachers (Khoo et al., 2015) from different cultural backgrounds. This review highlights some conflicts in educators' (teachers and parents) beliefs and conceptions. These conflicting voices, if they just happen in a different space and time, may not matter much. However, if these competing voices are present in the same space and time, it is more than likely they will exert considerable influence on and perhaps create some confusion in young children, whose voices and behaviours are likely to be shaped by adults. From this recognition, we can usefully inquire into how competing voices from parents and teachers, especially from different cultural backgrounds, impact on the way touch screen devices are valued and experienced by children. Additionally, it is worth examining children's voices in relation to their experience of these competing discourses.

Children's views in this respect have thus far not been well canvassed. This review identified that very few studies have made children's voices a focus in their investigation of children's touch screen use, let alone the voices of preschool children. I was only able to locate two studies (Fane et al., 2018; Neumann & Neumann, 2017b) that examined children's voices on their touch screen use. Their focus was on using tablets and apps to enhance emergent literacy skills in young children aged from 2 to 5 (Neumann & Neumann, 2017b) and using an emoji as a visual approach to researching with children and young people (Fane et al., 2018). Where the literature becomes sparse is in examining multiple perspectives and exploration beyond dominant discourses, in investigating young children's voices on their own experience of touchscreen devices

in a cross-cultural context. This study aims to fill this gap by investigating the experiences of children Chinese children entering a New Zealand ECE setting.

Based on the literature review, I argue that there are coexisting competing voices of support and concern among parents and teachers concerning children's use of touch screen devices. The origin of these viewpoints appears to hinge predominantly on the extent to which parents and teachers believe touch screens hold educational value, as opposed to entertainment. Moreover, currently there appears to be no literature which examines Chinese preschool children's use of touch screen devices in New Zealand ECE settings, where competing voices from Chinese families and New Zealand ECE teachers may add to the current debate. These competing voices increase the importance of understanding beliefs about young children's use of touch screen devices held by parents and teachers from different cultural contexts and the impact of these beliefs on young children's experiences of touch screen devices. Furthermore, children's voices in their experiences of touch screens are still absent from this discussion involving adults' competing voices. Children' voices are of great importance, and need to be addressed and heard, and added to the competing voices of adults, which suggests another new layer of competing voices between children and adults. This thesis seeks to address this gap.

In the chapter that follows, I examine the issue of the absent voices of children in touch screen research.

Chapter 3

Summoning children's voices about their experiences of touch screens

While there have been many studies on children's voices and the importance of supporting children to express their views, few studies have focused on voices of very young children, such as those under five years of age (A. Clark, 2005; A. Clark et al., 2005). As acknowledged by Bartels et al. (2016), even very young children are "involved in social life and society" (p. 681), so it is important that these children's voices are supported and heard.

This chapter starts by introducing children's voices as one of the children's rights stated in the United Nations Convention on the Rights of the Child (hereafter referred to as UNCRC). I then argue that although having a voice is regarded as one of the rights of children, these voices are still unheard and unseen in practice, because adults tend to give little respect to the views of young children, especially those who are under five. This is equally pertinent to children's voices and perspectives on their digital experiences. I thus introduce children's rights in the digital sphere, in the light of the UNCRC, and their digital rights in practice. I argue that preschool children's voices are a missing perspective with regard to their engagement with digital technologies and devices. The importance of listening to children's voices about their digital experiences led me to explore approaches to achieving this aim. Among other approaches, I see the value of a dialogic approach to enable children's voices to be heard.

3.1 Examining children's voices

3.1.1 Children's voices in policy

The right for children's views to be heard, was proposed as one of the rights of the child in the UNCRC in 1989. The document includes:

Article 12: Parties shall assure to the child who is capable of forming his or her views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child. For this purpose, the child shall, in particular, be provided with the opportunity to be heard in any judicial and administrative proceedings affecting the child, either directly, or through a representative or an appropriate body, in a manner consistent with the procedural rules of national law. (UNICEF, 1989)⁴

Article 13: The child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice. (UNICEF, 1989)

To make it easier for children to understand their rights, the United Nations has also released a children-friendly version, which conveys respect for children's rights.



Figure 3.1: A children-friendly version of UNCRC⁵

The official recognition of children's rights in the UNCRC in 1989 indicated a major development as children's rights and children's voices were recognized at the policy level. However, the extent to which the UNCRC has been implemented in practice in

⁴ **UNICEF**, also widely known as the United Nations International Children's Emergency Fund, is a United Nations agency responsible for providing humanitarian and developmental aid to children worldwide.

⁵ Image from <https://www.unicef.org/media/56661/file>.

different countries is still debatable. If we examine Article 12 carefully, there are two key elements: i) the right to express a view; and ii) the right to have the view given due weight. Although the UNCRC gave children the right to have opinions on all matters affecting them, it also stated that children's views should be 'given due weight in accordance with their age and maturity'. In practice, there is a risk of children's voices being undermined as a result of adults' evaluation of the age and maturity of the child. This risk of children's rights in practice is examined in the following section.

3.1.2 Children's voices in practice

The response to the Convention has varied in different countries. In the United States, there has been no formal consent given to the Convention because it is seen to have the potential to undermine an adult's authority (Kilbourne, 1998). In the United Kingdom, although the government officially agreed and implemented Article 12 at a legal level, there is a recognised gap between the country's international commitments and its educational decision-making in practice. This gap can be seen in compliance reports. The UNCRC, consisting of an independent group of international experts on children's rights, is responsible for overseeing compliance and releasing periodic reports on breaches of the UNCRC (Lansdown, 2000). In its first periodic report on implementation in the UK in 1995, the Committee criticized the failure to solicit primary school students' voices and perspectives on issues related to sex education and school exclusion (p.3). In 2002, the report expressed concerns that in the education field, school children are not systematically consulted on matters that affect them. Another report, conducted on behalf of the Northern Ireland Commissioner for Children and Young People (NICCY), also provided new evidence for criticism by the UNCRC (Kilkelly et al., 2005). Aiming at identifying areas where children's rights were 'ignored or underplayed', and involving 1064 schoolchildren from 27 schools, this report assessed laws, policies, and practices that affected children's lives in accordance with the standards of UNICEF in Northern Ireland. Their assessment found that for children in Northern Ireland, the most important issue was 'not having a say' in decision-making that affected them (Kilkelly et al., 2005, p. xxii). These reports also

show that the rights of school children were investigated , but those of children under five were not included in those assessments. As the focus of my study is preschool children in New Zealand , it is important to inquire into new Zealand’s response to the UNCRC.

In the New Zealand context, as a signatory to the UNCRC, the government set up the Office of the Children’s Commissioner (hereafter referred to as OCC) to ensure children’s views are taken into account in the exercise or performance of the Commissioner’s functions, and to encourage other organisations to allow children to have a voice in matters that affect them. The functions of the OCC include i) raising awareness and understanding of children’s interests, rights, and welfare; ii) undertaking and promoting research into any matter that relates to the welfare of children; iii) bringing children’s and youths’ voices and views into discussions and advice; and iv) acting as an advocate for children's interests, rights, and welfare (Children’s Commissioner, 2015) The key mechanism for engaging with children was the Young Persons Advisory Group (YPAG), first established in 2003 and later reviewed in 2014, which enabled the OCC to engage regularly with a number of young people, so that its decisions and advocacy were based on the current lived experiences of young people. However, it was reported in the Children and Young People’s Voices Project (Children’s Commissioner, 2015) that YPAG’s work was ‘not flexible enough to get children’s input on issues as they arose’ due to a limited number of topics and through annual face-to face meetings (p. i). Moreover, it was reported that ‘the formal structure of YPAG, and the criteria required for young people to be considered for the group, did not allow younger or more vulnerable children to take part’ (p. i). Therefore, although children’s rights and their views were valued in New Zealand at an official level, the rights and voices of younger children (eg. preschoolers, toddlers and babies) were still likely to be neglected.

In sum, even though UNCRC (UNICEF, 1989) recognized children’s rights to express their voices, the view that children can express their voices often does not translate into practice, or is not seen as applicable to children of all ages. Younger children’s voices are still marginalized. The current gap in examination of preschool children’s voices is what my study attempt to address within the context of New Zealand.

3.1.3 Children's voices in academic research

There are heated debates on whether children are capable of forming and expressing their views or not. Within these debates, one stance is that children need to be recognized as capable social agents (Bacon & Frankel, 2014; James et al., 1998; MacNaughton et al., 2007). MacNaughton et al. (2007) believe that young children can 'create and communicate valid views about the social world' (p. 164). Kellett (2014) claimed that children are social actors who are autonomous individuals, and proposed that the ways of defining and assessing young children's 'capability' need to be reflexively re-examined.

However, this view was not shared by others. Young children are often viewed as deficient in certain aspects when they are compared with adults (Hammersley, 2017; Hendrick, 2000). In addition, those children's voices which are heard by adults, in fact, have often been filtered and re-interpreted by adults. While the intentions may have been to understand children's views, the messages expressed in children's original voices were filtered and therefore modified (Bucknall, 2014). This filtering happens, in particular, when children are younger, for instance, under the age of five years (Seo & Lee, 2017). A number of studies have found that the voices of children under five years old, compared with those of older ones, are more easily mediated, translated or even diluted (A. Clark, 2005; A. Clark et al., 2005; A. Clark & Statham, 2005). Therefore, a cautious approach is needed to ensure young children's voices are heard, especially if we adopt Hammersley's (2017) view that adult perspectives should not be treated as authoritative with regard to children and their worlds, in a way "that is common in society at large" (p. 115).

Conditions and processes also need to be established in order to enable younger children to express their views and be heard. Struthers (2015) proposed children need opportunities to practise asserting their rights through being heard and having influence. Lundy (2007) assessed the barriers to the meaningful and effective implementation of children's rights within education that would satisfy the requirements of Article 12. She proposed a model, which has four key elements, for conceptualising the implementation

of Article 12: i) Space: Children must be given the opportunity to express a view; ii) Voice: Children must be facilitated to express their views; iii) Audience: Children’s views must be listened to; and iv) Influence: Children’s views must be acted upon, as appropriate.

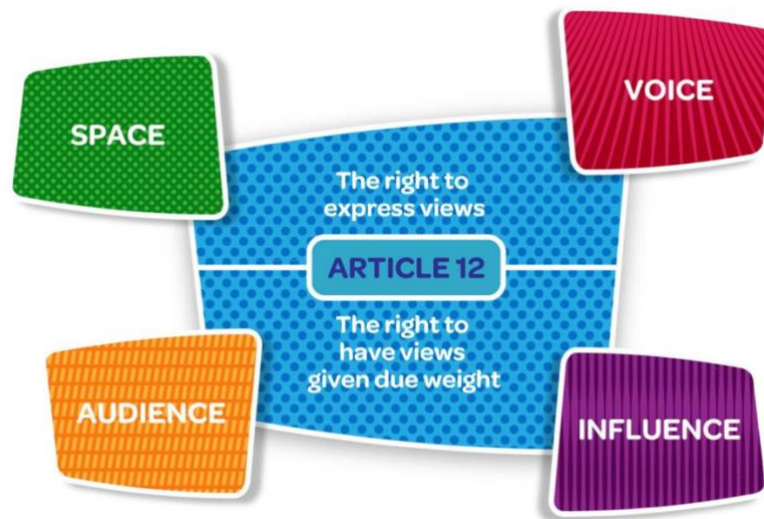


Figure 3.2: Lundy’s model of Children’s right to have their voices heard⁶

Table 3.1: Lundy’s Model of Children’s right to have their voices heard

Space	Voice	Audience	Influence
Children must be given the opportunity to express a view	Children must be facilitated to express their views	Children’s views must be listened to	Children’s views must be acted upon, as appropriate

Lundy’s model demonstrates that these four elements are interrelated. In addition to voice, Lundy proposed that opportunities must be provided for children to have the space to consider and share their views, and support should be in place to enable sharing of their views. Concerning Lundy’s notion of audience, an audience is needed for children’s views to be listened to and, crucially, there should be an outcome as a

⁶ Image data from https://ec.europa.eu/info/sites/default/files/lundy_model_of_participation.pdf. Used with permission granted from the Creative Commons Attribution 4.0 International (CC BY 4.0) licence.

consequence of children expressing their views. Lundy’s model of voice, space, audience and influence has successfully been incorporated into a range of contexts, including the European Commission’s work on children’s participation and their right to be heard. Lundy’s model of children’s right to have their voices heard is of particular importance to my study, because it not only advocates for children’s expression of their voices, but also argues for the provision of opportunities for children to express their voices (Space), children’s voices to be listened to (Audience) and acted upon as appropriate (Influence). My examination of children’s voices on their experiences of touch screen devices involves children’s Voices⁷ in different spaces such as the ECE centre and homes (Space), and their interaction with multiple voices from teachers and parents (Audience and Influence).

Specific attention has also been given to children’s rights in the digital sphere. Livingstone (2014) and Livingstone and Bulger (2014) categorized children’s rights in the digital sphere in relation to UNCRC’s three pillars of protection rights, provision rights and participation rights. Livingstone’s (2014) model on categorization of children’s rights in the digital sphere is summarised in Table 3.2.

Table 3.2: Livingstone’s categorization of children’s rights in the digital sphere⁸

Pillar I: Protection Rights	Pillar II: Provision Rights	Pillar III: Participation Rights
Children’s rights to protection and privacy	Children’s rights to access equally the digital world; the right to play; the right to obtain information and education;	Children’s rights to freedom of choice and speech;
See Articles 8, 16, 17e, 19, 34, 36	See Articles 17, 28, 29, 31	See Article 3, 12, 13, 15

From Livingstone’s (2014) categorization, protection rights include preventing children from being harmed by online abuse, privacy intrusions, cyberbullying, pornography,

⁸ Data from Livingstone’s (2014) categorization of children’s rights in the digital sphere against CRC’s three pillars.

and misuse of personal data. Provision rights include the right to have access to educational technology, online information and creative resources, and the promotion of digital skills in an equitable way (taking into account relevant languages, difficulties of access or conditions of disability or disadvantage). Participation rights include the inclusion of all children in diverse societal processes, including consulting them on matters of education, research and ICT governance. Livingstone's (2014) categorization of children's rights in the digital sphere is important to my study because the attitudes and roles of teachers and parents relating to children's touch screen use are highly related to how they understand children's rights (Dias et al., 2016) and the extent to which they value children's rights of protection, provision and participation.

3.2 Children's voices about their digital experiences

Recently, the UNCRC has passed the General Comment on children's rights in relation to the digital environment (UNICEF, 2021), which has laid out the ways that young people and children should be treated in the digital world, and how their rights should be protected. It states that 'meaningful access to digital technologies can support children to realize the full range of their civil, political, cultural, economic and social rights' (UNICEF, 2021. p.1). In addition, over 700 children and young people, aged between 9 and 22 years old, in 27 countries, were consulted during the process, during which they were asked how digital technology impacts their rights, and what actions they want to see taken to protect them. This approach reflects a big progress as it includes children's voices regarding their digital experiences in policy-making, but still, the voices of young children under five are not included.

Although children's voices and rights in the digital sphere are examined, the focus of most studies is on adolescents and older children (Livingston, 2014). Only a few studies attempt to include the voices of young children in the discussion of children's digital engagement (Falloon & Khoo, 2014; Kucirkova et al., 2019; Oliemat et al., 2018). One example is Oliemat et al. (2018)'s work, which examined a total of 40 six-year-old children's play with touch screen tablets in Jordan to explore children's views on how they used touch screen tablets. The findings present children's perspectives on the

purposes of their use of touch screen devices. They also show children's views of touch screen tablets as an entertaining tool more than as a learning tool, with playing games being the most common purpose. In addition, Oliemat et al. (2018) found that i) overall, children had a reasonable knowledge of touch screen tablets and their features; ii) children had acquired most of the skills needed to use tablets, but were still not in control in some cases; and iii) children expressed that they needed help and guidance from their parents while using tablets. Another example of a study that pays attention to the voices of young children's voices regarding their digital experiences (Falloon and Khoo, 2014). They used a purposefully designed App (Observeware) to capture display and audio data while five year old primary students were using iPads in pairs for developing numeracy, literacy and problem-solving/decision-making skills. Falloon and Khoo (2014) used Mercer's (1994) talk types framework to explore the nature of the talk students engaged in while they were using iPads, and examine how they were interacting with each other and their teacher, and how features of the device may have influenced this. By observing students' talk, they found that i) children were generally keen and eager to use the iPad; ii) children spontaneously interacted and supported one another's learning with the iPad; and iii) children learnt to use the iPad on their own and by observing others. These two studies offer an opportunity for us to understand children's touch screen use from children's perspective, but children in these studies are primary school age. Still, voices of children under five is scant. My study aims to build on children's voices on their touch screen use by adding four year old preschool children's voices to this discussion.

The two studies I found that focus on voices of young children aged under five in relation to their experiences with digital devices are the works of Kucirkova et al. (2014) and Fane et al. (2018). Kucirkova's (2014) study investigates the effects of a story-making app called Our Story and a selection of other educational apps on the learning engagement of forty-one Spanish 4–5-year-olds. The authors use a method of 'exploratory talk' to analyse peer engagement, but the focus of this study is more on the educational value of apps, instead of exploring children's voices. Fane's (2018) study used emoji as a visual research method for eliciting the voices of young children (aged three to five years) on their understanding and experiences of well-being.

Findings suggest the usefulness of emoji as a visual research method for eliciting young children's voices. This study showed a focus on research 'with' children by valuing children's perspectives and contributions to research, and also demonstrated that children are able to make insightful comments about their touch screen experiences. Consequently, this study is important to my study in that it showed children's voices are of value in relation to their digital engagement, and that a visual method can offer an effective way to elicit children's voices.

In sum, very few studies have examined preschool children's voices about their digital experiences. As has been noted, there is only one study that is an exception in this respect, but its focus has been on children's touch screen use as a tool. There has been little investigation of preschool children's voices relating to their digital engagement in different spaces, which could produce different meaning-making. This gap is what my study aims to address.

3.3 Approaches to exploring children's voices

3.3.1 Current approaches

Children's voices have gained increasing attention from ECE researchers (Canning et al., 2017; Fane et al., 2018; Spyrou, 2011). However, how to explore and listen to children's voices is still a question to be addressed. Some scholars propose an arena within which children are seen as social actors who provide a unique perspective on the social world about matters concerning children (James, 2007), while others actively look for ways of eliciting children's voices about their everyday experiences (A. Clark, 2001; Fane et al., 2018; White, 2009).

In order to listen to very young children's voices, researchers in the ECE field have increasingly advocated for a shift from *research on* children to *research with* children. Children's voices are actively sought and highly valued by collaborating with them in ECE research (Mayall, 2008). Christensen and James (2008), Mayall (2008), White (2011), L. E. Cohen (2015) and Fane et al. (2018) are among the researchers who have articulated the view of the child as an active participant in the research process, with unique insights to offer about their lives. This is of great importance for children's

voices being expressed and heard considering the concern about adults' propensity to filter young children's voices. Johansson and White (2011) took a further step to contribute to the interest in the voices of the youngest children - infants and toddlers. White (2011) argued that there is potential to recognise the role of the very young child as a competent yet vulnerable communicator with many voices; one who is capable of conveying complex meaning through genres that strategically orient them towards or away from intersubjective harmony. White (2009) adopted a dialogic research method, which enables toddler and teacher 'voices' to authentically inter-animate, thus allowing the voices of the youngest learner to be heard. The acknowledgement of children's influence and participation positions children as active agents (Horgan et al., 2017; Shultz & Guimaraes-Iosif, 2012) and as democratic citizens with a role in influencing how, education and other aspects of their lives manifest themselves in their lived experience (Serriere, 2010). In doing so, children's rights and agency are recognised.

More recently, digital technology has changed and expanded and provided a myriad of new possibilities for researchers. Some early childhood researchers have examined the use of these new technologies to explore children's voices. As already mentioned, one approach is to use emoji as a visual research approach to elicit young children's voices (aged three to five years old) about their understanding and experiences of well-being and improve children's participant engagement (Fane et al., 2018). Findings proved the usefulness of emoji as a visual research approach to eliciting children's voices. Mackenzie et al. (2018) also examined the use of emoji in conjunction with other visual methods such as video and digital interactive mapping, to explore children's voices. They found this visual method was useful for improving children's participant engagement and interaction with the research topic in ways that are salient for children and young people.

Issues have arisen in current research practices for listening to children's voices. Some researchers have assumed that voice research with children is by definition good, valuable, or of high quality (Spyrou, 2011). However, by extracting quotes from children to illustrate their findings, '[they might] end up caricaturing children' (Spyrou, 2011, p. 157). According to Komulainen (2007), 'listening to children is not necessarily 'good' but maybe, in fact, intrusive and the cause of further distress: more listening

may not inevitably mean more hearing' (p. 25). Komulainen (2007) questioned whether 'listening to children' in social research is more than 'a rhetorical device' (p. 26). Addressing the limitation of oral accounts that disadvantaged children with limited language. Warming (2011) observed that 'Inclusive strategies designed to cater to children's different preferences and abilities still risk favouring verbally inclined children, and thus reproducing symbolic violence towards less verbal children' (p. 50). Another issue is whether and to what extent researchers should pursue the authenticity of the voice of the child. Eldén (2013) contended that drawing methods 'do not aim to uncover authentic voices of the participating children, but rather, are crucial in allowing the complexities of children's narratives on care to emerge' (p. 67). These criticisms are valuable for me to consider when I explore children's voices.

Overall, these approaches point to the necessity of listening to young children's voices and the challenges associated with understanding their lived experience. Children's engagement with touch screen devices is an aspect of these lived experiences, but these have seldom been examined from the child's perspective across different spaces such as the home, the ECE centre and elsewhere. How and why researchers account for the complexity behind children's voices and understand the multiple forms of their voices is an important field needing further exploration. This is an aim of my study.

3.3.2 A dialogic way of accessing children's voices

A number of studies have examined children's voices in multiple forms using a dialogic method (De Vocht, 2015; Tallant, 2015; Tam, 2012; White, 2016). Pioneer in the Bakhtinian ECE field, White (2009) adopted a dialogic methodology and a polyphonic method to examine toddlers' voices. She then used a Bakhtinian analysis of infant-teachers' language when they were engaging with infants under one-year-old in a New Zealand early childhood education setting, in order to highlight the dialogic nature of their exchanges (White et al., 2015). Finely-tuned analysis of the interactions that took place in the visual fields of infants and teachers emphasised the importance of verbal and non-verbal combinations as a source of engagement and extended dialogue. Based on Bakhtin's polyphonic entreaty, White (2016) developed an approach to visual

analysis, which comprises multiple visual standpoints combined with re-probing interviews. White demonstrated that additional layers of meaning are retrievable when such viewpoints are laid bare for dialogic scrutiny. White (2017) further outlines a series of approaches, based on Bakhtinian dialogic principles, for understanding the importance of language and its form-shaping potential for very young children as learners. She explored utterances as a source of strategic orientation. Her exploration offers insights for my study as it pays attention to genre, which implicates teachers in the creation of meaning that is generated as a consequence. De Vocht (2015) explored the dialogic interactions between preschool children (aged from 3.5 to 5 years) and their teachers in two ECE settings in New Zealand. She brought Bakhtin's notion of answerability (referring to an ethical obligation or accountability to the other) to bear on teachers whose dialogues were re-produced by preschool children in their play. Vocht has made a great contribution on applying dialogic methodology into ECE research and giving attention to children's voices. This re-produced dialogue provided an important insight into the effect that teachers' voices have on the voices of children. Tallant (2015) explored preschool children's humour, which is understood as an underworld adventure of significance. Exploiting the dialogic notion of carnivalesque, she argues for early years teachers in the United Kingdom to embrace children's humour as a valued aspect of learning in early childhood education. Tam (2012) drew on the theory of dialogism to investigate children's bricolage under the gaze of teachers in sociodramatic play in a Hongkong ECE setting. As opposed to other studies into children's culture, Tam's study reveals that under the gaze of the teacher, children's play is largely practised as a reproduction of the teacher's cultural texts, and children's bricolage can only be deployed when the teacher's surveillance is temporarily absent. Tam's study is of great interest to me in that it pays particular attention to aspects of children's language and culture that are informal, improper or senseless in the eyes of the teacher. The multiple forms of children's language and culture under the gaze of teachers versus that which occurs without the presence of teachers provides a way of understanding children's cultural resistance to the domination of adults (Corsaro & Eder, 1990). This understanding is of particular importance to my study that is

investigating children's voices and their strategic responses to the influence of adults' voices in different spaces.

Taken together, these studies provide evidence that the dialogic method can capture children's voice in its multiple forms and multiple layers, not just as a single voice, but as a combination of verbal and non-verbal voices, under the influence of the voices of others in a social and cultural context. The important insights in these studies which use the dialogic method to examine children's voices, led me to think about the possibilities of adopting a dialogic method in my investigation of competing voices with regard to children's touch screen engagement across different spaces. The next chapter presents a rationale for adopting a dialogic methodology and the most appropriate approach for investigating competing voices.

3.4 Summary

In summary, although the UNCRC (UNICEF, 1989) was officially issued and has been widely recognized, in practice, there are still barriers remaining to children's voices being heard, especially younger ones, due to adults' judgement of their level of maturity. The barriers can be found in Article 12 itself as it highlights that children's views should be given due weight in accordance with their age and maturity when it advocates children's right to express their views on issues that affect their lives. That is to say, the judgements regarding whether the child is mature enough to express their views or not, are essentially still made by adults. As a result, the opportunities for children's voices to be heard, in reality, may be reduced in many cases due to adults' judgements of the level of maturity of children in a dialogue. This is particularly the case when the voices are those of very young children such as pre-schoolers, toddlers and babies, as adults are often unlikely to consider these very young persons as being sufficiently mature to have a valid opinion. The reality that younger children's voices are still unheard and unseen is also true to children's digital experiences. This missing perspective of preschool children on their digital experiences revealed a gap which my study attempts to address within a cross-cultural context of Chinese children attending a New Zealand ECE setting.

Researchers in the ECE field have increasingly recognized the importance of enabling children's voices to be expressed and to be heard. This appeal is also applicable to children's voices on their digital experiences, which is currently a missing perspective. However, finding an appropriate way to explore their voices is still a matter that needs to be addressed. Among other approaches, I see the value of a dialogic approach to enabling children's voices be heard. In the chapter that follows, I introduce Bakhtin's dialogic methodology as a theoretical framework that underpins my study.

Chapter 4

A dialogic methodology for investigating competing voices

As stated in previous chapters, there are competing voices of the parents and educators from different cultural backgrounds about preschool children's use of touch screen devices. I argue that touch screens are virtually absent from research studies, with the exception of moral standpoints held by educators which are linked to confusion about the entertainment function and learning possibilities of touch screen devices. Furthermore, there is no evidence of the perspectives of children in the research.

The complexity of understanding competing voices led me to Bakhtinian dialogism. This argues that voice is plural and can be understood through genre (a combination of language forms and their meaning in dialogue), in a deeply social and aesthetic way, involving the dialogic interaction between two or more co-beings. In this way, Bakhtinian dialogism is an ideal methodological lens for my study because it provides a means of engaging with the competing plural voices that shape children's touch screen experiences through genre. Additionally, Bakhtinian dialogism provides a way of incorporating children's voices, which have otherwise been unheard in this discourse, as equal voices among others, and prioritising the voices of young users themselves. I argue for the methodology of Bakhtinian dialogism as an effective route to understand competing voices concerning Chinese children's touch screen use across contexts for both cultural and methodological reasons. The detailed rationale for this choice of methodology is presented in the following section.

4.1 Why Bakhtinian dialogic methodology?

4.1.1 Bakhtin and the Chinese cultural context

Bakhtin's ideas are relevant to this study due to the cultural emphasis I adopt in relation to Chinese learners and their families.

There has been a longstanding relationship between the work of Bakhtin and China. In the 1950s, the former Soviet leader Stalin visited China. Chairman Mao Zedong called on Chinese people to study the Soviet model. At that time, Chinese books were introduced to the USSR⁹, and Bakhtin used Chinese literature in his classes at University to provoke his Russian students. In the 1990s, there was intensive interest in and debates about Bakhtin in the cultural and literary theory circles in China. In 1998, Bakhtin's complete works were first published in Chinese in a total of six volumes, while they had not yet been published in Russia, the author's home country. The Chinese version of Bakhtin's complete works was republished in 2009 with a new volume and in 2018 with the complete works of 9 volumes. Today, there is still no English version of Bakhtin's complete works. Bakhtin's complete works are still inaccessible to the western world. Therefore, Bakhtin has a special influence in China.

Studies on Bakhtin in China fall into three stages:

- i) Stage 1 (from the 1970s to the mid-1980s): an initial understanding of Bakhtin - starting with the teaching of and research on foreign literature in colleges and universities;
- ii) Stage 2 (from the mid-1980s to the mid-1990s): further understanding of Bakhtin - probing deeper into studies on Bakhtin and his literary theory;
- iii) Stage 3 (from the late 1990s to the 21st century): polishing the jade of this hill with stones from other hills - the practice of and dialogue with Bakhtin's theories. For decades, there have been many academic studies on Bakhtin and a large number of followers of Bakhtin in China. New areas for academic study of Bakhtin have been observed in each of these historical periods.

As can be seen, Bakhtin's dialogical theory has been very popular in China for decades. There are a number of reasons for the popularity of Bakhtin's theory in contemporary China. The first reason, is that Bakhtin's dialogical theory resonates with ancient

⁹ USSR: officially the Union of Soviet Socialist Republics, or the Soviet Union, was a federal socialist state in Northern Eurasia that existed from 1922 to 1991.

Chinese philosophy, so that there is a special cultural soil that fosters its acceptance.

Correspondences include:

- i) Ancient Chinese philosophy originated from the '*Contention of a Hundred Schools of Thought*' (which occurred during the Spring and Autumn Period), which is exactly the notion of '*heteroglossia*' that Bakhtin proposed;
- ii) The classic book - *The Analects (Lunyu)* - of Confucianism (Chinese mainstream philosophy) was written in the form of dialogue;
- iii) The '*Dialogue*' of Bakhtin's theory has commonalities with the spirit of '*Harmony and Diversity*' which is at the core of Chinese Confucian philosophy and culture;
- iv) Both Confucian and Taoist philosophy advocate principles such as '*Teaching without words*', and '*Actions speak louder than words*'. These beliefs can also be found in Bakhtin's notion of '*hidden dialogue*' and his claim that '*voice is plural and has multiple forms*'.
- v) Bakhtin's '*Carnavalesque*' is in harmony with the concepts of '*free wandering*' or '*being carefree*' in Chinese Taoist thought.

All of these commonalities meant that there was a spiritual resonance with the collective unconscious of Chinese people when Bakhtin's theory entered China. Correspondingly, there is a strong argument for both the interpretative suitability and appropriateness of Bakhtin's theory for exploring issues in the Chinese cultural context.

Secondly, Bakhtin's theory is also well suited to the needs of the contemporary Chinese cultural transformation. Bakhtin's theory has practical advantages in solving such problems as the counter-distribution of the discourse, the response to cultural transformation, and the distraction of critical discourse.

In summary, due to the cultural emphasis I adopt in relation to Chinese learners and their families, I argue for the methodology of Bakhtinian dialogism as an effective route for engaging with and understanding the voices of Chinese children and their families across contexts.

4.1.2 Methodological considerations: Voices and Bakhtinian dialogism

Voice in this study includes all kinds of language, verbal and nonverbal, and its use, including intonation, which reflects the values that underlie a conscious utterance. Dialogue refers to the interaction between two or more voices with an answerable feature. Dialogism is a study of subjectivities encountering one another in a social act. The opposite of dialogism is another concept, monologism, which is a singular way of engaging in dialogue and interpreting meaning that does not pay attention to alternative approaches or perspectives. There is only one voice in a monologue but two or more voices in a dialogue. The theoretical concept of multiple voices is an optimum fit for my study which seeks to understand the competing voices surrounding Chinese preschool children's experiences of touch screen devices in a New Zealand Early Childhood Education (ECE) setting from the perspectives of New Zealand teachers, Chinese caregivers and the children themselves. There are different methodological lenses through which Chinese preschool children's use of touch screen devices in New Zealand ECE settings might be viewed. Among various methodologies, Bakhtinian dialogism is seen as particularly apt, because it entails a study of subjectivities encountering one another in the social act (Holquist, 2002; Linell, 2003; White, 2009). From a Bakhtinian view, dialogism is a necessary drive to meaning (Mackinlay, 2002). As Bakhtin claims, 'voice can make meanings but only with others, at times in chorus, but at the best of times in dialogue' (K. Clark & Holquist, 1984). This dialogic feature of the voice in Bakhtinian dialogism explains the connection between voice, meaning and dialogue.

This dialogic interpretation of voice is of particular importance to me as it explains my choice of Bakhtinian dialogism as the platform for my investigation. In my investigation of competing voices surrounding Chinese preschool children's use of touch screen devices in a New Zealand ECE setting, Bakhtinian dialogism provides a way of understanding children's voices as plural in their multiple forms (verbal and non-verbal) in a deeply social and aesthetic way. Bakhtinian dialogism enables me to explore further the hidden voices that influence children's voices in the dialogic interaction between the child and others (teachers, parents, peers), both socially and culturally, when they engage with touch screen devices. The Bakhtinian approach also

offers a route to understanding competing voices through children's use of multiple genres (a combination of both content and form) in their use of touch screen devices.

4.2 A review of Bakhtinian dialogism as a methodology in ECE studies

While Bakhtin's scholarship has been increasingly applied in discourses in education since the early 1900s (Freedman & Ball, 2004; Matusov, 2007), a dialogic approach to investigating 'voice' was first introduced into ECE settings by White (2009) in her research on noticing and recognising the metaphoric acts of toddlers' learning by responding to multiple voices. She defined dialogism as:

'A unifying means of exploring voice and its authorship - its lived construction, enactment and interpretation by another.' (White, 2009)

To better understand voice from a dialogic standpoint, White (2009) adopts the Bakhtinian notion of '*polyphony*', which refers to a chorus of voices who speak for themselves. The voice is viewed as plural, complex, and is always prepared to interact with and be interpreted by others. In order to explore the plurality of voices, White (2011) expands on the idea of 'seeing' as a dialogic endeavour, which goes beyond singular monologic parameters, into the polyphonic terrain of speculation, uncertainty and reflexivity. The Bakhtinian notion of *polyphony* is also adopted in De Vocht's (2015) study, as already noted in section 3.3.2, which explores the dialogic interactions between preschool children and their teachers in New Zealand ECE settings. Vocht used the Bakhtinian notion of polyphony to explain how each person accesses multiple voices in response to an encounter, which is shaped simultaneously by unique previous experiences and the encounter itself. She argued that polyphony can open up a view of dialogue as open-ended and providing different possibilities in educational dialogue, and can allow for more meaningful responses by children and more respectful listening from teachers. Vocht contributed to dialogic methodology in the ECE research field by developing a methodological approach of dialogic reflexivity in examining children's everyday experiences and teacher-child interactions. This approach is very useful in my study for exploring children's voices based on videos of their everyday experiences of touch screen devices.

This dialogic feature of voice is of particular interest to me because ‘voices’ lies at the heart of my thesis, and my investigation of voices is not of a single voice but plural, dialogic and more complex voices in which competing voices can be manifested. The complexity of voices on children’s touch screen use requires particular attention because firstly, to date, it has not been examined. Secondly, attention to this provides a way of understanding competing voices in a more complex and subtler way, and responding to voices in multiple forms socially and culturally. The attention to competing voices in the dialogic approach provides the methodological lens and approach needed for my study.

Another important Bakhtinian concept relevant to my study is that of the ‘*chronotope*’ which refers to the ‘setting’, considered as a spatio-temporal whole, or an optic for discourses and their values. Chronotope was applied by White (2014) in ECE research. She argues that dialogism provides a means of examining thresholds between contexts in a wider chronotope. The concept of the chronotope, which emphasizes meaning-making in different spaces, fits my study very well because it enables me to examine voices in wider spaces (eg. homes, ECE centres, and the space in between), in which competing voices concerning children’s touch screen use can be produced, alongside their rich meaning-making.

Another study that has methodological relevance to my research is L. E. Cohen (2009)’s work based in the USA, which uses the concept of ‘*heteroglossia*’ (referring to multiple voices, or the battleground between different social forces) from dialogic theory to understand how children appropriate social and other rules in pretend play and use a variety of ‘voices’ in their role enactments. Cohen identified three facets of children’s voices during their pretend play: i) children appropriated and assimilated others’ words in play; ii) children engaged in a heteroglossic world as they used different ways of talking to enact play roles; and iii) children engaged in a struggle between the authoritative discourse, which refers to ideas that are passed down to us and are fixed, and the internally persuasive discourse, which involves ideas people bring from their personal experience of life. Children’s struggle between the authoritative discourse and the internally persuasive discourse, noticed in Cohen’s study, is of particular interest to

me in my investigation of children's voices among the voices of authoritative others (eg. teachers and parents) with regard to their touch screen use.

In a later study done in 2015, L. E. Cohen (2015) demonstrates how 5-year-old children borrow voices from others during their engagement with block play, and in doing so, explore a variety of voices in the social production of meaning. Cohen's (2009, 2015) employment of Bakhtinian dialogism shed light on children's borrowing of voices from others in a heteroglossic world, which can be applied in my study of the influence of the voices of parents and teachers on the voices of children during their engagement with touch screen devices.

Other studies have examined the importance of a cross-cultural context, which has particular relevance to my study. Bakhtin claims that no 'living utterance' can be understood without taking into consideration the historical, political, social and cultural context or moment in which that utterance is made (Watson, 2000). Magowan (2000), Watson (2000) and Mackinlay (2002) demonstrated the value of applying Bakhtin's dialogic imagination to the polyphony (the coexistence or plurality of voices) of cross-cultural contexts. This again fits my study of a cross-cultural context of China and New Zealand, in which competing voices can be better understood when the social and cultural background of all parties is considered.

To summarise, there are studies that have already applied dialogic methodology in ECE research. It is evident that the Bakhtinian dialogic approach holds possibilities for dialogic interactions between children and others (e.g. parents, teachers and peers) in ECE, and is a very effective way of understanding voice in its multiple forms in different spaces, both socially and culturally. A dialogic approach to voices in the ECE setting was therefore adopted in my study to investigate multiple and competing voices relating to Chinese children's experiences of touch screen devices in New Zealand ECE settings. I argue that dialogism can be a very effective methodological lens to investigate the competing plural voices in different spaces (such as at home, in the early childhood centre, and the space in between), in a cross-cultural context.

4.3 Applying Bakhtinian scholarship in my study

4.3.1 The plurality of voices: Understanding voices in multiple forms

Bakhtinian dialogism provides new opportunities to understand children's voices and agency, in that it allows researchers to look beneath the complex layers of voice, and into the subterranean lives of children. Bakhtin (1986) claims that, 'I hear voices in everything and dialogic relations among them' (p. 169). In Bakhtin and Emerson's (1993) view, voice is plural; it is never singular. Even in an utterance or a word, audiences can hear two or more competing voices. Bakhtin emphasises not only what people said (content), but also how they said it (form), who said it (subject), and in what circumstance they said it (context), so a Bakhtinian understanding of voices is social and cultural, both verbal and non-verbal (including gestural forms of embodied expression). The plurality of voices in a Bakhtinian view therefore enables me to examine the competing voices that shape children's touch screen experiences, and to 'see' children's voices in their non-verbal, gestural forms of embodied expression.

Bakhtin claims that voice has multiple forms; it is far more than what is spoken (Wall & Junior, 2019). Dialogism begins with the communicative act, not just in spoken words but multiple forms of voices. As Bakhtin states:

'The exceptionally keen sense of one's own and the other in the word, in style, in the most subtle nuances of style, in intonation, in the speech gesture, in the body (mimic) gesture, in the expression of the eyes, the face, the hands, the entire external appearance, in the way the body is carried....an intense interaction takes place between I and other.' (Bakhtin, 1984, pp. 294-295)

Dialogism assumes gesture is a form of voice. The relevance of gestural forms of voices for my study is that there are multiple gestural expressions when children use touch screen devices, either alone or with others. It follows that it is important for my methodology to include gestures as a form of voice in examining the voices of children, especially preschool-aged children whose gestural voices are very rich compared with their spoken voices.

Some studies have explored gesture as a linguistic mode (Kendon, 2004; Mittelberg, 2006; Müller, 2007; White, 2009) by analysing physical body movements as language. Also, a dimensional view of gesture has been introduced, including an investigation of

the semantic, pragmatic and poetic potential that may be embodied within an act (Kendon, 2004; McNeill, 2005; Roth, 2001). As Mittelberg (2006, p. 2) explains, ‘spontaneous communicative gesture, which is inseparable from human interaction and social space, is a rich source for insights into the sociocultural situatedness of both cognition and communication’. Kendon (2004) proposes that gesture is utterance in a visual form. Seitz and Beilin (1987) observe that the use of gesture ‘places the participants in a closer relationship (a more intimate one) to each other by pointing out the shared experiences and/or cultural framework and by a more pronounced expression and experience of emotions (p. 37-38).’ Roth (2001) highlights the conflicting theories around gestures in educational research, where gestures are seen to either accompany, replace or package verbal language, rather than viewing gesture, and other modes of communication, as a central part of all language. White (2009) examined young children’s facial gestures in her investigation of toddler metaphoricity. The studies noted here show that gesture can be considered as a significant form of voice both in its own right and alongside words. This scholarship will be applied in my exploration of preschool children’s voices, examining not only what is spoken, but also rich expressions through their gestures. Given the plurality and the multiple forms of voice, my investigation of children’s voices during their engagement with touch screen devices will therefore include plural feature and multiple forms, both verbal and non-verbal, both spoken voices and gestural expressions. The research methods that will be employed to identify the multiple forms of children’s voices are outlined in Section 4.2. In addition to studies on gesture, some studies look at the close relationship between voice and agency. Bakhtin (1984) explores the lived experience of agency for particular people relating to specific others in and through cultural systems. For Bakhtin, there is no individual without culture, so the understanding of the agency of an individual is related to their ability to use and change the structures, rules, and resources of their culture, while the agency of culture is manifested in the reproduction of these structures and rules through individuals. This conceptualization places the agency of the individual in their cultural context which can be exercised through expressing their voices. Such an understanding is well suited to the aim of my study to explore children’s

ability to change the rules made by teachers in the ECE setting about their touch screen use.

4.3.2 Hidden dialogue: Seeing the voices of an (in)visible speaker

As has been discussed, the plurality of voices allows researchers to ‘see’ children’s voices in the non-verbal forms of their embodied expression; furthermore, it enables researchers to ‘see’ the ‘hidden dialogue’ between the child and an invisible speaker in children’s dialogic interaction with others (e.g. parents, teachers and peers).

Hidden dialogicity (or hidden dialogue) was described in Bakhtin’s book, *Problems of Dostoevsky’s Poetics* (Bakhtin, 1984), as follows:

‘Imagine a dialogue of two persons in which the statements of the second speaker are omitted, but in such a way that the general sense is not violated. The second speaker is present and invisibly, his words are not there, but deep traces left by these words have a determining influence on all present and visible words of the first speaker.’ (Bakhtin 1984, p.197)

Bakhtin (1984) claims that ‘hidden dialogue’ is a form of double-voiced discourse where ‘the other’s words actively influence the author’s speech, forcing it to alter itself accordingly’ (p. 197). Bakhtin’s notion of hidden dialogicity supposes the protagonist is half one’s own and half someone else’s. The concept involves a type of discourse which entails a struggle between two equally valid voices within an internal dialogue. Hidden dialogicity, characterised by an invisible speaker, allows children to take a metacognitive perspective that leads them to internalise the other speaker’s words. To Wertsch (1991), for example, hidden dialogicity supposes that ‘the meaning of a child’s utterances reflects the outside interference of another’s voices’ (p. 91). Bakhtin’s notion of hidden dialogicity has also been used in ECE research. For example, as already noted in section 4.2, Cohen (2015) analysed pre-schoolers’ use of double-voicing in the context of block play and found evidence of hidden dialogicity. Cohen claims that hidden dialogicity accounts for children’s voices directed to self in children’s play. Similarly, a recent study by White (2020a) highlights how young children in ECE settings navigate the rules while upholding their priorities for play. Where children’s

voices come from and how their voices are formed are not well understood; however, these visual explorations are beginning to shed some light on the complexities of children at play in ECE contexts (Cao, 2020; Jennings-Tallant, 2020).

The idea of the invisible speaker is important in my research study where I attempt to make children's voices better understood by identifying the invisible speaker who has exerted an influence on the expression of their voices. In this process, my aim is to uncover how others' voices actively influence children's voices. Hidden dialogicity has been selected within the dialogic methodology for the purpose of exploring the plural expressions of children's voices, both verbal and non-verbal, toward both self and the invisible speaker. In this study, the hidden dialogue can reveal the influence of adults' voices on children's voices with respect to the ways in which children play when using touch screen devices. This means that not only are children's voices their own, but they can also sometimes be the expression of someone else's voice, a voice conveyed by an invisible speaker that is present in a child's internal dialogue. During such an internal dialogue, contradictions, conflicts and psychological struggles are experienced as an internally persuasive authoritative discourse and an authoritative discourse that become the subject of the centripetal and centrifugal forces that compete for priority, as can be seen in Redder's (2020) work on dialogic self-study. During this interplay, competing voices can be discerned in this multi-voiced (heteroglossia) arena.

4.3.3 Chronotope: A landscape for investigation

Bakhtin uses Einstein's word 'time-space' as a reference for his concept of 'chronotope', which refers to time (temporal) and space (spatial) dimensions that frame the way experience can be understood. In his literary dialogic theory, Bakhtin defined chronotope as the unity of time and space where events occur. Drawing on Bakhtin's (1981) philosophy, Holquist (2009) suggests that chronotope lies at the centre of knowledge, since what is valued in one place and time may differ from what is valued in another. The coordinates of time and space, according to Holquist (2009), are both ideologic orientations and ways of understanding human experience. White (2013) states that every chronotope is characterised by its boundaries, which are determined

by “the specific views that society attached to them in any particular space and time” and which resist fusion (p. 17). Chronotopes are seen through encounters that orient their meaning and value. As such, chronotopes underpin all activity, offer a way of understanding experiences and recognise the systematic unity of culture (Morson & Emerson, 1990). Thus, chronotopes provide a “means of penetrating dialogic understanding through artistic appreciation of other” (White & Peters, 2011, p. 4).

K. Clark and Holquist (1984) explain that the intersection of different chronotopes acts as a threshold; a bridge between disparate worlds. For Bakhtin (1981), such thresholds offer opportunities for creative exchange as it is there that “the sphere of meaning is accomplished” (p. 258). White (2014) adopts Bakhtin’s concept of chronotopes in ECE settings, where the social experiences of infants and toddlers are characterised by negotiated social spaces that take place between, within and across education and home settings (Carroll-Lind & Angus, 2011). In her research, White (2014) explores this new normality as a set of chronotopes occupied by infants and toddlers (and teachers) in relation to people, places and things. Matusov (2015) applied chronotope to education and argued that chronotope is made up of three factors: space, time and axiology.

Drawing on Bakhtin’s philosophy, I was able to explore two specific chronotopes in which my study was situated, and the generalised impact of discourses on the interpretations that could be made. The chronotopes in my study of Chinese children’s touch screen experiences in a New Zealand ECE setting include i) the New Zealand ECE setting, ii) homes of Chinese immigrant families living in New Zealand, and the threshold spaces in between where digital touch screens are utilised.

In the New Zealand context, early childhood education includes those services available for the education and care of children aged 0-5 years. There are many types of ECE services or centres. Despite their distinctive contexts and features, all licensed and chartered ECE services in New Zealand are required to operate their programmes in line with Te Whariki (NZMoE, 1996, 2017), the national ECE curriculum. Due to the large number of immigrants from all over the world, New Zealand ECE has a diverse cultural context, and one of the largest groups of immigrants comes from China (Statistics New Zealand, 2015). As a minority living in New Zealand society, Chinese

immigrant families hold views of childrearing that are deeply shaped by Chinese culture. These different spaces and their values might bring some competing voices to the ECE setting because what is valued by a Chinese immigrant family (one chronotope in my study), might not have the same weight in the ECE centre (the other chronotope in my study), and vice versa. The Bakhtinian concept of the chronotope provides me with important insights into children's touch screen use across different spaces and values. The genres (or language styles) used by a child were selected as an analytic platform for investigation, because genres can express both verbal and non-verbal forms of embodied expression. As such, I was able to move beyond an emphasis on touch screen use as a singular linguistic proposition to multiple genres, within which discourses or multiple competing voices reside, as socially imbued, embodied, and interpretive utterances.

In my study, the voices of the Chinese family and New Zealand teachers meet when a Chinese preschool child attends a New Zealand ECE centre. In this encounter, which orients their meaning and value, chronotopes can be seen. The coordinates of different chronotopes are both ideologic orientations and ways of understanding daily experiences. As such, chronotopes underpin all activity and offer a way of understanding Chinese children's experiences of touch screen devices in the New Zealand ECE setting.

Therefore, in this cross-cultural study, the chronotope can also represent a series of ideologic spaces surrounding children's experiences of touch screen devices in a different cultural context. According to Matusov (2007), Bakhtin offers a specific pedagogical challenge by suggesting that an authoritative voice is a necessary part of the educative process – yet for progressive learning to take place students must have enough freedom to explore and embrace diversity: he comments that '... a strong, powerful voice and authorship is rooted in a discursive community, which the voice addresses and to which it must respond' (Matusov, 2007, p. 218). I argue that the extent to which the children in this study were able to recognise and respond to both forces involved a historical and contemporary battle between the private world of the individual teacher or parent and the public world of societal demand, that is, the chronotope representing the ideological spaces that surround utterances.

4.3.4 Heteroglossia: An analytic framework

Bakhtin (1981) described the concept of heteroglossia as ‘another’s speech in another’s language, serving to express authorial intentions but in a refracted way’ (p. 324). Bakhtin claims that language is ‘always populated – overpopulated – with the intentions of others’ (p. 293), and that this multi-voiced interplay is determined by the particular social context in which it occurs. Heteroglossia represents the ‘concrete, living totality’ of language in everyday social events (Bakhtin, 1984, p. 181), and it represents social and linguistic diversity – the multiple voices that people use in social and cultural life – and their corresponding values and views of the world. From a Bakhtinian point of view, linguistic and social communities are the sites of a struggle between centripetal and centrifugal forces. Centripetal forces seek to unify and establish one common language for everyone to utter, while centrifugal forces regard common understanding as a problem and attempt to voice multiple languages that represent social and linguistic diversity. Heteroglossia brings to light the fact that cultures, societies and individuals are diverse rather than unified.

A number of researchers have operationalised these ideas for ECE. White (2009) examines heteroglossia and its relationship to metaphoricity and invites a re-conceptualisation of language use in education. In her study of block play in 2009 (as noted in section 4.2), L. E. Cohen (2009) analyses Bakhtin’s discourse typologies, using video data, to evaluate children’s utterances. Rosen (2015) focuses on the presence of heteroglossia in responses to play that has violent themes and points to the importance of the heteroglossic space of play. ECE researchers are now beginning to recognise the complexity of language use for children who draw from increasingly pluralistic contexts, which influence their education. Children’s voices in their experiences of touch screen devices have not been examined in a way that locates the children themselves within the wider heteroglossic arena alongside the multiple voices of their parents, teachers and peers inside and outside the centre.

Bakhtin used the concepts of centripetal and centrifugal forces to explain the constantly struggling meaning-making process and convey the sense of creative tensions. These

two forces are used in my study to express the idea that these multiple voices and perspectives will interact, sometimes even conflict, with each other in the construction and destruction of meaning, as language is strategically employed by individuals in social and cultural contexts.

Among the heteroglossic voices, a dominant voice can also be heard. Bakhtin and Emerson (1993) argued that every voice has an equal right to be heard in the dialogue. In addition, Bakhtin allows for the development of a critical language to pinpoint and foreground those historical and social moments when the voices of the dominant and oppressive voice comes into conflict with the voices of those who resist (Bauer & McKinstry, 1991). The equality of each voice and a critical attitude towards the conflict between the dominant and resistant voices suggest a way for me to invite children's voices, which are currently muted in this discourse. My aim is to include children in this chorus, not as immature, weak and inferior voices, but with the same position and value as all other voices.

In this study, heteroglossia was used to understand children's voices on a more subtle level, through observational work performed in relation to the invisible speaker and the multiple voices - the influence of adults' voices on children's voices - in the different genres which children use when they play using touch screen devices.

4.3.5 Genre: A route to understanding competing voices

In bringing form and content into play in dialogic research, Bakhtin (1986) advocates an emphasis on genre as the 'speech plan or speech will, which determines the entire utterance, its length and boundaries.' The term 'genre' can therefore be interpreted as conventional forms of language that are denoted by the selection of a particular form of communication as a means of social orientation (Bell & Gardiner, 1998). Brandist (2002) expresses a strong opinion on the basis of Bakhtin's later work and describes the genre as 'discursive will'. In my study, genre occurs in the dialogic act of touch screen use and is used strategically by the child to orient themselves in relationships with teachers, parents, peers, the research and the devices when he or she is experiencing touch screen devices. From a dialogic view, the key point is for the child

to master the genre (generated and mastered by the child when they communicate), so that they can strategically ‘enter into the flow of speech communion’ described by Emerson (1995). Bakhtin offers genre as a central analytical device which fulfils all the requirements of both form and content by exploring the nature of the act itself, and the perceived choices made by its speaker in the way it is delivered (Renfrew, 2017). Genre offers a way of investigating the interpretation of acts that take place in a detailed and socially discursive manner. As Bakhtin and Medvedev (1985) conclude, genre is an “aggregate of the means for seeing and conceptualizing reality” (p. 137).

Genre analysis has been used by a growing number of researchers in education (Linell, 1998), to examine the genres of teaching (Crossley, 2007; Moen, 2005; Rockwell, 2000) and learning with school-aged children (Marbin, 2006). The language of preschool children has also been investigated using genre as a primary analytical category (L. Cohen & Uhry, 2007; Ishiguro, 2009). These authors found genre a very useful analytical unit and concluded that children are highly skilful at moving between genres depending on their contexts and that the associated dialogue alters (in content and form) in different social contexts. Cohen and Uhry (2007) highlight playing with blocks by pre-schoolers as a specific genre in its own right, which, when learnt, facilitates entry into the activity itself. A similar phenomenon is evident in a study of 3- to 5-year-olds by Sawyer (2013), who found that different styles of language, which he calls role voicing, were employed across genders and age groups in play contexts. What is of particular interest for me is the important point made by Rockwell (2000) that diverse speech genres in play are held together as a single performance, arguing for a consideration of multiple genres within utterances. These studies show that, for my research inquiry into competing voices in children’s touch screen use, genre can be an effective way of understanding children’s voices and competing voices.

For my study, it was a difficult decision to choose ‘genre’ as my unit of analysis. Most contemporary Bakhtinian researchers use ‘utterance’, which refers to answered language and is an element of a language chain, as a central unit of analysis in dialogic research (Bell & Gardiner, 1998; Brandist, 2004; Burwell, 2003; Marjanovic-Shane & White, 2014; Redder & White, 2017; White, 2009). However, for the purpose of

exploring children's voices and competing voices in my thesis, I chose 'genre' as my unit of analysis.

To explain the reasons for this selection, I begin with the question 'why can utterance not serve as my unit of analysis'. Here I draw on Roth's (2007) assertion that the whole idea behind developing a minimal unit is to theorize mind, culture, and activity in terms of an irreducible theoretical entity that cannot be broken down into elements. However, there is also the case that some structures are smaller than the minimum unit (of analysis) but they cannot be investigated on their own because they agree with each other; the utterance is such an example in my study. In my study, I examine voices not only on what has been said (utterance), but also in a wider chronotope, and consider how these voices have been addressed across different spaces and how multiple voices exert influence on each other. These different spaces are an important factor in my study of children's touch screen use as they could produce different meaning-making and values. Unfortunately, utterance fails to deal with the multiple language forms and moving between different spaces and cultural contexts. That is why my unit of analysis could not be utterance.

Then I turned to the question 'why is genre selected as my unit of analysis'. The purpose of the unit of analysis is to provide a means of entry into a research phenomenon without separating the parts from the whole (Crossley, 2007; Roth, 2007; Vygotsky, 1987). Crossley (2007) states that genre analysis is an explanation of why language is used differently in specific cultural contexts. This interpretation is of particular interest for me because I engage with touch screen use in a wider chronotope (as already defined in section 4.1.4 as the unity of time and space where events occur). The application of genre analysis can help me to explore the complexity of voices in a wider setting. It firstly relates to the question of how different ways (such as in different times, spaces and cultural contexts, or with different apps) of using touch screens create different dialogues, or construct certain kinds of dialogues. Secondly, the question concerns how a child strategically employs his or her voices when moving among different contexts to align himself or herself in different relationships with teachers, parents and peers. The first reason relates to the generation of genres, while the second relates to the use or mastery of genres. I also assume, as Connor et al. (2002) and Crossley (2007)

assumed, that genres have cultural expectations, so when a child moves between different cultural contexts, different genres must be developed or some relearning of the same genre must take place to negotiate the cultural differences correctly. In this way, to engage in dialogue with different cultural groups presupposes the need for the child to use different genres or adjust the genre to suit a particular cultural group.

The use of genre analysis in this study offered me a way of considering children’s experiences of touch screens socially and aesthetically as multiple genres within an everyday event of utterance in a heteroglossic arena, for consensus and dissensus, to understand the multiple genres children use in a wider chronotope. Using genre as an analytic category enabled me to move beyond the different voices used by the child in different contexts, which I believed held great potential for me to explore the meanings of various forms of communication that take place in children’s everyday experiences of touch screen devices in a formal ECE setting, at home and in the space between.

4.3.6 A methodological model

The relationship among key Bakhtinian concepts can be illustrated in this methodological model below:

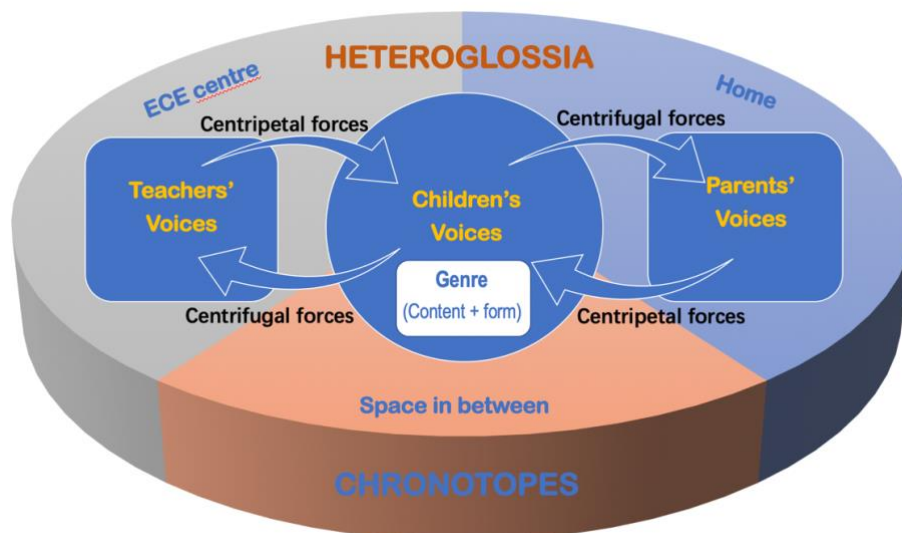


Figure 4.1: The methodological model

I use a three-dimensional model to express the concept of chronotope, which refers to a different time, a different space and their values. The chronotope includes the ECE centre space, the home space and the space in between. Heteroglossia (multiple voices) happens in this landscape, with children's voices in the centre, alongside teacher's voices and parents' voices. Centripetal forces and centrifugal forces are used to explain the constantly struggling meaning-making process and convey the tension between the unified voice and the multiple voices. Genre (a combination of content and form) is used as a unit of analysis in my study through which competing voices play out.

In sum, I consider young children's experiences of touchscreen devices as an everyday event, discovered through children's employment of genres in different chronotopes within a heteroglossic arena, with the children's voices at its centre, alongside the multiple perspectives of teachers and parents.

4.4 Summary

Bakhtinian philosophy enabled me to consider children's experiences of touch screen devices as genres within a heteroglossic arena for consensus and dissensus. As such, touch screen engagement can be viewed as a language act that exists and can be interpreted after its construction, as well as in its lived conception in time and space. In this way, the experiences of touch screen devices can be examined in this thesis as an aesthetic way of producing multiple voices and revealing different meanings. As a heteroglossic phenomenon, children's touch screen use can be understood in the context of multiple voices, with children's voices at its centre.

Based on Bakhtin's dialogic philosophy and further interpretation of the plurality of voice, I argue that dialogism is an effective methodological lens for my study. Dialogism can be an effective methodology to answer my research questions that are designed to explore children's voices and identify competing voices in relation to Chinese preschool children's use of touch screen devices in a New Zealand ECE setting. I therefore adopted a dialogic approach to my investigation throughout this study as it provided an opportunity to access the multiple, plural voices of children, parents, teachers, and my voice as a researcher, as these voices compete with each other in a

social and cultural context. The meaning of voices lies in the responses from and to others in dialogues. In this study, I attempted to go further, to explore the meaning-making of multiple voices by inviting all voices, verbal and non-verbal (gestural communication), within and between individuals, to come together consciously, in equal encounters in the cross-cultural context, instead of privileging or authorising any one voice over another.

This study highlights how Bakhtinian dialogism can be applied to explore the complex blurring of multiple voices regarding children's touch screen use, power relations among teachers, parents and children, and cross-cultural contexts where the voices of Chinese parents and New Zealand early childhood teachers are juxtaposed, counterposed and interwoven to generate something beyond themselves. In this way, Bakhtinian dialogism holds much promise for my work in examining the multiple and competing voices on touch screen use in a cross-cultural context of China and New Zealand.

The next chapter introduces a visual approach to 'seeing' the Voice(s) within the framework of the Bakhtinian dialogic methodology.

Chapter 5

A visual approach to ‘seeing’ the Voice(s)

As discussed in the previous chapter, I use the methodology of Bakhtinian dialogism to investigate competing voices surrounding Chinese children’s experiences of touch screen devices in a New Zealand ECE setting. In this chapter, I present a visual approach to ‘seeing’ the Voices. I then introduce my research design, approach to data analysis, ethical considerations, validity of the data and discuss my role and voice as a researcher. I end this chapter by revisiting my research questions.

5.1 ‘Seeing’ the Voices: Methodology and Approach

5.1.1 Bakhtinian dialogic methodology as a route to ‘seeing’ the voice(s)

A strong emphasis has recently been placed on visual observation as a source of understanding children’s learning in ECE (De Vocht, 2015; Redder & White, 2017; White, 2016). According to White (2016), ‘seeing’ has the potential to offer a perspective of ‘otherness’. From Bakhtin and Emerson’s (1993) perspective, as already noted (see section 4.3.1), voice is plural. The plural nature of ‘voice’ is of particular importance for those who conduct research with children, as this concept of voice allows researchers to ‘see’ children’s voices in the non-verbal forms of their embodied expression. This plurality furthermore leads researchers to ‘see’ the ‘hidden dialogue’ between the child and an invisible speaker.

To answer the question of how a dialogic methodology provides the means of seeing this non-verbal voice, we need to isolate the ‘form’ of gesture from its ‘content’. According to Bakhtin (1981), this is best achieved by understanding how the chronotope (see section 4.3.3) - the ideological space in which the gesture is expressed - comes to constitute the development of a dialogic genre in the actor. For instance, in an early childhood setting, children will act according to the ways in which ECE is conducted, the culture of the centre, and the idiosyncrasies of centre life. Their

knowledge of these different facets leads the children to orient their actions in multiple ways and according to the micro context in which each child finds themselves. This multiplicity of genres and the gestures that these genres produce demand that teachers learn to see the hidden voices in the ‘form’ of these gestures. Without recognition of the ‘multiple forms’ that children use, teachers will not understand the intentions behind children’s actions or their particular dialogic interactions. For instance, the interactions during children’s encounters in their touchscreen play, both verbal and non-verbal, often highlight the differences, diversity and conflict that characterise the presence of multiple voices. To begin to recognise the genres that characterise children’s actions, it is important to recognise the nature of such differences, diversities and conflicts. One way in which to see the ‘form’ in the gestures that populate such differences, diversities and conflicts, involves the need, according to Bakhtin (1981), to describe such conflicts as involving centripetal and centrifugal forces - phenomena Bakhtin describes as involving heteroglossia, the presence of multiple voices. In taking this analysis a step further, the researcher employs Bakhtin’s notions of heteroglossia and hidden dialogue to provide a means of understanding the competing voices that characterise visual encounters with others: children; the micro contexts in the centre; and the technologies in use, such as touch screen devices.

5.1.2 A visual approach to ‘seeing’ the voice(s)

Children’s voices have gradually gained the attention of ECE researchers (Canning et al., 2017; Fane et al., 2018; Spyrou, 2011). ECE researchers are increasingly advocating for a shift from research on children to research with children, which means children’s voices are actively sought and highly valued in research (Cao, 2020; Fane et al., 2018; Mayall, 2008; White, 2020b). Despite this widespread recognition of the importance of children’s active participation in research, the question of how to explore and understand children’s voices remains to be answered, especially for children in early childhood who are largely excluded from research ‘with’ them because of their lack of language literacy within the traditional definition (Irwin et al., 2012). As a result,

exploring methodological considerations and innovative methods, which go beyond this limitation, is essential for research with young children.

Bakhtinian dialogism offers new and important insights for this field by examining young children's language, not only in its verbal form but also in its non-verbal form. Given the multiple forms of voices, visual research methods such as video recording and reflective talking serve as ideal ways in which to examine children's voices, accompanied by their rich expression of body language, regarding their own experiences.

Within the dialogic framework, some scholars (White, 2009; Vocht, 2015) actively look for ways to elicit children's voices concerning their everyday experiences. As already noted, White (2009) introduced a polyphonic approach of examining toddlers' language use, which was adopted later by Redder (2019) in her study of teacher-toddler interactions in the New Zealand ECE context. Vocht (2015) also made an important contribution to dialogic methods of exploring children's voices in ECE, by using video to explore the dialogic interactions between children aged 3.5 to 5 years old and their teachers. These approaches, which employ the methodological lens of dialogism, are very effective for exploring children's voices and understanding the dialogic interaction between children and others. They provide valuable references for my exploration of dialogic methods in examining competing voices concerning preschool children's use of touch screen devices.

In this study, I introduce a visual approach that examines how children's voices express their own experience, using examples from my studies of children's engagement with touch screen devices in ECE. I set out to interrogate touch screen use in a social and aesthetic way, drawing on Mikhail Bakhtin's theory of *Dialogism* (Bakhtin & Emerson, 1993; White, 2009) because it is an effective method of exploring the plural competing voices and visualities that form preschool children's touch screen use in a diverse cultural context. Bakhtin's concept of heteroglossia introduces an analytical framework that can be applied readily to multi-voice discussions in a diverse social-cultural context, as it provides an opportunity for examining the extent to which voices are shut down or invited to join the chorus.

This dialogic framework combines traditional methods of ethnographic observation and interviewing with the introduction of participatory tools, including the use of cameras, touch screen devices, apps and games. Each of these participatory tools can serve as a means of evoking and reframing conversations, thus providing a rich basis for the examination of children's voices concerning their touch screen use. Through various genres that children employ, competing voices can be discerned, where multiple voices, as Bakhtin claims, compete with one another under the constant struggle of centripetal and centrifugal forces in the construction and destruction of the meaning-making process.

This visual method I chose, by focusing on competing voices across settings, provides a way to 'see' children's voices, not only for what they say, but also for what they express through their gestural expressions. The plural feature of voice offers possibilities not only to 'listen' to but also to 'see' children's voices by examining them in their different forms – verbal and non-verbal, and visible and invisible. I argue that there is merit in using a visual method to explore children's voices, as this method opens up possibilities for interpreting a visual moving image as a dialogic interaction. Video is used in this study, not only as a means of recording both verbal and non-verbal dialogues in different spaces, but also as a means of stimulating children's voices through reflective dialogue between the researcher and the child. By doing this, new meaning-making can be generated, and children's voices and perspectives can be further explored.

5.2 Research design

5.2.1 The chronotope

As explained in section 4.3.3, chronotope means the unity of time and space where events occur. Drawing on Bakhtin's thought, the chronotopes in my study of Chinese children's touch screen experiences in a New Zealand ECE setting include a New Zealand ECE setting, homes of Chinese immigrant families living in New Zealand, and the threshold spaces in between where digital touch screens are utilised.

The ECE service that provided the context of the research and the data collection was an early childhood centre located in Hamilton, New Zealand. This ECE service is licensed for 50 children, and caters for children aged from 3 months to 5 years of age. It is comprised of three separate areas: i) the room for infants aged 3 months to 2 years; ii) the room for toddlers aged 2 years to 3.8 years; and iii) the room for children aged 3.8 years to 5 years. My research was carried out in the third room, in which the teachers work alongside the children through a play-based curriculum. Teachers' jobs, according to the centre philosophy, are guiding children, facilitating their learning, and scaffolding them to take them to their next level of the learning journey. Teachers also teach Māori culture and language daily. The centre has Kapa Haka¹⁰ on Tuesdays and Thursdays; this session brings the centre together as one, to learn together, love and support one another. There are large outdoor spaces with natural grass; these spaces allow children to explore and create.

I used methods of interview, observation, journal and video recording to collect data. I firstly interviewed New Zealand ECE teachers and Chinese caregivers' views on children's touch screen use. I then visited the ECE centre and immersed myself in the field. I visited the ECE service intermittently for a total of 30 days, for at least 3 hours each day, spread over a period of 3 months. During my visits, I observed children's engagement with touch screen devices in the centre and wrote journal to record my reflective thinking on what happened and my understanding of children's touch screen use. I also video recorded children's touch screen use in the centre space and invited Chinese caregivers to film their children's touch screen use at home space. I then conducted reflexive talk with children using those digital videos as an impetus to explore children's voices.

5.2.2 Participants

¹⁰ Kapa Haka: A term for Māori performing arts and literally means 'group' for 'kapa' and 'dance' for 'haka'.

From Bakhtin and Emerson's (1993)'s view, every character expresses themselves through what they say. Therefore, in this thesis, what I observed and examined were thoughts, voices, arguments and the ideology of many different levels. That is to say, when I examined the participants in this research, my focus was not on the participant as an image, but on the participant as a pure voice, a valuable discussion, a full-scale argument. Every participant in this research explained themselves through the voice they uttered and the ideas they expressed. In the field of dialogic research, all kinds of voices from participants have equal status and value, including the voice of the researcher.

The participants in this research were:

- i) Child participants: 4-year-old preschool children from different cultural and language backgrounds attending this centre, with a specific focus on children of Chinese descent. A total of six Chinese children participated in this study - Jayden, Evan, Anna, Raine, Damian (Jayden's younger brother, 3 years old), Joe (Evan's younger brother, 3 years old). There are also three children of New Zealand cultural background - Melanie, Kevin and Alice who were involved in this study.
- ii) Teacher participants: Five teachers in this ECE setting.
- iii) Parent or caregiver participants: Two Chinese caregivers from two different families: one mother (of Evan and Joe) and one grandfather (of Jayden and Damian); both are main caregivers of their children.

The Chinese children were observed and video recorded by me (as the researcher) while they were interacting with touch screen devices, and they were also invited to share thoughts about their experiences.

The Chinese families were asked to film at least 25 minutes of video about their children's everyday usage of touchscreen devices at home and elsewhere. The parents and teachers were both invited to share their thoughts in separate interviews.

5.2.3 Devices

In this research, touch screen smartphones, iPads, and other touch screen tablets were used for children's touch screen experiences in the centre, at home and in the space in between.

In addition to touch screen devices, video recording devices were also used in this video-based dialogic research, including video recorder glasses (with a camera at the centre) and a mobile phone with a camera.



Figure 5.1: The video recorder glasses with a camera at the centre

The video recorder glasses were used as a tool to collect data in White's (2009) dialogic research and were also used in the work of her students such as Redder (2018) and Morgan (2015). Her more recent research has used Swivel tracking video and Virtual Reality Recording to capture two-year-old toddlers' dialogues (White, 2019). In this dialogic research, the recorder glasses were used in the ECE setting as they offer me the 'visual surplus' (a term in Bakhtin's theory, referring to the additional insights offered by another), and thus provide a means of accessing children's perspectives.

5.2.4 The data collection procedures

The data collection process in this study comprised three phases with subsequent follow-up transcription and data analysis.

5.2.4.1 Phase I: Interviews with Chinese parents and NZ teachers

In the first phase, I conducted interviews with parents and teachers. Firstly, I interviewed 5 teachers in this centre and 2 Chinese caregivers (from 2 different families) separately. My aim was to explore their perspectives on children's touchscreen use and

the role of adults, and to ask parents to tell me stories about their child's touchscreen use at home and in the space in between. The length of interview was around 30 to 60 minutes. The location of interviews for teachers was at the centre and for parents at their homes (See Appendix 5 & 6 the questions for interview).

After the initial interviews, some competing voices could be noticed from different viewpoints. I then conducted some follow-up interviews with teachers and parents, to probe these competing views. The reasons for conducting the follow-up interviews were i) to obtain responses from different and sometimes competing voices, as voice is answerable, from the viewpoint of Bakhtinian dialogism, and should be responsive to its previous utterance and be answered by respondents; and ii) to offer each voice opportunities to fully express or further clarify itself by placing it in a heteroglossic space to debate with other voices and at the same time to defend or modify itself. This was a process of a provocation to prompt respondents to refute, debate, and clarify their voices.

Through this debate and clarification in the follow-up interviews with Chinese families and New Zealand teachers, competing voices between Chinese families and the New Zealand ECE teachers were further elucidated about issues that emerged from the initial interviews.

5.2.4.2 Phase II: Fieldwork in the centre

After interviewing teachers and Chinese families, I immersed myself in the centre environment, observed and kept a journal of children's everyday playing and learning, got to know the children over a number of half days and video recorded children's use of touch screen devices in the centre. I also talked to the Chinese children's friends (when they were playing), because I believed that children were likely to talk more with their peers and friends in a familiar environment. I also collected videos and pictures taken by children because I consider that such pictures serve as an effective way to understand children's perspectives.

The space outside of the centre was also considered, by inviting the Chinese parents to take videos of their child's everyday experiences with touch screen devices and interactions at home and in the spaces in between.

With regard to the children's practices, I tried not to guide the children in their actions, but it could be predicted that children would use touch screen devices in their everyday activities because i) the reason for selecting the centre was that there was at least one touch screen device available in the centre and children had access to it (under context 5.2.1); ii) it was thought that it would be an interesting learning exploration for young children, and iii) cameras suitable for indoor and outdoor use were also available in the centre for all the children who wanted to be involved. My role as a researcher was to point the cameras at children's everyday events, then follow children around until they naturally gravitated to the devices, follow children's movements, capture children's verbal and non-verbal language, especially dialogic acts concerning their experiences of touch screen devices, and record the broader ECE environment.

5.2.4.3 Phase III: Reflexive dialogue with Chinese children

After working with the children in the centre, I spent two weeks selecting the videos and pictures. The selection was based on children's voices explaining what was interesting and important to them (from their perspectives), and on what might highlight the presence of competing voices and multiple perspectives (from the researcher's perspective).

After the selection of videos, I conducted a reflexive dialogue with the Chinese children, asking children to share their views. There is support in the literature for the use of reflexive dialogue. This approach was used by Rothman (1996) in addressing deeply rooted conflicts that are based on identity needs. Vocht (2015) applied dialogical reflexivity as a methodological approach in ECE research and it proved very effective in exploring children's voices during their dialogic interactions with teachers. In this study, I used reflexive dialogue to explore children's voices by initiating questions to explore further reflexive answers. The purpose of this process was to invite children's voices (new voices could be generated or constructed) to join these multiple competing

voices. This process was significant for me as it placed children's voices in an important position, which was not inferior to other voices. I used the video footage (selected in advance) as the impetus to ask the child to tell me what they was doing, and why they did that, in order to explore children's voices, views, and perspectives.

After these three phases, the process of transcription and data analysis followed. As the researcher, my job was to organize all the voices, alongside my own voice, and identify the competing voices and the new meaning-making in this chorus. The next section introduces the approach to and process of data analysis.

5.3 Approach to data analysis

Qualitative data analysis involves pursuing the relationship between categories and themes that emerge from the data in order to increase understanding of the phenomenon. In this qualitative study, my aim was to achieve better understanding of the competing voices surrounding Chinese preschool children's use of touch screen devices in a New Zealand ECE setting, homes and the spaces in between.

A Bakhtinian dialogic methodology was adopted to understand the competing voices and their underpinning values. Sullivan (2007) provides important insights for qualitative data analysis that uses dialogic principles. Sullivan emphasises direct and indirect discourse analysis of dialogue, paying attention to dimensions of atmosphere, subjectivity, authorial reflection and tension within texts. Based on the shaping nature of dialogue, the text supports researchers to interpret meanings from the sociological context of language, including speech genres, hesitations and irony, by identifying key moments in research data. Informed by dialogic principles, Hong et al. (2017) provide an example of how they went about embracing tensions as key moments for understanding multiple perspectives in educational dialogues. They provide a methodological toolbox based on double-voiced discourse. This qualitative data analysis was applied to my study. Using this methodological framework, an ethnographic approach, involving 30 days' close observation in the ECE centre, along with a visual method, involving video recording of children's touch screen use in the centre, at home and elsewhere, was adopted. Given the emphasis on multiple

perspectives of children's touch screen use across spaces, genre was used as the unit of analysis to explore children's dialogic interaction with others (e.g. parents, teachers and peers) across different chronotopes, such as the New Zealand ECE centre, the homes of Chinese families, and the spaces in between.

The data in this qualitative research were a large number of transcripts from videos and interviews, plus my description of children's rich non-verbal voices, which meant the data analysis was likely to be a muddled, vague and time-consuming process. To solve this problem, I used qualitative data analysis software NVivo, which helped me to analyse my data in an organised way.

Data analysis took place in phases as detailed in the sections that follow. These phases were:

Step 1: Analysis of multiple voices from teachers and Chinese caregivers, as well as their responses to their initially different voices;

Step 2: Analysis of children's language use (both verbal and non-verbal language) in the different genres when they experienced touch screen devices in the centre, at home and in the spaces in between, along with their language use during my observation of their play, learning and interaction with peers in the centre.

Step 3: Analysis of the video-based reflexive dialogue between children and myself.

Step 4: Analysis of the competing voices in a heteroglossic way, which occurred by placing all the voices (of teachers, caregivers, children, and me as a researcher) together and comparing them, in tandem with my own interpretative voice.

Genres were used as a unit of analysis to identify different forms of a child's language use when they interact with different people such as teachers, caregivers and peers, in different spaces such as the centre, at home and in the spaces in between. Heteroglossia were employed as an analytical framework to understand competing voices by discerning children's employment of various genres and putting children's voices in a heteroglossic arena filled with multiple competing voices from all participants.

5.3.1 Video/audio data coding

Bakhtin never specified the use of coding but he did advocate for an architectonic approach (Emerson, 1995; Walter, 2011), which meant breaking the language down into form (what it looks like) and content (its meaning). This suggestion fits precisely with my analysis of genre, which is a combination of form and content.

In this visual-based study, there are 10 videos of around a total of 30 minutes taken by me in the centre, 20 videos of around a total of 60 minutes taken by Jayden’s grandfather at their home and the space in between (the space in addition to the centre and home, for example, in the car), and 6 videos of around a total of 20 minutes taken by Evan’s Mother at their home. Using the NVivo software, I sorted all the videos into three categories according to chronotopes: i) in the centre; ii) at home; and iii) in the spaces in between. Under each category of chronotope, I then grouped the videos into another three categories according to heteroglossia (multiple voices of teachers, parents and children): i) children using touch screen devices with adults (eg. with teachers in the centre, and with parents in the home and the spaces in between); ii) children using touch screen devices with peers (eg. with friends in the centre, with siblings at home, and with friends and/or siblings in the spaces in between); and iii) children using touch screen devices alone (individual usage). Finally, I used genre analysis to examine i) content (what they said), and ii) form (how they said it) in each category. The categories of video data are listed in Table 5.1.

Table 5.1: Categories of video data for children using touch screen devices

Chronotope	Heteroglossia	Genre analysis
In the centre	Using with teacher	i) Content; and ii) Form
	Using with me (researcher)	i) Content; and ii) Form
	Using with peers	i) Content; and ii) Form
	Individual usage	i) Content; and ii) Form
At home	Using with caregiver	i) Content; and ii) Form
	Using with siblings	i) Content; and ii) Form
	Individual usage	i) Content; and ii) Form
Spaces in between	Using with caregiver	i) Content; and ii) Form
	Using with peers	i) Content; and ii) Form
	Individual usage	i) Content; and ii) Form

By analysing children’s use of various genres across spaces, several series of genres could be produced. Competing voices can be discerned through children’s strategic employment of genres, orienting themselves in and out of relationships with others.

After organising the video data, I then turned to the audio data from interviews with teachers and parents. I firstly divided these audio data into two groups: i) Chinese parents’ voices; and ii) New Zealand ECE teachers’ voices. By comparing these voices from parents and teachers and adding children’s voices to this heteroglossia, I summarized some key issues from these competing voices to make a comparison of multiple voices. The categories of audio data are listed in Table 5.2.

Table 5.2: Categories of audio data

	Key issues	Teachers’ voices	Parents’ voices	Children’s voices
1	For example: Role of touch screens			
2	...			
3	...			
4	...			

The next section presents each stage of my data analysis in detail.

5.3.2 Data analysis

5.3.2.1 Phase 1: Data analysis of the voices of parents and teachers

The original data came from the interviews with the Chinese families and New Zealand early childhood teachers about their attitudes to preschool children’s experiences of touch screen devices.

I transcribed all the interviews and compared these different voices, which all demonstrated distinctive personalities. My focal points in the analysis of the data were:

- i.) Who says what?
- ii.) What underpinning values can be discerned in a specific voice?
- iii.) How do these voices compete with each other?

iv.) What are the competing points?

v.) How do these competing voices affect each other? Is there a new voice generated when a person considers the voices of others and re-examines their own voice?

In this phase, my emphasis was on comparing these different voices, and identifying competing points. I limited my own voice at this stage in order to reduce my influence on the participants' original voices and allow them to express themselves fully. After I had summarized a number of conflicting points within these multiple voices, I conducted a follow-up set of interviews with the participants. At this stage, I showed them the different voices of others and invited their views on these sometimes conflicting voices. This process allowed every voice that was expressed to be answerable and have a chance for review and self-defence as well as deepen my understanding of each competing voice in this heteroglossic arena.

5.3.2.2 Phase 2: Data analysis of children's voices in their multiple forms

During this phase, the original data sources included:

- i.) Videos of Chinese children's touch screen experiences in the centre;
- ii.) Videos that the Chinese families recorded of their child's use of touch screen devices at home;
- iii.) My journal entries about my observations of children playing and learning in the centre;
- iv.) The artwork (for example, pictures) the Chinese children created (as a means of expressing their thoughts).

My focal points for analysis of the data in relation to children's touch screen experiences, when the child was experiencing the touch screen device, were:

- i.) What does the child say?
- ii.) Whom does the child talk to?
- iii.) How does the child express themselves apart from using words, for example, non-verbal language such as body movements, gestures, and body language?

- iv.) How does the child interact with others (teachers, parents, peers, siblings, devices)?
- v.) Whose voice is the dominant one (according to the child's prioritisation of a particular voice)? How do different voices express themselves and negotiate with each other? Are there new meanings generated during the interaction of multiple voices? If so, how are these negotiated?
- vi.) What are the rules, knowledge, and underpinning values that are shared among participants (spoken or unspoken) during their interaction?

This focus enabled me to recognize not only the content of the child's voice but also the form. Both when considered together constitute the genre (content + form) - my unit of analysis. This genre includes not only the dominant voice, but also the suppressed voices and how they express themselves and compete with each other in this heteroglossic area.

5.3.2.3 Phase 3: Data analysis of reflexive dialogues

This data came from the reflexive dialogues and represents children's voices in a deeper way, through prompting the child's awareness of multiple voices and then using a 'triggering - provoking a response' strategy to generate voices from the children. My questions to the children included but were not limited to: What were you doing/saying in this video? Why were you doing/saying this? What is interesting to you in this video? Have your parents or teacher shared this opinion before?

My focal points for analysis of the data in relation to children's voices were:

- i.) What does the child say? Why?
- ii.) What is interesting to the child? Why?
- iii.) What is the child's view of what parents or teachers say? Does the child agree with it or not? Why?
- iv.) How do adults' attitudes influence the child?
- v.) What is the child's attitude to their own touch screen experiences?

Reflexive dialogue was the point where analysis and data collection intersected because the reflexive dialogue was not only a source of data collection but also a site of analysis. Through the dialogic questioning and answering, my intention was not only to further explore children's voices and make them more clearly heard, but also to consider it as a way of making the child respond to what parents and teachers said, to achieve my goal of inviting children to join in this conversation with regard to their touch screen experiences.

5.3.2.4 Phase 4: Data analysis of all these competing voices

My aim in this dialogic thesis was to make it polyphonic and multi-voiced so that the reader could hear not only the voice of the researcher (my voice), but also the voices of 'others', participants and other relevant people. For this purpose, I gave each voice an equal chance to fully express itself and to respond to the other voices. Every voice is responsive to the preceding one and can be answerable by its successor. Then came the question of how to organize the voices dialogically and analyse them.

Firstly, I needed the participants to see and understand all the essential components. I strove not to omit any important aspects. This was important for my overall vision as the researcher, because keeping any aspects hidden would defeat the purpose of the dialogue in this study.

Secondly, the aim was to make the voices (of participants) interact with each other, and connect them in a dialogic relationship. For example, children, parents, and teachers needed to be introduced to each other's field of vision and consciousness, so that different ideas could meet each other face to face, and participants be allowed to engage in discussions and negotiate conflicts in a dialogic manner. At the same time, I, as the researcher, would take part in the same level of dialogue with all of them.

Thirdly, to move their thoughts through the maze of different voices, different language, and different gestures, I aimed to compare different ideological intentions and establish participants' differing intentions.

Finally, I did not reserve the right to reach a final conclusion as the researcher, but left it open to all readers. There is no first utterance and no last word; Bakhtinian dialogue views both children and adults as ‘becoming’.

5.4 Ethical considerations

Ethical approval was obtained by the University of Waikato on 9 March 2018. The code is FEDU019/18 (see Appendix F).

5.4.1 Entering the chronotopes

After ethical approval was granted by the University of Waikato confirmation panel, I approached my supervisor to support me in selecting a kindergarten. The criteria for selecting the kindergarten were that it had a diverse cultural context, with at least one or two preschool children of Chinese descent attending. After a suitable kindergarten was selected, I formally approached the head teacher, to inform her about my PhD research. An information letter, explaining my doctoral research, and an accompanying consent form (see Appendix B) were sent to the Head Teacher, inviting her to give consent:

- i.) for my research to be carried out at the centre setting; and
- ii.) for me to approach the children and their families; and
- iii.) to discuss the details of the fieldwork with me for 0.5 hours at the very beginning; and
- iv.) to participate in two sets of interviews (see Appendix 6: Schedule of Interviews), of 1 hour each; and
- v.) to agree to be video recorded during interviews; and
- vi.) for me to use any video recorded footage that she may feature in when video recording children’s experiences of touchscreen devices.

After the Head Teacher gave her consent, I also approached the other teachers in the centre for their approval. I then discussed with the head teacher the details of the fieldwork (such as the duration, and the starting date), and then worked with her to

recruit the children (see Appendix 1 & 2: Schedule of Conversation for recruiting children – the Chinese child & the other children) in the centre setting. I firstly recruited four 4-year-old children of Chinese descent by separately approaching each child and asking whether she or he was happy to work with me. A conversation (see Appendix 1: Schedule of conversation for recruiting the Chinese children) took place to inform the child about the fieldwork and invite them to give verbal assent to:

- i.) participate in my study, which means they use a touchscreen device or a camera in the kindergarten;
- ii.) allow me to use a camera to film their everyday experience of touchscreen devices and their voices on this experience;
- iii.) share thoughts about their experiences:
 - a) use pictures they produced (eg. artwork they draw) in the centre setting;
 - b) chat with me in the centre setting;

After the child showed an interest and gave me verbal consent, I then formally approached their family by sending an information letter and consent form (see Appendix D: Information letter and consent form for the Chinese family) to explain my doctoral research and invite the family to:

- i.) give written consent, as the caregivers, for their child to be observed by me (as the researcher) and video recorded during their child's daily experience of touch screen devices, and to share thoughts about their experiences using pictures they produced in the centre setting, and by chatting with me in the centre setting;
- ii.) participate in two sets of interviews, of 1 hour each (see Appendix 5: Schedule of questions for interviews with families); and
- iii.) agree to video record the interviews; and
- iv.) film their child's everyday experience of touch screen devices at home and elsewhere; and
- v.) allow me to use any video recorded footage that their child or themselves may feature in when I was documenting children's experience of touch screen devices.

Fortunately, the four selected Chinese families, and the other families that were involved, all consented to their children (and two siblings in two different Chinese families) to participate in my PhD research.

5.4.2 Ethical issues

There is a need to acknowledge the ethical issues of using a dialogical methodology in engaging with children's play involving touch screen devices. Ethics, as an issue in the early childhood setting, is about the researcher's responsibility for their own actions. Therefore, it is about their responsibility for the way they condition the actions of the individual child they interact with, and their responsibility for the actions that make relations possible or not between children. This notion of responsibility in Bakhtin's (1981) thinking is perhaps best discussed in the context of his concept of 'answerability'. Answerability refers to,

‘the social encounters that occur as a result of being in the world and the fact that these encounters suppose the importance of a moral and ethical obligation to carry responsibility towards relationships’. (Bakhtin 1984, p. 424)

This responsibility for the relationship with others and self, for the actions of children in one's charge and for the relationships between children, essentially, has to do with 'answering *to* and *for* the other 'without alibis' (Ponzio, 2008, p. 424). 'Without alibis' means that 'every action is answerable' (Bakhtin, 1981, cited in Redder & White, 2017, p. 424).

The ethical problem is that because no two actions are the same, researchers must make themselves answerable to the uniqueness of every action that can be categorized as pertaining to the relationships described above. Of course, these relationships are interconnected, which means a single action changes everything for all beings in the same social context. As such, researchers are implicated in all decisions that produce actions, whether their encounters with children are direct or indirect. Research also points out ethical issues related to children's agency. Sullivan and McCarthy (2004), drawing on Bakhtin's dialogic theory, illustrates how we can approach agency in terms of the values, emotions and feelings that other voices bring to our dialogue in particular

exchanges with others. He points out that children respond in particular ways to social discourses and notes their careful negotiation between choices (for example, how to respond to the teacher or how to respond to peers), their sense of ethics that accompanies these choices, and the role of others in helping them to make choices. Crucially within this, however, is the continual Bakhtinian emphasis on the importance of introducing tones of love or tones of care into the consciousness of those making choices; in itself a choice that implicates the emotions and feelings of particular actors (eg. teachers, other children). Rosen (2019) also indicates ethical issues regarding care for children in ECE settings and puts forward the questions of who cares for whom and who is recognized as providing care, and how care is bound up with a process of accumulation, oppression and solidarity.

As earlier intimated, researching children's use of touch screen devices not only involves an ethical problem when using a dialogical methodology, but also involves an ethical problem, associated with how we think about education, its purpose is and how it should be conducted. For example, there may be different understandings of what freedom means concerning the child's independence of thought and action in the early childhood setting. I have taken this dialogical standpoint in my research on account of my sense of moral responsibility to value children's voices and their freedom to think, speak and act for themselves, while at the same time needing to protect them from potential harm that might occur when exercising such freedom. Sometimes there is a conflict when, for example, I may oppose children's requests to 'play one more game' or 'watch one more video' because of parents' and teachers' views that children's play with touch screen games should be restricted and guided by a learning purpose. The extent to which we should listen to children's voices, value their rights by addressing their voices, and respond to their requests with full trust and confidence in their ability to self-manage is a challenge for a dialogic researcher.

Further to these above concerns, I also experienced tensions as a researcher with respect to my own situatedness and my experience of my participants' 'voices'. Although I tried to give equal and careful consideration to each voice, including children's voices, parents' voices, teachers' voices and my own voice as a researcher, I am concerned that my voice might involve misinterpretation, especially on account of my being a Chinese

researcher and an outsider in New Zealand ECE settings. As a mother of two young children, there might also be a 'hidden voice' that of a parent, although I was conscious of the need to avoid such a situation.

5.5 Validity or trustworthiness of the data

To ensure the validity or trustworthiness of the data, I had frequent discussion with my supervisors. In addition, I spent long term being in the ECE centre and follow children. Furthermore, I decided on inclusion of the Chinese language because the Chinese families and children speak in Chinese to express their voices. These quotes are reproduced in Mandarin followed by the English translation.

5.6 My role as the researcher and my voice

In this section, I discuss my role from an individual, a social and a cultural perspective. . Firstly, my roles as an individual researcher were:

- i) an organizer - to bring together all the viewpoints expressed by participants, and then let competing voices emerge from those multiple viewpoints;
- ii) an observer – to observe all those voices equally;
- iii) a participant - to participate in these various voices and address my voice among others as one among equal voices.

For the purpose of this research, as the researcher, the organizer, the observer and a participant with various voices, my aim was to identify those voices with profound personalities and ideological intentions and bring them together; to let them meet equally in the same social and cultural context; to enable those voices to engage in 'face-to-face' debate and compare themselves with the others. As the researcher, I needed to make an objective and realistic observations of multiple competing voices with conflicting ideas from the perspective of simultaneous coexistence and interaction. Finally, I had to help each participant to re-construct their own ideas and gain new

perspectives in the process of enabling continually deeper dialogues, which eventually constituted this study.

As a researcher advocating children's voices, I am aware that children's voices are often mediated, translated or even diluted by adults in practice, due to adults' judgement of the immaturity of the child. This offers important implications for my own role as a researcher in the thesis. I aimed to consider the child who was talking with me as an equal interlocutor, and keep in mind at all times children's right to express their voices and have their voices heard. During my interactions with children, I was careful to make sure children's voices were expressed and listened to, and I was cautious to avoid being another adult filter, by taking children's voices seriously and responding to their voices.

Secondly, I examine my role as a Chinese adult living in New Zealand from both a social and cultural perspective. For Bakhtin, there is no individual without culture, personal without social, or self without others (Sullivan & McCarthy, 2004). The dialogical worldview that Bakhtin develops sees each of these pairings as intimate but complex and not unproblematic relationships. Therefore my role in this study was not only as an individual researcher (I am very careful to use the word 'individual' here), but also a social and cultural one in dialogic interaction with others.

In addition to my academic identity as a researcher, my cultural identity is as a member of a group of Chinese people studying and living in New Zealand. This cultural identity is important to my study of Chinese children's touch screen experiences in New Zealand ECE settings, because I have lived experience of my study topic. On one hand, my cross-cultural experiences can add some special values and understanding to this study. On the other hand, I am also cautious in this regard; being a Chinese researcher and an outsider in New Zealand ECE settings, I needed to try to understand New Zealand culture to avoid misunderstandings caused by cultural differences.

There is an additional connection between my cultural identity and my study because I am a parent of two children who attend ECE in New Zealand. This identity gives me lived experiences of Chinese communities and New Zealand ECE settings from a parent's perspective. While this 'visual surplus' (referring to the additional insights offered by another) offers me additional insights to understand children's daily

experiences in New Zealand ECE settings from a Chinese parent's perspective, I also remain conscious of my 'hidden voice' as a parent. I also work as a part-time relieving teacher in an ECE centre (a different centre from the one in which I conducted my study) based in Hamilton, New Zealand. This work experience offers me 'visual surplus' (additional insights) to understand children's daily experiences in New Zealand ECE setting from a teacher's perspective.

5.7 Re-visiting research questions and my responses to them

In closing this chapter, I revisit my research questions in order to re-orient the chapters that follow. The research questions are:

- i) What are the competing voices of New Zealand teachers and Chinese caregivers surrounding Chinese preschool children's touch screen use in a New Zealand ECE setting?
- ii) What are Chinese preschool children's voices on their experiences of touch screens?
- iii) What competing voices of adults and children can be discerned in children's touch screen use?

Guided by these questions, I have presented an argument for a dialogic methodology (see Chapter 4) in tandem with a visual method of examining competing voices surrounding preschool Chinese children's everyday experiences of touchscreen devices (see Chapter 5). I have also provided an argument for 'genre' as my unit of analysis in an analytical framework of 'heteroglossia' in understanding competing voices.

In the following chapters (Chapter 6 and 7), I present the viewpoints from New Zealand teachers and Chinese caregivers, in which competing voices can be observed (in Chapter 6). Children's voices, discovered through genres, are added to this discussion, and then a new lawyer of competing voices between adults and children can be discerned (in Chapter 7).

Chapter 6

Competing Voices¹¹ of New Zealand ECE teachers and Chinese caregivers about children's touch screen use

As discussed in previous chapters, this study focuses on Chinese immigrant preschool-aged children's experiences of touch screen devices across different spaces: in an ECE centre, the children's homes and the spaces in between. Due to differences in geography, culture and ideology (as pointed out in Chapter 1 and Chapter 2), I anticipated that New Zealand teachers and Chinese immigrant caregivers may have different beliefs, perceptions and perspectives about children's use of touch screen devices. In order to understand the complexity surrounding children's touch screen use, I investigated Voices from New Zealand teachers and Chinese caregivers, using Bakhtinian dialogism as my theoretical framework to understand the plurality of the Voices from a social and cultural perspective. Based on Bakhtin's thinking, I identified Voices as being in competition with one another when one Voice strived to gain priority or dominance by defeating or establishing authority or superiority over other Voices who were trying to do the same. In my analysis, I was open to the possibility of competing Voices not only between different people but also within an individual person. In this chapter, I describe New Zealand ECE teachers' and Chinese immigrant caregivers' viewpoints on children's touch screen use. From a Bakhtinian standpoint, a Voice is representative of a viewpoint, a perspective, and people make their points and presence through the Voices they express (Bakhtin, 1984). In this chapter, each Voice is not a representative of a specific person, but a representative of a viewpoint: Voice stands to the front and people stand behind it. The term competing Voices, therefore, refers to competition between different viewpoints, but not among people. The relationship between Voices and viewpoints is visualized in Figure 6.1.

¹¹ Voices: I have capitalized the first letter of the word 'Voice(s)' when this word is used as a Bakhtinian term. Elsewhere, when the word 'Voice(s)' appears in plain lower case, it refers to its common understanding, for example, a child's voice is what a child has said.

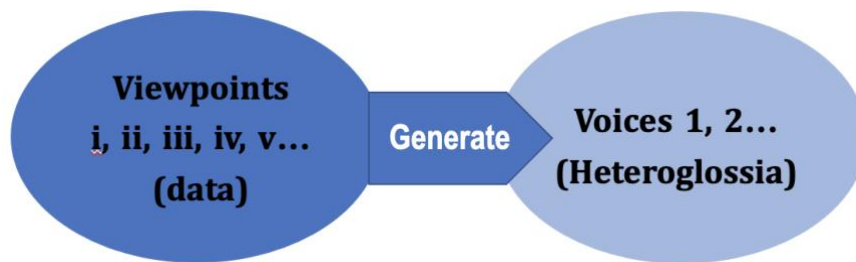


Figure 6.1: Voices and viewpoints

As stated in Chapter 5, I sought the viewpoints of New Zealand ECE teachers and Chinese immigrant caregivers through two sets of interviews. The first set of interviews was designed to gain some general views about children’s touch screen use. Competing Voices arose from viewpoints expressed in these interviews. In the second interview, I asked teachers and caregivers to clarify their views and add new thoughts on the emergent Voices. By doing this, there was an opportunity for each Voice, as a representative of a number of viewpoints, to further express and justify itself. During this process of self-clarification, competing Voices become clearer. Bakhtin (1986) used the notion of heteroglossia to refer to multiple Voices in a social environment. In this chapter, Heteroglossia is used as an analytical framework to illustrate the diverse competing Voices generated from various viewpoints.

The data sources I drew from in this chapter were i) interviews with five teachers in a New Zealand ECE setting; ii) interviews with two Chinese immigrant caregivers whose children attended this ECE setting. My investigations illustrated a series of complex and competing Voices in and around Chinese children’s use of touch screen devices. The main themes I identified were as follows: i) Perceptions of children’s play and learning; ii) Views on children’s use of touch screens; and iii) The role of adults in children’s use of touch screens.

6.1 New Zealand ECE teachers’ viewpoints

Bakhtin argued that the diversity within a Voice derived from its social nature, which reflected the social and ideological differentiation in society (Bakhtin, 1981). This interpretation gives me the tools to understand the underpinning values, beliefs and

perspectives in a Voice from both a social and a cultural perspective. In order to understand teachers' attitudes toward children's use of touch screen devices in a New Zealand ECE setting, it is important to understand teachers' perceptions of children's play and learning.

6.1.1 Teachers' perceptions of children's play and learning

As reviewed in chapter 2, attitudes toward children's use of touch screen devices are greatly shaped by particular conceptions about children's play and learning. To understand better the views the New Zealand ECE teachers in my study held toward children's use of touch screen devices and why, I begin by exploring their perceptions of children's play and learning.

In the New Zealand ECE curriculum (NZMoE, 2017) and ECE services, play-based learning is highly valued. Teachers in the centre in my study stated views like these:

Kelly¹² (Centre Manager): We base lots of our programmes on play-based learning.

Tina (Teacher): We are working with caregivers to achieve that goal [learning] for a child but we are doing [it] in a play-based learning environment... to achieve that goal in a playful manner.

These statements indicate that play-based learning is part of the centre's philosophy. The play-based learning philosophy in this centre embodies the principles of the New Zealand ECE curriculum *Te whāriki* (NZMoE, 2017), which advocates "children's learning of making sense of their immediate and wider worlds by engaging in play-based learning activities" (p.15).

A belief in the value of play-based learning is also shown in the following comment from another teacher Amanda:

Amanda (Teacher): I think children learn through their play. And I think it all comes back to letting them choose their interest, their focus. What they

¹² Pseudonyms were used as requested by some participants. I selected pseudonyms that were commonly used in English speaking countries.

want to do, you know all children are not the same, they don't have the same strengths. Yeah, I think they can learn through play.

In Amanda's comment, play is closely combined with learning in her view that children can learn through play. She also highlights children's choice of their interest as a starting point for play-based learning. In addition, Amanda added her view of how to combine learning and play in the following comment:

Amanda (Teacher): Finding something that they are interested in and then finding something that they need to strengthen and learn and combining the two.

From this comment, it seems that for Amanda when play and learning are combined, children can build on their interests and strengthen aspects of their learning.

Since play-based learning is important in this New Zealand ECE setting, I sought to understand more about the teachers' perceptions of children's play and learning when using touch screen devices. The following conversation, an excerpt from a group interview with the centre manager and a teacher Maggie, provides some insight into teachers' attitudes towards the ICT programme in the centre:

L1 Kelly (Centre manager): Even I don't know when the iPad was first introduced into the centre. How long it was, Maggie [a teacher's name], four or five years ago? Let's just say four or five years ago, iPads were coming in. They gave us all one or two iPads depending on the centres. The iPad was for us.

L2 Dandan (Researcher): It [the iPad] was for teachers, right?

L3 Kelly (Centre manager): Yes, it [the iPad] was for teachers. We have to monitor these [iPads use] now and something else we have to monitor. We have to know how to work with the apps, what learning is it going to give to the children, so then we have to do ICT programmes and we have to put on what we thought, ... We were like "What? This is another thing we have to do?" Whereas we know it is a shifting part of the world, but in the centre, you saw caregivers coming here who were

wanting their children to learn the language.

L4 Maggie (Teacher): And social skills.

L5 Kelly (Centre manager): Yeah, and just to be a Kiwi¹³, quote mark [here Kelly made a double quotation mark with her fingers for emphasis], ‘Kiwi have this lifestyle’, and we have to introduce ICT into part of our curriculum and we were just like we couldn’t work it out: How does that work? What do you want us to do? so I suppose with four years old, for me, as long as it is limited. But apart from that [iPads], we have enough other resources.

L6 Dandan (Researcher): What are other resources?

L7 Kelly (Centre manager): Blocks, painting, socializing, climbing...and language.

From these comments, it shows that at first (4-5 years ago) iPads were introduced for teachers’ use. Teachers were resistant to their introduction as they considered ICT an added burden on top of their already heavy workload. Even though they recognised digital learning as a new way of learning, they still considered that it didn’t fit in the ECE learning environment because of: i) the young age of children, ii) caregivers’ expectations about their children’s learning in ECE, and iii) other more useful learning resources being available in the centre such as blocks, climbing and painting. These comments suggest that the teachers could not see how touch screen devices might help with learning language and social skills. Furthermore, the centre manager’s perception of children’s play and learning was shaped by her view of the Kiwi culture, beliefs and lifestyle, which, from her later clarification, she viewed as closely linked to the natural environment and creative, socially interactive, and physically active pursuits. However, we can surmise that the centre manager considered a limited use of digital devices and technologies in the ECE environment to be acceptable.

In sum, the perceptions of play and learning shared by these New Zealand ECE teachers

¹³ Kiwi (people), a nickname for New Zealanders.

in my study can be summarized in the table below:

Table 6.1: New Zealand teachers' perception of children's play and learning

Social and cultural expectations	To be a 'Kiwi', living according to the Kiwi lifestyle; e.g. closely connecting with nature.
Perception of play	i) Play is expected to be related to a range of natural, outdoor, physical, social, creative and imaginative activities, using natural materials in natural environments. ii) Play should be interest-oriented and be the children's choice.
Perception of learning in ECE	Learning is linked to a wide range of play-based activities under the strong belief in play-based learning stated in Te Whāriki in the ECE setting.
Relationship between play and learning	i) Children can learn through play ii) Play and learning can be well combined

Since play and learning are well combined in the play-based learning philosophy, and play was viewed to be directed by the children's choice, it could be inferred that touch screen play could be a viable choice. However, from these teachers' comments, ICT is only accepted reluctantly in the centre. This seemingly contradictory view, therefore, led me to investigate further whether children's use of touch screen devices, as a form of play and learning, was regarded as a play-based learning activity in the centre. The section that follows presents the views of these New Zealand ECE teachers in my study on children's learning with touch screen devices.

6.1.2 Teachers' views of children's touch screen use in ECE

From the viewpoints that teachers shared regarding children's use of touch screen devices in their ECE centre, a variety of Voices could be identified. In these multiple Voices, despite the similarities, two competing Voices were identified: i) The Voice of conditional support, and ii) The Voice of opposition or reluctance.

6.1.2.1 The Voice of conditional support

Some teachers in my study shared supportive viewpoints about children's touch screen use relating to learning opportunities, educational equity and transition. However, this

support was subject to some conditions such as learning purposes, supervision, and a time limit. From these viewpoints, a Voice of conditional support was generated.

I. Viewpoints

Viewpoint 1: There are potential learning opportunities from children's touch screen use

The view that that using touch screen devices might lead to potential learning opportunities for children was expressed by teachers Amanda and Sarah:

Amanda (Teacher): It [Using touch screen devices] is good to extend their learning, so it is good to pull up things which they have an interest in. [For example,] they really like dinosaurs, you can structure play with dinosaurs they are interested in and set up an activity that includes other children so they have to learn to share using something they are interested in. So, target their interest and let them play sort of things.

Amanda (Teacher): It is the way you use it. You know, set up ways for them to share it and there are lots of apps that you can pick at, directed at their interest in learning. So I think it is like anything you use in the centre, it depends on how you use it.

Amanda (Teacher): I think it [the touch screen device] can be a good learning tool... I think they [touch screen devices] are wonderful tools when used correctly, so I do think it is important for them [children] to have access to them.

Teacher Amanda saw touch screens as a great learning tool that can direct children's interest in learning. She gave a specific example of how, if a child was interested in dinosaurs, teachers could set up an activity using a touch screen device so the child could learn about dinosaurs through touch screen play and also learn to share.

Sarah (Teacher): It [Using touch screen devices] can open up a wider world to the child, more than what they can experience here [in this ECE centre].

Sarah (Teacher): It [Using touch screen devices] can help them [children] answer questions that they have, so I suppose I like to think they would use it

for a purpose, to find information about something.

Sarah (Teacher): I think they probably just want to play games, which I am not totally against because they could learn maths and things like that.

These teachers' comments show an opinion that touch screens, along with various educational Apps, can provide learning opportunities for children in that using touch screens can i) direct or be directed at children's interest in learning, and ii) open up a wider world for children and extend their learning. Although Sarah expresses her concerns about children's use of touch screen devices for playing games, she justifies for children's access to touch screen devices by arguing that children could gain useful learning from their use of touch screen devices (such as maths and other things). This justification was also provided by Amanda, who advocated children's access to touch screen devices as a useful learning tool.

However, teacher support for using touch screen devices in this way was qualified. The first teacher Amanda emphasized that it all depends on how touch screen devices are used; she qualified her support by prescribing that such access needed to be used correctly. The second teacher Sarah pointed out devices that needed to be used for a purpose such as finding information. These comments contribute to the conditional element within the Voice of support. They make the Voice of support justified or conditional rather than absolute.

This view that touch screen devices can be used as a tool in the centre was also expressed by the centre manager Kelly. However, she saw them as a tool for supporting teacher planning and learning.

Kelly (Centre Manager): So, when we get through our programme planning and stuff like that, then the iPad might be helpful because we have to research what we can do in that play-based learning. So iPads for teachers are a great tool to present something for the children for learning. But for the children, I think at four years old it is not used for learning.

Kelly's conditional support for touchscreen use was confined to teacher use.

Table 6.2: The justification and conditions of Viewpoint 1

Viewpoint 1	There are potential learning opportunities for children’s use of touch screens
Justification	Reasons for support: Engaging children's current interests; and Extending children's learning.
Conditions	Depending on: Used by children for learning tools, e.g. finding information. Be confined to teacher use.

Viewpoint 2. Touch screens can be used as a tool for promoting equity of educational opportunity

In addition to the value of touch screens as a learning tool, the teacher Amanda commented on the value of touch screens as a tool for promoting equity of educational opportunity, when caregivers cannot afford touch screens at home.

Amanda (Teacher): In financial constraints, it can be that some children don’t have those kinds of things [touch screen devices] at home... so in a way it is good we have those devices over here [in the centre] so they can see them.

Amanda also considered that providing touch screens in the centre could support children’s social development.

Amanda (Teacher): I think they can help children with learning delays, and you know some of them have social skill problems and it can be quite calming for them, so I think it has its place...For example, you might find that someone needs to learn sharing, then help them learn to share because that is really important. Like social literacy, then think social literate for them.

From these comments, we can see that in addition to the provision of fair access to devices, Amanda recognised that touch screen devices can provide multiple options for meeting children’s different learning needs. Therefore, Amanda shared two messages about equity: equity of access to the devices, and equity of access to learning. Her view

provides another justification for children's access to touch screen devices in the centre.

Viewpoint 3. Touch screens can help preschool children's transition to primary schools.

Besides the value of touch screens as a tool for learning and providing fair access to devices and learning opportunities, teacher Amanda pointed out the value of touch screen devices in helping preschool children's transition to primary schools.

Amanda (Teacher): Because it is moving towards that lots of schools are using them [touch screen devices]. I think it is good today for them [preschool children] to be at least familiar with those devices.

Sarah (Teacher): [Touch screens are used in the centre] a bit more probably pre-school. Yeah, pre-school, researching questions... They will look up like we did the other day and found out about the weeds that are growing outside called cassia and false dandelion, so children wanted to know what it was, and we found out because the leaf feels like cassia. We don't know and go to ask Google.

From Amanda's comments, being familiar with touch screen devices could be one strategy to help preschool children to adapt better to primary school learning because digital literacy has already been included in curriculum and practice in primary schools. Sarah provides an example of how touch screens are used in the centre as being similar to the way they are used in pre-schools – for research questions.

In sum, the viewpoints teachers shared in support of children's touch screen use include the value of touch screens as a tool for learning, for promoting educational equity, and as a way of helping preschool children's transition to primary school.

II. Conditions of the Voice of support

All five teachers in my study contributed their views on the conditions for children's touch screen use, which from my analysis could be regarded as a consensus. The conditions expressed by teachers in my study are as follows:

Condition 1: Under supervision (to avoid inappropriate content)

Kelly (Centre Manager): As long as this [children's use of touch screen devices] is monitored, it is alright.

Sarah (Teacher): I think for the age we work with [preschool age], it is good under supervision to help direct children's learning.

Sarah (Teacher): Under supervision for under 5 years old children, even 5 to 10 years old, under supervision because there is so much they can see [online via using touch screens].

Sarah (Teacher): I like the 'guide' part - doing it together. Yeah, but eventually relinquishing as they become older, they take over responsibility for themselves.

From these teacher comments, we can see that children's touch screen use is accepted when it is monitored, controlled and supervised and children are prevented from seeing inappropriate content online. Teacher Sarah also mentioned that the degree of adult guidance in relation to children's touch screen use depends on the age and maturity of the child. She suggests that as a child becomes older, the supervision can become more relaxed, because the child can, or should, take responsibility for themselves.

Condition 2: Setting a time limit (to avoid overuse)

Kelly (Teacher): My opinion about children using touch screen devices at the centre is, well, limited.

Sarah (Teacher): I think if under the supervision and with a limited amount of time [children's use of touch screens is acceptable].

Amanda (Teacher): I think it can be a good learning tool, but I think you have to be worried about overuse... I think probably around 20 minutes.

Among teachers who agreed to touch screen use in the centre, almost all of them highlighted that a time limit should be set to avoid children's overuse. Teacher Amanda went a step further to suggest a specific time limit for the child to use a touch screen device - around 20 minutes each time. Concerning the consequences of overuse, in addition to the lack of socialization, the negative effect on eyesight was mentioned by some teachers (Amanda, Tina). Teacher Maggie further expressed her concern about the addictive potential of digital games.

Condition 3: For learning purposes

Amanda (Teacher): Yeah, as long as there is a purpose. Not just at random [like] here you go, so I think there has to have purposes.'

Kelly (Teacher): [When we have some quiet and calm time], then we can actually sit with that child and do a learning experience [using a touch screen device] with them [children].

Sarah (Teacher): I like to think they would use it for a purpose, to find information about something... I do want them to use touchscreen devices for learning opportunities and we do use that here... So I think here [in the centre] it is [used] for learning opportunities, for gathering information and research.

According to these teachers' comments, touch screens can be used for learning purposes. Teacher Sarah mentioned the difference between touch screen use at home and in the centre arguing that there should be learning purposes such as gathering information and or research for the use of devices in the centre. Sarah's comments emphasised 'education' as a core function of the ECE centre.

The learning purpose of children's touch screen use was agreed on by these five teachers in this centre. Even those teachers who expressed a Voice of opposition or reluctance about the use of touch screen devices explained that it is acceptable if touch screen devices are used for children's learning. As Maggie and Tina stated:

Maggie (Teacher): But like you were saying the other day that in China caregivers do that but that's because they are giving children English to listen to,

because caregivers themselves cannot speak English or because of their accent, the pronunciation is not quite right. I can understand that if you are using it for a [learning] tool like that.

Tina (Teacher): Just for their learning. Learning, yeah, that’s what I am saying. We don’t need it for babies and toddlers. It is mainly for preschool children... Rhymes maybe sometimes, awareness learning, when you have to connect to a culture, you know those stuff.

Condition 4: Not used as a babysitter

Sarah (Teacher): Perhaps some people use it as a babysitter device.

Amanda (Teacher): That is what I think is important because if it is just for fun or for a babysitter, you know because they do like it, they like to watch cartoons, but that is not always learning.

Kelly (Teacher): For four years old, I think within this day and age of technology, they do have to have some time on the iPads but not used as a babysitting service.

From the comments above, these teachers expressed their concerns about touch screen use as a babysitter tool for children. In this context, babysitting equates with passive entertainment without specific learning purposes, serving to keep the child quiet and occupied when adults are too busy to look after them.

The above-mentioned viewpoints and conditions are summarised in the table below. From these viewpoints and conditions, a Voice of conditional support can be generated.

Table 6.3: Viewpoints and conditions in the Voice of conditional support

Viewpoints	<ol style="list-style-type: none"> 1. There are potential learning opportunities for children’s use of touch screens; 2. Touch screens can be used as a tool for promoting educational equality; 3. Touch screens can help preschool children’s transition to primary schools.
Conditions	<ol style="list-style-type: none"> 1. Under supervision; 2. For a limited time; 3. For learning purposes;

4. Not used as a babysitter.

Generation of Voice The Voice of conditional support

In sum, some teachers in this ECE setting expressed viewpoints that touch screens can be used as a tool for enhancing children’s learning, promoting educational equality, and helping preschool children’s transition to primary school. However, their support for using touch screens was qualified; conditions included using them under supervision, for a limited time, for learning purposes and not for babysitting. Therefore, these teachers expressed a Voice of support, but this Voice of support is conditional rather than absolute.

6.1.2.2 The Voice of opposition or reluctance

Even though some teachers in the centre expressed supportive viewpoints concerning children’s touch screen use, these viewpoints were not shared by the other teachers. As a result, another Voice, a Voice of opposition or reluctance towards children’s use of touch screen devices was generated from these different viewpoints.

These teachers’ expressed viewpoints such as touch screens afforded little useful learning, there were more worthwhile activities in the centre, ideas about the role of an ECE teacher/centre, their reluctance to use touch screens and concerns about negative effects on socialisation.

I. Viewpoints

Although some teachers expressed a Voice of conditional support and feature in the previous section, some of them also expressed a different Voice that belongs in this section. This shows that competing Voices can be found within the perspectives of an individual teacher. It suggests that teachers’ Voices are more complex than just one single Voice. Even within an individual teacher, more than one Voice can be heard.

Viewpoint 4: Children’s use of touch screens is just entertainment carrying little useful learning

Concerning children's touch screen use, some teachers directly expressed their dislike of the use of touch screen devices. The following comments are examples of this view:

Maggie (Teacher): Technology is good, but an individual child playing on a touch screen is not... I do it [use a touch screen device] every now and then when I need to, but I don't like it.

Tina (Teacher): I don't like it [touch screen device]. I don't think they [children] require touch screens too... You know, we can do play-based learning with them all the time.

From these comments, we can see that these teachers consider the use of touch screen devices a lower priority in the ECE learning environment, and conveyed their reluctance to use them. While Maggie conceded that she used them on occasion when it was absolutely necessary, Tina claimed using touch screen devices was not a preferable choice for her compared with other play-based learning activities in the centre.

In addition to dislike, some teachers shared their view that children's use of touch screen devices is mainly for entertainment, instead of for learning. These comments include:

Kelly (Teacher): That [using touch screen devices] is entertainment.

Maggie (Teacher): Yeah, it's entertainment. They [children] are not learning something... When you get a big group, all they do is fight over it, and they can't see. And like I said the other day, they change it to YouTube, they go on....like the entertainment stuff. They are not using it for learning, they are using it for entertainment.

Maggie (Teacher): He [the child] won't leave it [touch screen device], he stays there [plays the touch screen device] all day... he will stay there and not go anywhere and play, he is just watching it all day.

Both teachers believed that touch screen devices are mainly used by children for entertainment, instead of learning. Maggie further expressed her concern about children's passive watching on touch screens, which provides little useful learning.

Therefore, we can infer that, from these teachers' perspective, they believe that there is little learning potential for children in watching videos using touch screen devices.

This view that touch screens have minimal learning benefits was further expanded on by teachers Kelly, Maggie and Tina.

Kelly (Centre Manager): ...But for the children, I think at four years old, it is not used for learning. We don't think so.

Maggie (teacher): If they [children] lean over and touch, you got fighting and screaming and yelling going on. Like our age [of children], the young ones, they keep pushing the home button, and it keeps going to Siri... they are not learning anything. Like I said, keep going back to the entertainment value of an iPad, rather than to learning.

Tina (Teacher): My kids do want touch screens at home but they watch videos... They don't do it for a learning purpose. It is just for babysitting at home.

Clearly, from the above comments, we can see these teachers' beliefs and preferences about children's touch screen use. They did not think touch screens were appropriate for useful learning in this centre considering: i) the age of children (see Kelly and Maggie's comments), and ii) the way children used the devices (see Maggie and Tina's comments). Even though these teachers tolerated limited use, they still perceived minimal useful learning for preschool-aged children occurs when they use touch screen devices in the ECE setting.

Viewpoint 5: Children's use of touch screens will result in an absence of socialising.

Maggie (Teacher): But most of them are just there for one child to interact with [the touch screen device], others watch. That is not a shared learning opportunity but it is more individual... they [children] need socialising and talk, they need to talk.

Kelly (Centre manager): With those technologies, the children don't have much respect, because they are getting along with these [devices], not from

interacting with caregivers or adults.

From these teachers' comments, using touch screen devices decreased children's socialising activities with others. Moreover, Kelly expressed her concern about children's lack of respect towards people which she attributed to their use of these technologies and devices instead of interacting with people.

Viewpoint 6: Children should have less touch screen time and be more exposed to play-based learning activities and other more worthwhile pursuits in the centre, as they already have enough exposure to touch screens at home.

In addition to the perceptions of the minimal learning value of touch screens and their negative impact on children's socialising, some teachers in my study expressed a view that children already have enough exposure to touch screens in the home space. Correspondingly, they believed that children should be less exposed to touch screens and have more opportunities for outside play and other forms of play in the centre space.

Kelly (Centre Manager): Children are more exposed to phones, iPads, tablets at home, so here we expose them more to outside play and other play. (Kelly pointed to the playground outside). They should be out there enjoying themselves.

Maggie (Teacher): I don't think children need iPad, touchscreen stuff here [in the centre]. They need socialising and talk [in the centre] because they use too much at home.

Tina (Teacher): At home, I think they just like if mum is busy, go watch it... do that.

From Kelly's comments, she implies that children have enough experience with digital technologies and devices in the home space. Therefore in the centre space, she thinks children should go outside and enjoy more outdoor activities, instead of staying indoors using an iPad (touch screen play versus outdoor activities). If we examine Kelly's perception of touch screens, learning and play, we can see children's use of touch screen

devices contradicts her perception of play, which she relates to outdoor, physical, social, creative and imaginative activities.

In keeping with their view that children should have less touch screen time in the centre, these teachers further claimed that children should be more exposed to play-based learning activities and other more worthwhile activities in the centre, such as blocks, painting, socialising, climbing, and so on. This view was expressed by the centre manager Kelly and the teacher Tina:

Kelly (Teacher): We have enough other resources [in the centre], blocks, painting, socializing, climbing, and language... like learning those basics. So, think from this age, if we teach the basics of play and learning and socializing, like Maggie said, with limited digital devices... During the day, it is like we must put all those [touch screen devices] away, let us just focus on doing something else.

Tina (Teacher): I don't think they [children] need touch screens at all. There are so many toys and learning plays here [in the centre]... we can do play-based learning with them all the time.

Here these teachers contend vigorously that there is no need for children to use touch screen devices in this ECE context, because children have sufficient access to touch screen devices at home, while in the centre they have other priorities and preferences. In addition, they argue that there are so many toys, play and learning activities in the centre and it is important that children are involved in a wider range of non-digital outdoor and social play activities in the ECE learning environment. This confirms that using touch screen devices was not teachers' preferred activity compared with other existing play-based learning activities in the centre.

Viewpoint 7: ECE teachers' role is more than a babysitter

Kelly (Centre manager): Because lots of people's understanding of early childhood centres is that we are babysitters anyway. If we turn around and use the iPad, it is what people think we are using it for babysitting.

Well, it is not used for that [babysitting], it's gonna be for a purpose - a learning purpose.

This view relates to what Kelly perceives as a parental and community attitude about the role of ECE teachers. Kelly makes it clear that ECE teachers are more than babysitters by prioritising learning as opposed to some common assumptions about ECE. Kelly's comment implies that she is in favour of using iPads for learning purposes, which suggests that she is not simply against the use of touch screen devices but holds a more complex and nuanced attitude.

Viewpoint 8: Reluctance of using touch screens

Some teachers expressed reluctance about using touch screen devices. Reasons for such reluctance were shared and include: i) It is difficult to manage children's touch screen use in the centre, ii) There are other preferable activities available in the centre, iii) Teachers don't have enough focused time to use touch screen devices with children, iv) Using touch screens is just a distraction.

Kelly: Sometimes it is easier not to have them [touch screen devices]. Do some drawing, let's do some drawing... You know, get them [children] into something else.

This comment from Kelly indicates not only her preference for other activities (such as drawing), compared with using touch screens but also explains one of the reasons why touch screen devices are not preferred in the centre. This is because it is difficult for teachers to manage children's use of touch screen devices, and it is easier to do some other existing play-based learning activities with children in the centre. This view of the challenges associated with management of children on touch screens was also expressed by Maggie when she said children were "fighting and screaming and yelling" and children "keep pushing the home button, and it keeps going to Siri" (see Maggie's comment in viewpoint 4 in this section).

In addition to the difficulty of managing children's touch screen use and the belief that there are other preferable activities available in the centre, 'time' was also mentioned

by ECE teachers. That is, teachers said they do not have enough focused time to use touch screen devices with children as part of their daily routine.

Kelly (Centre Manager): We [teachers] don't have time to do that [use touch screens with children] unless it is really quiet. But during a busy day, we don't... During the day it is madness because you've got 20 children there watching, they want to use it, they want to hold it. You know they want to go around and take photos of themselves and that's fine, but we don't have time for that.

Kelly mentioned several times that teachers were very busy with their everyday routines and didn't have enough time to use touch screen devices with children. This view implies that children's touch screen use needs teachers' company, supervision and guidance, which resonates with teachers' views of the need to supervise children's touch screens use for a learning purpose. In addition, this view of 'no time for touch screens' also reflected teachers' priorities and the belief they should do other preferable activities in the limited time.

Teacher Maggie further indicated that her reluctance to use touch screens is because she sees them as just a distraction.

Maggie (Teacher): To me, they [using touch screen devices] are not educational, they are just a distraction.

Maggie (Teacher): My biggest concern is that at home it [touch screen device] is given as a distraction and so that caregivers can do their thing but they have too long on it and now we have children that just demand it. They need the space and time to say 'No, you can't have that here'.

From Maggie's comments, using touch screen devices is a distraction from other learning activities and worthwhile activities in the centre. She also mentioned children can spend time on touch screen devices at home, where they are used as a distraction because caregivers have other priorities or agendas.

Teachers' comments above suggest a view that touch screen devices were just used as a distraction, which led to teachers' reluctance to use them in the centre. However,

teachers also expressed that in some cases they used touch screens when there was a need. Teachers did not make an absolute claim in this regard and admitted such distractions could be of some help. The excerpt that follows shows an example of this view.

Kelly (Teacher): We [teachers] have used the iPad when we are tired and children are tired. We all need to refocus so we put something on the iPad.

Maggie (Teacher): At times it is my last resort if the child is really upset or won't let their caregivers go. It is like as soon as you say 'iPad'... (Maggie snapped her fingers, creating a clicking sound) they [children] are. 'Yeah'. Yeah, it works terribly too well.

Tina (Teacher): We hardly give them [children] screen time here [in the centre]. Just when they are upset or you want to divert their mind somewhere else.

These three teachers mentioned the use of touch screen devices as a distraction from some upsetting incidents, to make a child calm down or cheer up. Touch screens were used as a last resort for comfort or distraction.

In sum, some teachers expressed their reluctance to use touch screen devices because i) It is difficult to manage children's touch screen use in the centre, ii) There are other preferable activities available in the centre, iii) Teachers don't have enough focused time to use touch screen devices with children, iv) Using touch screens is just a distraction.

However, teachers did not totally reject touch screen use. Instead, they admitted that they used touch screens in some special cases and touch screen devices did have some value in those instances including i) When teachers and children are tired and need to refocus, ii) When a child is really upset and iii) When there is a need to divert children's minds.

From the above viewpoints expressed in this section, a Voice of opposition or reluctance toward children's touch screen use can be generated. These viewpoints are summarised in the following table.

Table 6.4: Viewpoints in the Voice of opposition or reluctance

Description of Viewpoints	
Viewpoint 4	Children’s use of touch screens is just entertainment carrying little useful learning.
Viewpoint 5	Children’s use of touch screens will lead to a lack of socialising.
Viewpoint 6	Children should have less touch screen time and be more exposed to play-based learning activities and other more worthwhile pursuits in the centre, as they already have enough exposure to touch screens at home.
Viewpoint 7	The role of the ECE teacher/centre is more than a babysitter.
Viewpoint 8	Reluctance to use touch screens, because i) It is difficult to manage children’s touch screen use in the centre, ii) There are other more preferable activities available in the centre, iii) Teachers don’t have enough focused time to use touch screen devices with children, and iv) Using touch screens is just a distraction.
Generation of The Voice	
Voice Two	The Voice of opposition or reluctance

In summary, this section presented teachers’ attitudes toward children’s use of touch screen devices. Two competing Voices emerged from the viewpoints expressed by the teachers. These two competing Voices alongside viewpoints are summarized in the table below:

Table 6.5: Competing Voices, descriptions and justification

Voices	Voice of Conditional Support	Voice of Opposition or Reluctance
Viewpoints	<ol style="list-style-type: none"> 1. Touch screen devices can be a useful learning tool, and provide great learning opportunities. 2. In ECE they can promote educational equity. 3. Access to touch screen devices can help children’s transition to primary schools. 	<ol style="list-style-type: none"> 4. Entertainment with little useful learning. 5. A lack of socialising. 6. Children should have less touch screen time and be more exposed to play-based learning activities and other more worthwhile pursuits in the centre. 7. The role of ECE teacher/centre is more than a babysitter. 8. Reluctance to use touch screens, due to difficulties of managing children’s touch screen use, other more preferable activities available, a lack of focused time, and the view touch screens are a distraction.

Conditions & Special cases	Conditions of support for the use of touch screens: 1. Under the supervision 2. Set time limits 3. For learning purposes 4. Not used as a babysitter	Special cases when touch screens can be used as a last resort: 1. When teachers and children are tired and need to refocus; 2. When a child is really upset; 3. When there is a need to divert children's attention.
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6.1.3 Teachers' views of their roles: Scaffolders versus gatekeepers

These two competing Voices discussed in the previous section can be seen to have implications for teachers' views of their roles in children's touch screen use. Within the Voice of support under guidance or supervision, a teacher's role implies i) Adults' dominant responsibility for children's touch screen use is to provide support, scaffold and guidance, and ii) adults' guidance should be relinquished as children grow older. In this study, I describe this role as a scaffolder, who tends to provide access to and offer guidance about children's touch screen use, but still, for learning. Teacher Sarah contributed her viewpoints on the role of scaffolders as follows.

Sarah (Teacher): I think for the age [preschool-aged] we work with, it is good under supervision to help direct children's learning.

Sarah (Teacher): I think also that the adults are the guide and we have a responsibility to guide children so that they are not...Yes, just to guide them.

From this teacher's comment, preschool-aged children are unlikely to navigate the use of touch screens safely, thus adults' supervision and guidance are seen as important for children's touch screen use; moreover, it is adults' responsibility to guide children in their use of digital technologies such as touch screen devices. Thus, we can infer that concerning the role as a scaffolder, the dominant responsibility of teachers is seen as supporting, scaffolding and guiding children's touch screen use.

Sarah (Teacher): 'I guess just being afraid that children that are not guided, they would fall into inappropriate [content] because there is so much [inappropriate content] which is accessible on these [touchscreen

devices] with the connection of the internet. I suppose you can have locks and that on iPads and stuff like that.

Sarah (Teacher): I like the ‘guide’ part - doing it together. Yeah, but eventually relinquishing as they [children] become older, they take over responsibility for themselves.’

Tina (Teacher): The concern would be the same. Because sometimes you can forget to put locks on the device and because the internet is so vast, they can go anywhere, they can learn anything and they get influenced by someone else on there. So these are the disadvantages and the biggest concern for me for my child or any child. They can go on the internet and do something, which they don’t know at this young age. So that will be my big concern of giving them [touch screen devices] and how we supervise their use. One time I hear on the news that a boy spent money on the iPad buying a toy worth something. It is just because mum’s card details were saved on the iPad, so he managed to use it but he didn’t know so he just clicked, clicked, and clicked, and it happened. Then she got a bill.

The above comments show further why supervision is seen as so important in the teacher’s role as a scaffolder in children’s touch screen use. These reasons relate to: i) the inappropriate content online and ii) the young age of children. Sarah further shared her view that whether such supervision is needed depends on the age and maturity of the children, which reflects the scaffolding role of teachers.

However, concerning how to supervise children’s touch screen use, these two teachers who provided viewpoints within the Voice of conditional support both proposed putting locks on the devices, which from my interpretation, strengthens the restricting role in the Voice of opposition or reluctance.

Within the Voice of opposition or reluctance, the teachers’ role can be seen to imply: i) teachers should restrict children’s use of touch screens in the centre (see the viewpoint 5 in section 6.1.2, children should have less touch screen time in the centre), ii) teacher’s role is more educational, not just babysitters (see the viewpoint 6 in section 6.1.2). In

this study, I describe this role as a gatekeeper, who tends to restrain children’s access to and use of touch screen devices and other digital technologies. Since the dominant responsibility of teachers is to be a gatekeeper, their job is to constrain, control and prevent children from using touch screen devices.

The viewpoints regarding teachers’ roles in children’s touch screen use are presented in the table below:

Table 6.6: Teachers’ viewpoints on their roles: Scaffolders or Gatekeepers

Viewpoints on teachers’ role	Scaffolders	Gatekeepers
Description of viewpoints	Tending to provide access to and offer guidance about children’s touch screen use for learning.	Tending to restrict children’s access to and use of touch screen devices and other digital technologies.
Dominant responsibility	Supporting	Restricting

In summary, concerning teachers’ views on their roles in children’s touch screen use, different viewpoints were shared by teachers in my study. While some scaffolders tend to provide access to and offer guidance about children’s touch screen use for learning, other gatekeepers tend to restrain children’s access to touch screen devices. These two conflicting viewpoints on the teachers’ role, from my interpretation, resonate with the Voice of conditional support and Voice of opposition or reluctance respectively. It follows that teachers are grappling with a range of tensions in terms of their roles and dominant responsibilities regarding children’s touch screen use, even though they hold the same intention to strive for what is best for children’s learning and development.

6.1.4 Competing Voices of New Zealand ECE teachers

6.1.4.1 Competing Voices within an individual teacher

The prior discussion shows that ECE teachers may hold contradictory views because they are pulled in conflicting directions by different philosophies. It follows that the Voices of teachers, as a group, are far more complex than just one single Voice. Even

an individual teacher may articulate different viewpoints, demonstrating the Bakhtinian concept of the plurality of Voices.

For every teacher, there are nuances and complexities; correspondingly in this section, I examine further the complexities of the viewpoints each teacher expressed and draw out the contradictions. These are presented as evidence of competing Voices within an individual person. These conflicting viewpoints within an individual, which show they are thinking critically about both sides of the issue, instead of making an absolute claim, provide an insight into the presence of competing Voices.

Due to the competing Voices within an individual, it is unlikely an individual teacher will be categorised into a particular Voice: the Voice of conditional support versus the Voice of opposition or reluctance. However, a dominant Voice can be recognized in a specific person from the strength of the viewpoints they expressed.

I use three teachers and their viewpoints as examples of my analysis of the competing Voices within individual teachers and the dominant Voices that can be discerned.

I. Competing Voices within Kelly

There are conflicting viewpoints within Kelly's statements. Kelly expresses a Voice of opposition or reluctance, but she is not firmly opposed, because she can still see a place for touch screen use, with certain conditions, due to policy and curriculum.

On the one hand, Kelly follows the New Zealand ECE curriculum Te Whariki (NZMoE, 2017) which explicitly supports the use of digital technologies and devices (p. 36, 37, 42, 44, 45, 47). Correspondingly, she accepts the introduction of ICT in the centre even though she feels uncertain about how to integrate the iPad into the ECE learning environment considering the young age of children, the expectation of caregivers and the other play and learning resources and activities in the centre that she perceives as preferable (see section 6.1.1). It is evident that Kelly struggles to reconcile touch screen use with her perception of play and learning.

In practice, Kelly is reluctant to use touch screens in the centre due to: i) too much usage at home; ii) other more useful or preferable resources and activities in the centre; iii) not enough focused time for using touch screens with children; iv) the difficulty of

managing children’s touch screen use well, and iv) teacher’s dominant role as educators instead of babysitters. However, she agrees touch screens can be used when teachers and children are tired and need to refocus.

Further probing of Kelly’s viewpoints helps to illuminate the reasons for Kelly’s reluctance to use touch screen devices. This reluctance comes not only comes from her perceptions about children’s play and learning, but also her beliefs about the expectations of caregivers, and the primary function or responsibility of the ECE centre and teachers. She mentioned that caregivers expect their children to learn some useful knowledge and skills in the centre, such as language and social skills, while she also noted that many caregivers have an impression of the ECE centre and teachers as a babysitting place and people. She does not want to confirm, prove or strengthen this latter impression through the use of touch screen devices in the centre. On the contrary, she wants to counter this impression by highlighting the educational function or responsibility of the ECE centre and teachers, so as to prove to caregivers that the ECE centre and teachers are more than just babysitters and that it is primarily an educational place with a group of educators. It can be inferred that, from her view, the use of touch screen devices is, most of the time but not all the time, a babysitting tool with little educational function; but in her perceptions, the function or responsibility of the ECE centre and teachers is primarily education, although it also inevitably involves babysitting. This contradiction could account for her reluctance to use touch screen devices.

Table 6.7: Competing Voices within Kelly and the dominant Voice

Viewpoints of Kelly	<ul style="list-style-type: none"> i) I can see the policy and curriculum advocating the use of ICT, but we have many more preferable resources and activities in the centre, in which children should be preferentially engaged. ii) Children make too much use of touch screens at home, so here in the centre, we do more non-digital play-based learning activities with them. iii) Caregivers have expectations as well as impressions about us. If we give children touch screens in the centre, it proves caregivers’ impressions of our centre and teachers as babysitting. We are more than babysitters. iv) I am not totally against touch screen use and I can see some learning potentials, but we don’t have enough focused time for touch
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	screens with children and it is difficult to well manage children's touch screen use.
Competing Voices within Kelly	<ul style="list-style-type: none"> i) Policy/ Practice: Voice of support relating to policy and curriculum versus Voice of opposition or reluctance in practice ii) Responsibility of ECE centre and teachers: Caregivers' impression of ECE as involved in babysitting versus Teachers' perception of ECE having a learning and education purpose iii) Time/Space: Touch screen play versus play with non-digital resources or activities
Dominant Voice of Kelly	Voice of opposition or reluctance
Dominant role of teachers	Gatekeeper

II. Competing Voices within Maggie

Maggie expressed a strong Voice of opposition or reluctance in this study. She expressed a direct dislike of touch screen use because i) it is entertainment instead of learning, ii) it is a distraction from play-based learning activities and other more worthwhile activities and iii) it is an individual activity and lacks opportunities for socializing and sharing learning activities. She further argues that touch screen devices should not have a place in the centre because of i) the young age of children, ii) the way children use touch screens including the difficulty of managing children's usage (for example, children are fighting, screaming, yelling, and keep pushing the home button and iii) too much usage at home. She tends to play the role of gatekeeper in children's use of touch screen devices as she restrains children's access to touch screens.

However, even in Maggie's strong Voice of opposition, contradictions can be found. I argue that these contradictions suggest Maggie's competing internal voices. Firstly, even though Maggie is against touch screen use, she recognises that it is understandable if touch screen devices are used for children's learning, such as for the modelling of a new language. Thus, her opposition could be due to her not having seen touch screens primarily used as a learning tool. Maggie argues that touch screens should not have a place in the centre, but in practice, she uses them as a last resort when a child is really upset and she admits such usage works very well. It follows that she can still see some, even though not much, value in touch screen use in the centre.

Therefore, even in the strong Voice of opposition or reluctance, a small Voice of conditional support can be heard. Maggie doesn't make an absolute claim for non-use but can see some value and tolerates limited use.

Table 6.8: Competing Voices within Maggie and the dominant Voice

Viewpoints of Maggie	<p>i) Using touch screens is entertainment instead of learning, a distraction from play-based learning activities and other more worthwhile activities, an individual instead of shared learning opportunity.</p> <p>ii) I don't think children need touch screens in the centre. However, if it is used for learning, I can understand but still restrict it to limited use.</p> <p>iii) I don't like using touch screens, but I used it as a last resort.</p>
Competing Voices within Maggie	A stronger Voice of opposition or reluctance versus a softer Voice of conditional support in some special cases
Dominant Voice of Maggie	Voice of opposition or reluctance
Dominant role of teachers	Gatekeepers; constraining

III. Competing Voices within Sarah

Sarah expresses a strong Voice of support for children's touch screen use as she views touch screens as a learning tool that can direct or be directed at children's interest in learning, and open up a wider world for children and extend their learning. She tends to adopt the role of a scaffolder in children's touch screen use most of the time, as she provides access to and offers guidance about children's touch screen use.

However, Sarah's support for touch screen use is qualified. She adds conditions to her Voice of support, including the need for supervision and guidance, permitting only a limited amount of time, using it for learning purposes, and not being used as a babysitter. In this way, she makes her Voice qualified rather than absolute.

By comparing touch screen use at home and in the centre, Sarah emphasizes 'learning', such as gathering information and research, as a primary purpose of children's touch screen use and a core responsibility of ECE centre and teachers. This educational focus of Sarah resonates with Kelly's perception of the function and responsibility of ECE

centres and teachers, although Kelly also expresses a competing Voice of opposition or reluctance about touch screen use.

Although Sarah believes touch screens can provide learning opportunities for children and can have a place in the centre, she also expresses her concerns about i) the inappropriate content online, ii) children’s preference for playing games rather than learning and iii) touch screens used as a babysitting tool for children. To relieve such concerns, Sarah proposes to put locks on the devices. This approach from my interpretation gives weight to the Voice of opposition or reluctance and changes her role to that of a gatekeeper who restrains children’s access to touch screens.

Therefore, even in the strong Voice of support, a small Voice of opposition or reluctance can be heard from her concerns. This minor Voice among the dominant Voice of conditional support, from my interpretation, shows a plurality of Voices and provides evidence of Sarah’s competing internal voices.

Table 6.9: Competing Voices within Sarah and the dominant Voice

Viewpoints of Sarah	i) Touch screens can be great learning tools for children, but they need to be used for learning, under the supervision and with a time limit. ii) Support for children’s touch screen use but with concerns about the inappropriate content online, children’s preference for playing games rather than learning, and being used as a babysitter.
Competing Voices within Sarah	A stronger Voice of support with conditions versus a small Voice of concern
Dominant Voice of Sarah	Voice of conditional support
Dominant role of teachers	Scaffolder; supporting

6.1.4.2 Competing Voices within and across the group of teachers

In addition to competing Voices within individual teachers, we can also find competing Voices within and across the group of teachers.

For the group of teachers who expressed a dominant Voice of opposition or reluctance, conflicting viewpoints can be found with regards to their understanding of babysitting.

On the one hand, these teachers highlight that babysitting is not the role of the ECE teacher or the function of the ECE centre (Kelly as an example), but on the other hand, they admitted that in practice, they sometimes used touch screens as ‘a last resort’ to comfort a crying child when needed (Maggie as an example), which from my interpretation, suggests their use as a babysitting tool. This contradiction depends on how ‘babysitting’ is defined. When it comes to the role of the ECE teacher or the function of the ECE centre, education is primarily emphasised, but care is also part of a teacher’s role and is the legal and ethical responsibility of the centre. This includes supervising a child, keeping them safe, providing comfort, and ensuring their emotional and physical wellbeing. This level of care is basic rather than a last resort.

From the viewpoints that teachers expressed, there is no teacher who claims touch screen use is unconditionally good; also, there is no teacher who asserts touch screens absolutely have no place at any time for any reason in the centre. Voices generated from teachers are more complex and nuanced than an absolute claim. Despite disputes, there is a common viewpoint shared by all five teachers. They all believe that touch screen use should be conditional, that it should be used for learning, for a limited time and under the supervision.

Two competing Voices emerged from the multiple viewpoints teachers expressed: one Voice of conditional support and the other a Voice of opposition or reluctance. These two Voices have implications for a teacher’s role. Within the Voice of support under guidance or supervision, the teachers’ role can be described as a scaffolder, who tends to provide access to and offer guidance about children’s touch screen use, but still, for learning. Within the Voice of opposition or reluctance, a teacher’s role can be described as a gatekeeper, who tends to restrict children’s access to touch screens.

6.2 Chinese immigrant caregivers’ viewpoints

In this section, I present and discuss the viewpoints of two Chinese caregivers’ (Jayden’s grandpa and Evan’s mum (both are the main caregivers) on children’s use of touch screen devices. To understand Voice socially and culturally, as Bakhtin (1981) argued, I start by investigating Chinese caregivers’ perception of children’s play and

learning in the Chinese cultural background. Then I further explore their views on children's touch screen use and their roles in children's touch screen use.

6.2.1 Caregivers' perceptions of children's play and learning

With regard to the relationship between play and learning in general, Jayden's grandpa shared his view that learning is more valued than play in Chinese culture and communities. It suggests that he saw learning and play as separate and distinct entities. As discussed in chapter 4, to ensure the validity of the data, I present his original words in the Chinese language and my translation in the English language.

L1 Dandan (Researcher): (Original words) 您对孩子的玩和学习有什么看法？您注意到在这个问题上，中国和新西兰有些不同吗？
(Translation) What's your view about children's play and learning? Have you noticed some differences on this issue between China and New Zealand?

L2 Jayden's Grandpa: (Original words) 我觉得中西方父母对孩子的关爱应该是一致的，只是因受到文化背景与历史影响，在教育方式上有所不同。我们先讲中国，中国社会对学习要更看重一些，我们中国古代就主张孩子在三岁的时候就要对他进行启蒙教育，有的家庭还要特别请老师来家里给孩子进行教育。中国古代人把“天地君亲师”摆在神的位置上，对老师非常尊敬，那目的是什么？就是要让孩子接受教育。
(Translation) I think that the care of Chinese and New Zealand caregivers for children should be the same, but the way of education is different because of the different cultural background and history. Let me talk about China firstly. I think learning has more importance in Chinese society. In ancient China, people advocated that children should be enlightened when they were three years old. Some caregivers also invited teachers to come to their homes to educate their children. The ancient Chinese people recognised five categories of people - the Heaven, the Earth, the Emperor, the Parent and the Teacher - in the position of God to worship, so Chinese people have given great

respect to teachers since ancient times.

Jayden's Grandpa pointed out that play has been less valued than learning in Chinese traditional culture and society. –

Jayden's Grandpa: (Original words) 在新西兰有一种观点是，应该让孩子们尽情地玩耍，让他们快乐地度过童年。但是，我们应该思考，什么才是真正的快乐？我看到在国外小孩子背个包高高兴兴去学校，也没有什么功课和作业，很轻松，大家都快快乐乐地过日子，但我认为那只是短期的快乐，也就是轻松点。如果孩子不知道他的前途在哪里，实际上他的内心深处是彷徨的，不快乐的，有时候学习虽然会让他辛苦一点，但是同时也会让他内心有方向，有目标，有希望。当他实现目标有所成就后，其实他会经历更高层次的快乐。我还有一个观点，学习就一定是件不快乐的事吗？其实小孩并不是只有在玩的时候才是快乐的，学习也可以让他们很快乐。有时候我们教他认识新事物了，他心中会有有一种成就感，其实我觉得这种对自己学到新知识的成就感是一种更加深层次的快乐，也就是说，不仅仅是我今天玩了一天很快乐，是吧？ **(Translation)** Some people here in New Zealand think that children should play more to make them live a happy childhood life. However, we should think about, what is true happiness? I have seen that children are happy to go to school with their bag, there is no homework, school life is very easy and everyone looks happy, but I think this is just a short-term pleasure; that is, free from making an effort or overcoming difficulties. If the child does not know where his future is, his innermost feelings are uneasy and unhappy. Learning might sometimes make a child feel it is not an easy job, but at the same time, he will have a direction, a goal, and a hope. After they meet their goals and reach some achievements, they will experience a higher level of happiness. I sometimes think, does learning necessarily be an unhappy thing? Actually, I think not only play but also learning can make a child feel happy. Sometimes when a child learns something

new, he will get a sense of self-accomplishment, which I think is a higher level of happiness. Children are not just happy about playing for a whole day, right?

Jayden's grandpa's observation was that there is a view in New Zealand society that children need to play more for them to have a happy childhood. Jayden's grandpa offered his view that not only play but also learning can make children feel a sense of happiness.

From Jayden's grandpa's view, we can feel a split between play and learning: learning is learning, and play is play. Learning is highly valued and can bring a higher level of happiness. On the contrary, the perception is that play can only bring short-term pleasure. Learning, from Jayden's Grandpa's view, is a productive activity as the child can gain new knowledge and skills as well as a sense of self-accomplishment from learning. By contrast, he sees that play requires no serious effort and provides little achievement and only some short-term pleasure. He expressed his appreciation for the realization of long-term personal values, such as overcoming difficulties and persistence, rather than short-term entertainment and pleasure.

This view that learning is about gaining knowledge and skills, while play is more about relaxation or entertainment, was shared by Evan's mum.

Evan's Mum: (Original words) 我觉得学习主要是关于学习成果，比如获得新知识，它是关注于问题的解决；但玩更多的是一种经历，做好玩的事。 **(Translation)** I think learning is about learning outcomes, such as new knowledge gain. It is about specific problem solving while play is more about the experience, doing something interesting.

When it comes to whether children's touch screen use is more about learning or more about play, Evan's mum provided her view:

Evan's Mum: (Original words) 我的观察是它们更倾向于是玩。有很多学习软件，孩子们可能坚持不下去，但是那些注重体验和结果的游戏，孩子们很能坚持。 **(Translation)** My observation is that they [touch screens] are more of play. There is lots of learning software on devices

but children may not stick with them. However, children can stick with games that focus on children’s play experience and outcomes.

In Evan’s mum’s comment, there are real tensions regarding play and learning in children’s touch screen use. She recognised there is software that supported children’s learning but felt that children preferred games that were more about play than learning. Jayden’s grandfather has a different view:

Jayden’s grandpa: (Original words) 触屏设备是一种学习工具。孩子使用触屏设备可以学到科学知识,学习时心情愉快,他的求知欲也会增强。
(Translation) Touch screens are a kind of learning tool. By using touch screen devices, a child can gain the knowledge of science and technology, learn more happily, and his desire for learning will be enhanced.

Jayden’s grandpa’s comments show his view that a touch screen is a learning tool and children’s touch screen use is seen to be mainly about learning. He notes that by using this learning tool, children can learn more happily. This caregiver’s comment showed that learning and entertainment in children’s touch screen use is not a simple binary, but can be both.

In summary, these two Chinese caregivers’ viewpoints on children’s play and learning are presented in the table below:

Table 6.10: Chinese caregivers’ perception of children’s play and learning

Social and cultural expectations	Learning is highly valued in Chinese culture and society
Perception of play	Play is viewed as relaxation and entertainment, free of effort and tension, providing only short-term pleasure.
Perception of learning	Learning is viewed as gaining new knowledge and skills, involving effort and sometimes involving the need to overcome difficulties and to require persistence. Learning provides a sense of accomplishment, self-realisation and long-term happiness.
Relationship between play and learning	i) Children cannot just play all the time without learning, so caregivers should guide children’s play to help them learn something from their play.

ii) Learning can also be a happy thing for children, just as play is, and so caregivers should guide children to experience a sense of accomplishment from learning activities, and seek to stimulate children's inner motivation for learning.

Within their perceptions of children's play and learning, they seem to hold different views on children's touch screen use with regards to whether it involves learning or just entertainment. While Evan's mum viewed children's touch screen use as entertainment mainly, Jayden's grandpa seemed to consider it as more of a learning tool, which can also include play.

6.2.2 Caregivers' views of children's touch screen use at home

Both these Chinese caregivers stated that their children use touch screen devices at home on a daily basis. There were similarities as well as differences within and across their viewpoints on this usage. The similarities are that they both believed touch screens can provide learning opportunities for children, and they both thought conditions should be placed on children's use of touch screens. The differences were that while Jayden's grandpa viewed touch screens as a positive learning tool, Evan's mum perceived that there were more negative effects of children's touch screen use.

While a Voice of conditional support is apparent from the viewpoint that both caregivers expressed, the Voice of opposition or reluctance can also be discerned. This is related to the extent of positive or negative effects of using touch screens these caregivers have seen on children's learning and socialisation. When they had witnessed more positive effects of touch screen use on children, they expressed more supportive attitudes, and vice versa. Their views also related to the amount of time they spent on scaffolding the child's touch screen use. When caregivers spent more time on scaffolding their children's touch screen use, their attitude to the use of these devices was more supportive, and vice versa.

6.2.2.1 The Voice of conditional support

The Voice of conditional support can be found in both caregivers' viewpoints and actions because they allowed the children to have daily access to the devices. Both caregivers stated that these devices could help them educate their children.

Jayden's grandpa: (Original words) 它能帮助孩子拓宽知识面, 丰富词汇量, 提高语言能力, 增进他们对学习的兴趣, 加强与同伴的交流, 提高他们的社交自信心。通过模仿卡通里面的榜样角色, 有助于他们养成一些好习惯。**(Translation)** It [Using touch screens] can help children to expand their knowledge, enrich their vocabulary and improve language skills, improve their interest in learning, improve communication with peers and improve social self-confidence, and form good habits by imitating role models in children's cartoons.

Evan's Mum: (Original words) 我得承认有些 Apps 确实很棒, 能帮助我教育孩子。他们能通过玩教育游戏学到很多新技能, 也学会了识字。**(Translation)** I should admit, some apps are really great and can help me educate the children. They can learn lots of new skills through playing educational games. Also, they can learn to read.

In addition to viewing touch screen devices as general educational tools, both caregivers provided details of how touch screen devices can help them educate their children in various specific ways, including knowledge expansion, vocabulary enrichment, language skills improvement, confidence building in social activities with peers, and forming good learning habits. From these comments, it is evident that touch screens were viewed as a learning tool that can bring about a broad range of learning opportunities for children.

Jayden's grandpa: (Original words) 使用触屏设备, 孩子就不会和他的同龄孩子们因信息落后而产生隔阂。比如, 大多数孩子们都知道 Octonauts, 就会经常在一起谈论, 他要是不知道的话就会被同伴孤立了。和同龄孩子们有共同话题会有助于他的人际交往, 多交朋友又能让他更快地适应和融入本地的文化环境。**(Translation)** Using touch screen devices, a child will not be isolated from his peers because

of disadvantages of information sources. For example, most children know Octonauts¹⁴ and they talk often. If he doesn't know [this] then he might be isolated from his peers. Having common topics with his peers is helpful for interpersonal communication, and making more friends. It can help him adapt and integrate into the local cultural environment more quickly.

Jayden's grandpa's idea that the use of touch screens can address the disadvantages children may experience in terms of access to information sources resonates with teachers' view of fair access to devices and learning opportunities. Jayden's grandpa further provided his view on the role touch screens can play in assisting children to make friends and having something to talk about with peers. Overall, Jayden's grandpa expressed a very positive attitude toward children's use of touch screen devices, mainly because of the positive effect of using touch screens on children's learning and socialisation.

This positive effect of using touch screens on children's learning was also expressed by Evan's Mother.

Evan's Mum: (Original words) 我觉得它能帮助 Evan 拓宽知识面，提高他的数字素养..... 他能读一些字母和单词，能唱很多儿歌，他还能自己安装 Apps, 这个让我很吃惊。**(Translation)** I think it [using touch screen devices] can help Evan to expand his knowledge and improve his digital literacy. ... He [Evan] can read the letters and even words and sing lots of children's songs, and he can install Apps all by himself, which surprised me a lot.

Here Evan's mum describes touch screen devices as a learning tool for her child as they can expand his knowledge and digital literacy. She also notes that the learning outcomes her child achieved, such as reading, singing and some digital skills, had surprised her.

While both caregivers expressed a Voice of support toward children's touch screen use

¹⁴ Octonauts: refers to an animated series for children.

for a learning purpose, their support is conditional. They both emphasize ‘time’ as a key condition for children’s touch screen use.

Evan’s Mum: (Original words) 我并不反对孩子使用手机或 iPads，但是我认为我们需要控制他们使用的时间，因为他们用得太多了。

(Translation) I am not against children using mobile phones or iPads, but I think we need to control the time because they are used too much.

Jayden’s grandpa: (Original words) 我们和他达成了一个口头约定，每次用不超过 20 分钟，他也同意这个规定。我们家有个计时器。每次孩子们看 iPad，我就设定 20 分钟。计时器一响，他们就需要关掉 iPad。

(Translation) We reached a verbal agreement with him [Jayden], playing no more than 20 minutes each time, and he is happy with this rule. We have a timer at home. Every time the kids [Jayden and his younger brother Damian] watch the iPad, I set up the timer to ring after 20 minutes. They will need to turn off the iPad when the timer rings.



Figure 6.2: Jayden’s use of touch screens at home with a timer

While both of them highlighted the duration of the time on the device as a key condition for children’s touch screen use, Jayden’s grandpa went a step further to practise some effective strategies to limit Jayden’s touch screen time. He shared his strategies as follow.

Dandan (Researcher): (Original words) 那要是时间到了小孩还不关掉

iPad, 您怎么办? **(Translation)** How would you do if the child doesn't turn off the iPad when the time is up?

Jayden's grandpa: (Original words) 我让他们事先知道我信任他们, 并且我相信他们会遵守我们的协议, 但是如果他们不能遵守, 他们的行为就表明了他们没有成熟到可以使用 iPad, 那么我就拿走 iPad, 然后等待一段时间后, 他们才能再用它。这样, 我们之间就建立了一种信任机制, 他们学会了尊重这种信任, 并为自己的行为承担后果。

(Translation) I let them know in advance that I give them trust and I believe they will comply with our agreement, but if they cannot comply then their behaviour shows that they are not mature enough to use the iPad and I will take the iPad away and wait for some time before they can use it again. In this way, we establish a trust mechanism between us, and they learn to respect this trust and take consequences for their behaviours.

Here Jayden's grandpa provides guided access to Jayden's use of touch screen devices. He allows Jayden the choice to use an iPad within agreed time constraints while also letting him experience the consequences of his choices. From his grandpa's viewpoint, Jayden's use is based on mutual trust and understanding. Jayden's grandpa thinks that in this way Jayden will learn to respect the trust he is given and to take responsibility for his engagement with touch screen devices. In this way, Jayden's grandpa adds strong points to the Voice of conditional support by demonstrating how to scaffold children's touch screen use with time limits.

Evan's mum also imposed a time restriction on iPad use. She described this as follows:

Evan's Mum: (Original words) 他在家每次用 iPad 的时间大约是 30 分钟, 平均每天两小时。我们有口头约定说不超过这个时间, 但实际上他是想看就看, 没有固定的时间。**(Translation)** He uses the iPad for 30 minutes each time and an average of 2 to 3 hours per day at home. We had a verbal agreement of not exceeding this time limit, but actually, he just wants to see it, and there is no fixed time for him.

From this comment, it seems that even though there was a time limit, this time limit didn't work in practice as Evan could use a touch screen device when he wanted to without fixed time.

The above-stated viewpoints are presented in the following Table. From these viewpoints, a Voice of conditional support can be generated.

Table 6.11: Viewpoints of the Voice of conditional support

Description of viewpoints	
Viewpoints	<p>Touch screens can be a learning tool with great learning opportunities.</p> <p>Touch screen devices can support children's knowledge and skills learning and direct children's learning interests.</p> <p>They can help children's communication and confidence within peer social activities;</p> <p>They can help children form good learning habits through role modelling in cartoons.</p> <p>They can improve children's digital literacy.</p>
Conditions	Limiting time when they were only playing for entertainment.
Generation of the Voice	
Voice	Voice of Conditional Support

In summary, these two Chinese caregivers expressed a Voice of conditional support for children's touch screen use, but the nature and extent of their support are quite different. They both listed learning possibilities for children's touch screen use and they both talked about limiting the time for touch screen use. While Jayden's grandpa imposed a time limit, he made the consequences clear if these conditions were not met and gave Jayden trust. In this manner, the caregiver gave the child agency but at the same time provided boundaries, which is the Voice of conditional support with scaffolding. While Evan's mum also prescribed a time limit for Evan's touch screen use, this rule seemed to fail to play out in practice. This dissonance, alongside other negative effects Evan's

mum has noticed about children's touch screen use, might account for the generation of another Voice. I discuss this Voice in the following section.

6.2.2.2 The Voice of opposition or reluctance

While the Voice of conditional support was justified by the learning opportunities that touch screen devices and other digital technologies might bring to children, viewpoints about the negative effects that touch screen activities have on children were also expressed. These led to the generation of a Voice of opposition or reluctance.

As noted in the previous section, Evan's mum recognised touch screen use could offer some learning opportunities for children. However, she considered that there were more negative effects of such usage.

Evan's Mum: (Original words) 手机和 iPad 对孩子非常有吸引力.....比起益处, 我认为它更加有害, 因为 Evan 年龄太小, 没有自我控制能力。 **(Translation)** Cell phones and iPads are very attractive to children... I think it [Evan's touch screen use] is more harmful than helpful because Evan is too young to have the ability of self-control.

Here Evan's Mum indicated that she viewed touch screen use as more harmful than helpful for Evan because his age meant he had limited capacity for self-control. Interestingly, concerning children's self-control, it seems that Jayden's grandpa has sorted out a way for Jayden to know and manage the time he spends on touch screen use by forming an agreement with him about the time limit and letting him know the consequence of not following this. He also used a timer to assist Jayden with time management (see section 6.2.2.1).

Evan's Mum: (Original words) 孩子应该自由发展, 与自然接触, 并与其他人交流, 但玩手机或 iPad 会限制孩子的自由发展..... 他们不喜欢交新朋友, 而是喜欢躲在手机或 iPad 后面。 **(Translation)** Young children should develop freely, get in touch with nature, and communicate with others, [but] playing cell phones or iPads limits children's free development. ... they don't like to get in touch with new

friends and prefer to hide behind the cell phone or iPad.

Evan's mum further shared her views on the value of children's free development. From her perception, getting in touch with nature and communicating with others are important aspects for children's free development. In this comment, she points out that when children use touch screen devices they do not always contact and spend time with friends. She noted that at times when he was concentrating on the iPad, he was also reluctant to respond to her. Her view that using a touch screen may lead to poor socialisation was also shared by teachers (see section 6.1.2, teachers' viewpoint 8). However, her view in this respect conflicted with Jayden's grandpa's view that using touch screen devices can help children's socialisation as children have more topics in common to share with their peers. Evan's mum continued:

Evan's Mum: (Original words) 我注意到玩手机或 iPad 给他造成了一些伤害，例如，视力下降和脊柱不舒服。此外，他还有点沉迷于玩手机或 iPad。在玩手机或 iPad 时，他非常专心，不愿回答我或与其他人讲话。玩手机或 iPad 会使他脾气更暴躁，有时他喜欢哭或闹，尤其是当他想继续玩而我不准他玩的时候。**(Translation)** I noticed that playing with the cell phone or iPad has caused some harm to him such as decreased vision and spinal discomfort. ... Playing with a cell phone or iPad makes him more tempered. Sometimes he cries or makes noise, especially when he wants to continue playing and I don't allow him to do so.

In addition to being a challenge to children's self-control ability and a barrier to children's free development and social interaction, Evan's mum expressed viewpoints to do with: i) the harm to physical health such as decreased vision and spinal discomfort and ii) poor emotional control. Taken together these viewpoints form part of the Voice of opposition or reluctance.

These viewpoints are presented in the following Table:

Table 6.12: Viewpoints in the Voice of Opposition or Reluctance

Description of viewpoints

Viewpoints	<p>Touch screen devices are more harmful than helpful for children as they can be:</p> <p>A challenge to children’s self-control ability, for example, emotional control;</p> <p>A barrier to children’s free development;</p> <p>Limiting their opportunities to socialise</p> <p>Harm to children’s physical health;</p>
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Generation of the Voice	
Voice	Voice of Opposition or Reluctance

In summary, this section presented caregivers’ viewpoints on children’s use of touch screen devices. Two competing Voices were generated from the viewpoints expressed. These competing Voices and their descriptions of their viewpoints are summarized in the table below:

Table 6.13: Competing Voices and descriptions of viewpoints

Voices	Voice of Conditional Support	Voice of Opposition or Reluctance
Viewpoints	<p>Touch screen devices can be an educational tool with great learning opportunities.</p> <ol style="list-style-type: none"> 1. Touch screen devices can help children’s knowledge and skills learning and direct children’s learning interests; 2. They can help children’s communication and confidence-building in peer social activities; 3. They can help children’s good habits formation by role modelling in cartoons. 4. They can improve children’s digital literacy. 	<p>Touch screen devices are more harmful than helpful for children as they can be:</p> <ol style="list-style-type: none"> 5. A challenge to children’s self-control ability, for example, emotional control; 6. A barrier to children’s free development; 7. Limiting their opportunities for socialising; 8. A harm to children’s physical health;
Conditions	<p>Conditions of support for the use of touch screens:</p> <p>Limiting time when they were only playing for entertainment.</p>	<p>Still allow children’s access to touch screen devices</p>

6.2.3 Caregivers’ views of their roles: An active scaffolder versus a permissive gatekeeper

As discussed in section 6.2.2, both Chinese caregivers viewed touch screen devices as having potential as an educational tool for enhancing children's learning at home. Guided by this opinion, Chinese caregivers tended to provide their children with access to touch screen devices. However, their viewpoints on the conditions for use and their expression of reluctance or opposition were different.

From viewpoints shared on their roles in children's touch screen use, it seems that Jayden's grandpa expressed a view of an active scaffolder, which was more consistent with his Voice of conditional support, as someone who actively supports and provides guidance on touch screen use. A more complex Voice can be found in the viewpoints Evan's mum expressed. On the one hand, she contributes to a Voice of conditional support due to the learning opportunities touch screens can bring. On the other hand, she also contributes a number of viewpoints to a Voice of opposition or reluctance due to negative effects touch screen use might have. Therefore, it seems that Evan's mum expressed both a Voice of conditional support and a Voice of opposition or reluctance. This contradiction had implications for her view on her role in relation to children's touch screen use, which was more consistent with that of a permissive gatekeeper, someone who wants to restrict children's touch screen use, but still allows use.

With regards to the role of an active scaffolder, Jayden's grandpa shared his active strategies for guiding children's touch screen use.

Jayden's grandpa: (Original words) 如果我们不给孩子这些指导，孩子可能只想看他从幼儿园的朋友那里听到的动画片，但是如果我们有意识地，有目的地给他指导，他也会很乐意尝试一些其他东西。

(Translation) If we don't give these instructions to the child, the child may just want to watch the cartoon he heard from his friends in the kindergarten, but if we give him guidance consciously and purposefully, he will also be happy to try some other programmes.

Jayden's grandpa: (Original words) 如果我们给他引导，他就会按照这个引导找到新的兴趣点。这些新的兴趣点会不断发展。在看动画片的状态下，他就不仅限于他刚开始时的那个兴趣点，而是继续扩展新的

兴趣点。他的兴趣点在不断变化和扩大。**(Translation)** If we give him an ‘introduction’, he will follow this ‘introduction’ to find new points of interest. These new points of interest will be leaping and expanding. In the state of watching cartoons, he will not be limited to just the one point of interest he had at the beginning but will continue to expand new points of interest. His points of interest are constantly changing and expanding.

Jayden’s grandpa: (Original words) 我曾经向他展示过一些要看的東西。

如果他看了之后得到一些启发，他会来找我问问题。这就会使他与外界保持联系，而不仅限于他的兴趣。在这个过程中，可能会激发他的好奇心，并激发他进一步探索的愿望。这两个是他学习或我们教他东西的绝好机会……在这种情况下，呈现给他的就不仅仅是他这个年龄感兴趣的内容，而是有更多的选择。**(Translation)** I used to show him [Jayden] something to watch [on touch screens]. If he gets some inspiration after he watches it he will come to me and ask questions. This will make him keep in contact with the outside world, instead of being limited to his interests. During this process, his curiosity might be inspired and his desire for further exploration would be stimulated; following these two [curiosity and the desire for exploration] is a great opportunity for him to learn something or for us to teach him something... In this case, he will not just be presented with what he likes to watch at his age, but has more choices.

From these comments, Jayden’s grandpa demonstrates an active scaffolding role in children’s touch screen use. He used an example to demonstrate how to guide children’s interest to explore broader learning contexts in their use of touch screens. Through this active scaffolding process, the caregiver turned the child’s interest in just being entertained (watching videos) to learning new things in wider fields. This caregiver’s comment showed that entertainment and learning are not binaries but can be integrated into children’s touch screen use.

While Jayden’s grandpa demonstrated a role of an active scaffolder by providing access to and guidance on Jayden’s touch screen use, Evan’s mum expressed a role of a

permissive gatekeeper, who wanted to restrict but still allowed children's use of touch screen devices. Although a strong Voice of opposition or reluctance was discerned in Evan's mum's viewpoints (see section 6.2.2.2), she still gave access to Evan's touch screen use. She shared her reasons for allowing Evan's touch screen use as follows:

Evan's Mum: (Original words) 我是个全职妈妈，我需要照顾 Evan 和他的弟弟，还要做家务，非常忙。有时他们很吵，给个手机可以让他们安静一会儿，也可以给我一点时间。**(Translation)** I am a full-time mum and I need to take care of Evan and his younger brother. I am very busy with my housework. Sometimes they are quite noisy and giving them a cell phone can keep them quiet for a while, which can give me some free time.

Evan's Mum: (Original words) 实际上，我讨厌孩子们玩手机或 iPad。但是，我需要照顾 Evan 的弟弟，所以我没有足够的时间陪伴他，这导致他更多地玩手机和 iPad。我也很无奈。另外，从整个社会现状来看，大多数孩子都玩手机和 iPad，这种趋势很难改变。再说，就算我不给 Evan 玩手机或 iPad，我的家人也不配合，他们给孩子们这些设备。**(Translation)** In fact, I hate kids playing with cell phones or iPads. However, I need to take care of Evan's younger brother, so I don't have enough time to accompany him [Evan], as a result, he plays more on cell phones and iPads. I am helpless about this. In addition, from the current situation of the whole society, the status quo is that most children play on phones and iPads, and this trend is difficult to change. Besides, even if I don't want Evan to play with the cell phone or iPad, my family members don't cooperate with me, they give these devices to children.

From Evan's mum's comments, although she allowed Evan's use of touch screen devices, she expressed her helplessness about this choice. The reasons for making allowances include i) Time – she was busy looking after two children and housework, so she didn't have enough time to accompany Evan, thus she gave Evan touch screen devices as a babysitting tool to keep the child 'busy' and quiet; ii) The trend of the

whole society – she saw the inevitability of children’s touch screen use in this digital era, which is something that is certain to happen sooner or later; iii) The lack of cooperation by her family members – other family members would let Evan have touch screen devices even though she restricted access, which is again inevitable.

In terms of the inevitability of children’s touch screen use, Evan’s mum further shared her views:

Evan’s Mum: (Original words) 既然我们无法改变这个趋势，那我们就要与时俱进，利用它在促进孩子学习和拓宽视野方面所发挥的积极作用，同时监控它对儿童的负面影响。**(Translation)** Since we can’t change this trend, then we need to keep up with the times, to take advantage of its positive aspect of enhancing children’s learning and broadening their horizons, at the same time as monitoring its negative effects on children.

Evan’s Mum: (Original words) 我也不希望我的孩子在与同龄人交流时完全听不懂网络术语。这也是一种社会需求。**(Translation)** I also don’t want my kids to be completely lost in the internet jargon when they communicate with their peers. This is also a social need.

From the comments of Evan’s mum, we can see that although she noticed the negative sides of children’s use of touch screens and expressed a Voice of opposition, she still chose to give Evan access to touch screen devices; she wanted to restrict his touch screen use but she still allowed him to access the devices. She expressed that she feels helpless and that his use of these devices is inevitable. Since she felt powerless to change this trend or this inevitability, she chose to compromise and tried to take advantage of the positive aspects of such usage: a strategy of taking the essence and discarding the dregs.

She also mentioned using touch screens is a social need, not only to keep up with the times but also to keep pace in communicating with peers. This view contradicts her previous view that using touch screens will lead to children’s lack of socialising (section 6.2.2), which indicates competing Voices within an individual caregiver.

These two different views on caregivers' roles in children's touch screen use are summarized in the table below.

Table 6.14: Caregivers' views on their role

Role	An active scaffolder	A permissive gatekeeper
Viewpoints	Provide access to and actively offer effective guidance about children's touch screen use for learning.	Want to restrict but still allow children's touch screen use.
Dominant responsibility	Supporting; guiding; scaffolding	Allowing touch screen use while keeping an eye on negative aspects.

In summary, different viewpoints were presented by Chinese caregivers concerning their roles in children's touch screen use. Jayden's grandpa expressed a view that was consistent with his Voice of conditional support and adopted a role of an active scaffolder who provides access to and offers effective guidance about children's touch screen use for learning. Evan's mum expressed a more complex view: a role of a permissive gatekeeper who wants to restrict but still allows children's touch screen use. The reasons for such a view i) Time: she doesn't have enough time to accompany her child, so touch screens use is allowed as a babysitter; ii) Inevitability: A social need of keeping up with the times and keeping pace in communication with others; iii) The lack of cooperation by other family members.

6.2.4 Competing Voices of Chinese caregivers

6.2.4.1 Competing Voices within an individual caregiver

In the same way as I analysed teachers' Voices as in competition within an individual (see section 6.1.4.1), I present caregivers as expressing competing Voices because there are so many nuances and complexities in their viewpoints. By examining their interviews carefully, I identified some contradictions within the viewpoints the two caregivers presented, which gave an indication of competing Voices within an individual. Here I list the viewpoints expressed by Evan's mum to illustrate competing Voices within an individual caregiver and identify the dominant Voice.

I. Evan's mum's competing internal voices

The viewpoints expressed by Evan's mum were the most complex and contradictory of all the people in my study. Some of her points of view added weight to the Voice of conditional support, for example, touch screens can be a learning tool that can enhance children's learning (e.g. new knowledge, digital literacy and socialising). Her support was subject to conditions such as that a time limit should be prescribed for touch screen use.

However, she also expressed a strong Voice of opposition or reluctance. Evan's mum wanted to put more limits on children's touch screen use. She is worried about the impact on her child's physical health (for example, eyesight, spinal discomfort), development and self and emotional control.

Despite all these concerns, she still allows Evan to use touch screen devices on a daily basis. She states three reasons for giving Evan touch screen devices. First, she needs to use touch screen devices as a babysitter because she is very busy with a younger sibling and housework. She says she feels helpless and feels as if she has no other choice than to do this. Second, she sees that in the wider society everyone is using these devices so she views children's use of touch screen devices as inevitable. People will inevitably use them so there is a social need to keep up with the times and keep pace with the communication means used by others; she doesn't want to disadvantage her child by restricting his opportunities to access touch screens. The third reason is that even if she doesn't want Evan to play on a touch screen device, other family members do not cooperate to support her in this regard.

She has conflicting viewpoints on whether children's touch screen use promotes or hinders children's socialisation. On one hand, as noted above, she perceives that using touch screens is a social need to keep up with the times and communicate with peers. On the other hand, she contradicted this viewpoint when she stated that touch screens use limits her child's socialising. This conflict in viewpoints indicates the presence of an internal competing Voice for this caregiver.

From this discussion, we can see that Evan's mum expresses both a Voice of conditional support and a Voice of opposition or reluctance. From the strength of her viewpoints, she acts more in the role of a gatekeeper who wants to restrict children's touch screen

use, albeit a permissive gatekeeper who still allows children’s touch screen use.

Table 6.15: Competing Voices within Evan’s mum and the dominant Voice

Viewpoints of Evan’s mum	<p>i) I hate touch screens but I have to give them to my child because of my busy daily routine, the social need and the lack of cooperation of other family members.</p> <p>ii) Touch screens are more harmful than helpful for children in that they are a challenge to self-control and emotional management, a barrier to free development, harm to physical health and use can lead to a lack of socialising.</p> <p>iii) Touch screens could be an educational tool as they can enhance children’s learning, including their knowledge, digital literacy and socialising skills but such use has to be subject to conditions such as used within a limited time.</p>
Competing Voices within Evan’s mum	Voice of conditional support versus Voice of opposition or reluctance
Dominant Voice of Evan’s mum	Voice of opposition or reluctance
Role	A permissive gatekeeper

6.2.4.2 Competing Voices across caregivers

While Jayden’s grandpa expressed a clear Voice of conditional support toward children’s touch screen use, Evan’s mum expressed a more complex Voice with a mix of both a Voice of conditional support and a Voice of opposition or reluctance.

Conflicting viewpoints could be noticed concerning whether children’s touch screen use is mainly about entertainment or learning. While Evan’s Mum viewed children’s touch screen use as mainly about entertainment (see section 6.2.1), Jayden’s grandpa actively provided guidance for Jayden’s touch screen use for learning directed by his interests (see section 6.2.3). These differences might be due to the amount of time each caregiver could spend on scaffolding their child’s touch screen use: Jayden’s grandpa was able to spend time guiding Jayden’s touch screen use while Evan’s mum was very busy looking after two young children and doing housework, with limited support from family members.

Conflicting viewpoints could also be identified in the understanding of the relationship between touch screen use and socialising. Jayden's grandpa thinks that by using touch screen devices, Jayden can gain broader knowledge and widen his vision, can have topics to share with his peers, become more confident and make more friends. However, Evan's mum, although she agrees with Jayden's grandpa in viewing children's touch screen use as a social need, has found Evan doesn't want to communicate with other people when he is focused on playing on a touch screen device, so she suggests touch screen use acts as a barrier and can lead to poor socializing for children.

Furthermore, conflicting viewpoints could also be found in terms of children's self-control in their touch screen use. Evan's Mum observed that children at the preschool age had limited self-control ability (see section 6.2.2.2). However, Jayden's grandpa found a way for Jayden to understand and manage the time he spent on the touch screen by reaching an agreement with him on the time and letting him know the consequences of not following this agreement. He also uses a timer to assist Jayden in time management (see section 6.2.2.1).

6.3 Summary

In this chapter, I set out to find the competing Voices of New Zealand ECE teachers and Chinese immigrant caregivers surrounding children's use of touch screen devices in a New Zealand ECE setting.

From my literature review, I had expected that Chinese immigrant caregivers would have some views that were completely different from New Zealand ECE teachers. However, the similarities between the Voice of Chinese immigrant caregivers and the Voice of New Zealand teachers were much greater than I had expected. In addition, what I found was that there were competing Voices, both for individual teachers and across the group of New Zealand ECE teachers and also within individuals and across Chinese immigrant caregivers. Therefore, a key finding is that similar kinds of competing Voices: the Voice of conditional support and the Voice of opposition or reluctance existed within and across New Zealand ECE teachers, as well as within and across Chinese immigrant caregivers. The Voices of teachers and caregivers in my

study are not necessarily in competition with each other, instead, they are in competition within and across each group (see Competing Voices within and across New Zealand ECE teachers in section 6.1.4 and Competing Voices within and across Chinese immigrant caregivers in section 6.2.4).

Within these two overarching competing Voices, the viewpoints shared by teachers and caregivers to support each Voice are different, although there are also similarities. For example, within the Voice of conditional support, both teachers and caregivers highlighted the touch screen's value as a learning tool; both of them agreed to touch screens being used for a learning purpose and within a limited time. While teachers emphasized a touch screen's value as a tool for promoting educational equity and transition, caregivers pointed out issues of socializing, habit formation and digital literacy. Within the Voice of opposition or reluctance, both teachers and a caregiver expressed concerns that touch screen use will lead to poor socializing, but Jayden's grandpa suggested it would help the child to have common topics to talk about with his peers in social activities. While teachers seem to put more focus on the learning versus entertainment value of touch screens, the educator versus babysitter role of ECE teachers, caregivers seem to pay more attention to touch screens' effects on children themselves such as on their self-control abilities, free development and physical health. There are also different views with regards to adults' role in children's touch screen use. While some teachers tend to act in the role of scaffolders, others tend to in the role of gatekeepers. One caregiver in my study tends to act as an active scaffolder while the other caregiver is inclined to act as a permissive gatekeeper.

Chapter 7

Genres employed by children with touch screens: Competing Voices of learners

In the previous chapter, I presented the competing Voices of New Zealand ECE teachers and Chinese immigrant caregivers surrounding children's touch screen use. These Voices were generated from the viewpoints of a small number of participants - five New Zealand ECE teachers and two Chinese immigrant caregivers. My findings showed that similar kinds of competing Voices, the Voice of conditional support and the Voice of opposition or reluctance, existed within and across New Zealand ECE teachers, as well as within and across Chinese immigrant caregivers.

My literature review shows that four years old preschool children's voices were missing in this discussion, and it is these voices that I aim to explore in my study. From a Bakhtinian standpoint, Voice(s) is plural and multi-formed. This concept offers me a way of using genre to investigate children's Voices as it illustrates not only what people said (content) but also how they said it (form). This is of great importance especially when examining children's voices as their voices would be filtered substantially, if the richness of their body language is ignored.

In this chapter, I explore children's voices through their strategic employment of various genres in different spaces during their use of touch screen devices. Starting by introducing genre as a way of understanding children's Voices and competing Voices, I then present the six genres I identified during children's use of touch screens. I classified these six genres into two sets, Outside-in genres and Inside-out genres. These genres were identified because sometimes the influence of the adult's Voice on the child's Voice was evident (Outside-in genres), and at other times there was evidence of the child's agency in expressing their own Voice in accordance with their free will (Inside-out genres). Two Voices of children were discovered through these genres that they employed: Outside-in Voices and Inside-out Voices. I then explore how the children strategically employed different genres to orient themselves in and out of

relationships with others. As a result, competing Voices between children and adults could be discerned in children's strategic employment of various genres across spaces: the Voice of adult power versus the Voice of child agency. Among these competing Voices, a dominant Voice could be noticed in children's response to multiple voices. I conclude by arguing that children's everyday use of touchscreens is a form of Voice discoverable through genres.

The data sources I specifically drew from are: i) my fieldwork journals based on my observations at the centre; ii) videos of children's experiences of touch screen devices in the centre, at home and in the spaces in between; iii) interviews with teachers and caregivers, including initial interviews and following-up interviews; and iv) reflective sessions with children to further explore children's voices regarding their experiences with touch screen devices.

7.1 Genre as a way of understanding Voices

7.1.1 Genre and competing Voices

Genres, in which competing Voices play out, are recognisable through form and content uttered by participants in a certain context. In this study, children's use of touch screen devices provided the context. In the chapter, I use genre from a Bakhtinian standpoint as a way of understanding competing Voices, as it offers a way of investigating Voices, not only in its content but also in its multiple forms and the interactions of participants.

Then it comes to the question of how I discerned competing Voices in genres. In my study, competing Voices are discerned in the multiple genres that children employed strategically and creatively in different spaces. Children draw on these various genres in their experiences of touch screen devices in different spaces, to orient themselves into, or out of, relationships with others and self. The degree to which genres can be noticed and recognized by adults is largely determined by the extent to which a child's voice, verbal and non-verbal, content and form, visible and invisible, can be heard/seen and understood. Therefore, genre, as my unit of analysis, acts as a route to seeing competing Voices. My analysis of competing Voices provides a way of showing how genres orient competing Voices with regard to children's touch screen experiences.

In this chapter which discusses genres, I start by introducing my data of video, interviews and journal notes that cluster certain genres concerning children's strategic use of touch screens, and then present six genres classified into two sets according to the source of voices. It is not just one of these genres but their dialogic combination in relating to the others that gives them significance. I also create analytical memos for each genre, showing inductive thinking from the researcher's perspective. Competing Voices and dominant Voices are also presented through my academic analysis.

7.1.2 Six genres in two sets

In this study, genres, as a combination of content and form, were generated through children's verbal and non-verbal voices, children's choices and actions during their engagement with touch screen devices, and their interactions with others. Through children's strategic employment of various genres, competing Voices could be discerned, and the dominant Voice could also be noticed by the child's prioritisation of a particular Voice from these competing Voices.

Six genres were identified during children's engagement with touch screen devices in different spaces. These genres are the adult-led learning genre, the compliance genre, the invisible speaker genre, the child-led free play genre, the resistance genre and the whisper genre. According to the source of the child's voices, these six genres were classified into two sets: Outside-in genres and Inside-out genres. The Outside-in genre and Inside-out genre were used in White's (2009) study on toddlers metaphoricity in ECE. In her study, the Outside-in genres were recognised from children's acts that mimicked or demonstrated the context of home, while the Inside-out genres represented the official discourse of the centre, reified language forms passed down from adults to be learnt in order to grow and learn. From White's observation, the Outside-in genres were only recognised by caregivers, while the Inside-out genres were consistently recognised and responded to by teachers. Thus the 'outside' and 'inside' are identified from the perspective of the ECE centre in White's research. In my study, I use these two concepts but classify the 'outside' and 'inside' according to my interpretation of the source of the voices from the child's perspective.

If a child expressed a voice (verbal and non-verbal) which came from an outside source (usually from adults' voices in the context of ECE centre or home), and/or the child internalized the outside voice (from adults) into their own voice, then I consider the genre the child employed as the Outside-in genre. The outside-in genre reflects the influence of the adult's voice on the child's voice. This genre can be recognized by caregivers and teachers as well as myself as the researcher, according to the evidence of adults' previously expressed voices.

If a child expressed a voice (verbal and non-verbal) which came from the child himself or herself, according to his or her choice or free will, then I consider the genre the child employed as the Inside-out genre. The inside-out genre reflects the child's agency in expressing their own voice and making their own choices. This genre was more difficult to recognize than the outside-in genre because of the challenge of identifying the evidence that a voice came from the child themselves, instead of being a residue of adult agendas or goals. The approach I applied to identify the child's inner voice according to their free will is that, if the child's voice was different from the wish, command, intention and expectation of adults, and/or the child was trying to make different choices or set new rules, then I considered this voice represented the child's inner voice.

Table 7.1: Six genres in two sets

Sets of genres	Outside-in genres	Inside-out genres
Genres noticed	Adult-led learning genre Compliance genre Invisible speaker genre	Child-led free play genre Resistance genre Whisper genre
Competing Voices	Outside voice vs Inner voice Inner heteroglossia	Outside voice vs Inner voice Inner heteroglossia
Dominant Voice	Adult's voice	Child's voice

These six genres listed in Table 7.1 were named according to the child's voice (content and form), perspective and their choice of behaviour. They were classified into two sets and named according to the source of the child's voice. Competing Voices between adults and the child were discerned from the child's strategic employment of various

genres. The dominant Voice was noticed from the child's prioritisation of a certain Voice and the child's action.

7.2 Outside-in genres

As noted above, outside-in genres are recognised when a child's voice comes from an outside voice (reflecting the influence of the adult Voice), or a child has internalized the outside voices of adults into their own voice. Three genres, the adult-led learning genre, the compliance genre and the invisible speaker genre, were found and classified into this genre set. From the child's use of outside-in genres, we can begin to understand when and how a child might choose to prioritise an adult's voice over the child's inner voice.

7.2.1 Adult-led learning genre

As discussed in Chapter 6, the potential for learning was a point of consensus for Chinese caregivers and New Zealand ECE teachers regarding children's use of touchscreen devices when using for learning, not just entertainment. Learning, in this context of adult-led learning, constitutes a narrow understanding of learning and refers to the expectations and demands of learning outcomes held by adults for children's use of touch screen devices, such as gaining some useful knowledge and skills through touch screen use.

The adult-led learning genre in this thesis refers to the genre the child employed when the child acknowledged a learning purpose expected by the adult/s for their touch screen use, and responded to this learning purpose by seeking to achieve such learning outcomes during their use of touch screen devices. The adult-led learning was differentiated from the child-led learning in their touch screen use in that there was an obvious learning purpose expected by the adult(s), which is also shared with the child, therefore the influence of the adult's voice was very likely to be exerted on the child's voice and behaviour.

The adult-led learning genre was recognized in the spaces of both the centre and the homes. The following examples show children's use of the adult-led learning genre in each of these spaces.

7.2.1.1 Adult-led learning genre in the centre space

From my observation, touch screen devices were not used often in this ECE centre. Nevertheless, teachers used touch screen devices on a few occasions, as these teachers shared in section 6.1.2. Examples include, when a child felt upset, angry or cried (used as a babysitter to distract the child from an unpleasant situation, to cheer the child up or calm the child down), when the teachers and the children were tired and needed to re-focus (used as a way of relaxation or entertainment), and when a child expressed an inquiry or an interest in learning something new (used as a learning tool). The last instance demonstrates the adult-led learning genre, when the teacher used touch screen devices to respond to children's interests, in a way that represented the interest-directed learning philosophy of this ECE centre.

The example that follows shows that teacher Sarah used an iPad to respond to Anna's interest in worms and tried to extend her learning into what is often termed 'a teachable moment' (Carroll, 2011). This teaching practice took place one day when Anna found a worm in the flower garden. She put it in her palm and showed it to her teacher Sarah. The teacher seized this teachable moment, starting with the child's interest, and used an iPad together with the child to search for information to extend the child's initial interest.

Excerpt 7.1: 'How do worms move?'



Figure 7.1: Anna was holding a worm in her hand

L1 Anna: Look! I found a worm.

L2 Sarah: Oh, you found a worm!

L3 Anna: Yes.

L4 Sarah: Do you know the effect of worms on soil?

L5 Anna: I don't know.

L6 Sarah: The worms can serve as the fertilizer to the soil. Do you know how worms move?

L7 Anna: I don't know.

L8 Sarah: You don't know? Why don't we find the answer on Google?

L9 Anna: (Anna showed some surprise initially and then accepted this proposal with excitement)

Here teacher Sarah seized a teachable moment to teach a child in response to the child's interest by using a touch screen device. Sarah searched for information on Google with Anna.

L10 Sarah: (Sarah went to the teacher's room to get an iPad. She came back with it, and then sat with Anna at the front door). We look way up there and get the information! Come and type your question here: How do worms move?

- L11 Anna:** (Anna stared at the screen with curiosity and expectation)
- L12 Sarah:** H (Sarah put her finger at the letter ‘H’ on the screen to show Anna the location of the letter ‘H’ on the iPad keyboard)
- L13 Anna:** H (Anna tapped the letter ‘H’ on the touch screen with her finger)
- L14 Sarah:** O... (Sarah pointed her finger at the ‘O’ on the screen and showed Anna the location of the letter ‘O’ on the iPad keyboard)
- L15 Anna:** O... (Anna tapped the letter ‘O’ on the touch screen with her finger)
- L16 Sarah:** W... (Sarah pointed her finger at the ‘W’ and showed Anna the location of the letter ‘W’ on the iPad keyboard)
- L17 Anna:** W... (Anna tapped the letter ‘W’ on the touch screen with her finger)

The teacher Sarah used the teaching approach of demonstration to teach Anna how to use the iPad and how to spell the word ‘How’. Anna finally completed the input of the whole question ‘How do worms move’ with Sarah’s help.



Figure 7.2: The teacher-led interest-directed touch screen learning experience

- L18 Sarah:** Then touch ‘search’. (Sarah pointed at the ‘Search’ button to show to Anna)
- L19 Anna:** (Anna touched the ‘Search’ button, then some videos about worms appeared on the iPad screen. Anna clicked on a video and watched)
- L20 Sarah:** Let’s go inside. (Sarah brought the iPad inside because the sunlight

outside was quite strong)

(While Anna was watching the video on the iPad in the room, four other children came over and joined in the watching)



Figure 7.3: Children gathered together to watch the video about worms

L21 iPad: (The video was playing on the iPad) An earthworm moves by using two different sets of muscles. Circular muscles loop around each segment and longitudinal muscles run along the length of the body. When the circular muscles contract, the earthworm stretches, becoming longer and thinner. The earthworm uses its setae to anchor the front of its body in the soil. Now the longitudinal muscles contract and the earthworm becomes shorter and wider or it bends from one side to the other, pulling the body forward. The earthworm withdraws the front setae and uses its rear setae to anchor itself at the back. The earthworm uses its circular muscles to lengthen and push itself forward again.

L22 Sarah: See, they have muscles ... this is the muscle ... (Sarah pointed to the worm on the screen and used her own words and gestures to explain the content of the video to children)

L23 Children: Muscles? (All children showed great interest in muscles and concentrated on watching the video with curiosity)

L24 Sarah: Yes, they have muscles to push them forward...

(The video ended)

L25 Sarah: Yeah, this is how worms move.

From the above teaching practice using an iPad, we can see the teacher-led learning genre children employed in the centre. During this teacher-led touch screen learning experience, the child Anna listened carefully and acted according to what the teacher Sarah taught her to do, about something Anna had indicated an interest in. Anna completed the search process under the instruction of the teacher by: i) typing all the letters of ‘How do worms move?’; ii) pressing the ‘Search’ button, and iii) choosing a video to watch. From Anna’s series of actions, we can see she employed the teacher-led learning genre to act according to the teacher’s interest-directed teaching and at the same time build her knowledge and skills about how to search for information about her interest using an iPad. After watching the video of worms moving, all the children showed great interest in muscles and repeated the word ‘muscles’ after the teacher Sarah’s instruction on the muscles of worms. This can be seen as an employment of the teacher-led learning genre by all the children present.

In addition to the centre space, I also found the adult-led learning genre being used in the home space with caregivers. As discussed in section 6.2.1 and 6.2.2, the Chinese families in this study expressed an expectation of learning outcomes from their children’s use of touch screens at home, so it was not surprising to find the adult-led learning genre being used by children with touch screen devices in the home space, especially when caregivers were present. The following examples are two out of a dozen occasions captured in videos that caregivers took in the home space, which show children’s use of the adult-led learning genre when they played with touch screens in the company of their caregivers at home.

7.2.1.2 Adult-led learning genre in the home space

Excerpt 7.2: Restaurant game (Video No. JH-01)

(After Jayden played the restaurant game on the iPad)

L1 Jayden’s grandpa: (Original words) 客人们吃完了，我们要把餐桌收拾干净。**(Translation)** We need to clean up the table after the guests have

finished the dinner.

L2 Jayden: (Jayden slid his finger on the screen to drag a rag to clean the table)

L3 Jayden's grandpa: (Original words) 非常好, Jayden, 刚刚你做了小厨师
(Translation) Awesome, Jayden! You have been a little chef.

L4 Jayden: (Original words) 我是大厨师啦。**(Translation)** I am a big chef!
(Jayden smiled proudly)

L5 Jayden's grandpa: (Original words) 哈哈, 好, 你算是大厨师, 那你知道做厨师需要注意什么吗?
(Translation) Hahaha, ok, you are a big chef! Do you know what you need to pay attention to when you work as a chef?

L6 Jayden: (Original words) 要干净, 要对人家好, 还要礼貌, 还要注意不要烫到手。
(Translation) Be clean, be kind to others, be polite, and be careful not to get burnt.

L7 Jayden's grandpa: (Original words) 那就是要注意安全, 对不对? 厨房很危险, 有刀子, 有火。还有, 吃的东西一定要卫生。你记住了吗?
(Translation) That is to say, we need to pay attention to safety, right? The kitchen is very dangerous, with knives and fire. Also, the food you eat must be hygienic. Have you remembered?

L8 Jayden: (Original words) 我记住了, 还要卫生。**(Translation)** Yes, I remember. It should be hygienic.

From the above video data, we can see that Jayden's grandpa tried to teach Jayden some skills, life experiences and language through integrating this knowledge into the touch screen game (see L1 Grandpa: We need to clean up the table after the guests have finished the dinner). Grandpa posed some questions to inspire and provoke Jayden's thinking, which is also something teacher Sarah did in the first example. Grandpa did this to help Jayden learn some knowledge and skills after playing the game (see L5, Grandpa asked: Do you know what you need to pay attention to when you cook?). Through grandpa's inquiring questions, Jayden employed an adult-led learning genre

in his touch screen play by recalling what he had previously learnt such as ‘ be clean, be good, be polite and be careful’ 1 (see L6). After Jayden’s answer, grandpa summed up Jayden’s thoughts as relating to safety and added some more knowledge about life experiences such as knives, fire and hygiene for Jayden to think about (see L7). In this way, Jayden gained some life knowledge and skills after he played this touch screen game. As a result, the learning emerged from the combination of the touch screen game and Grandpa's discussion of the game, as he prompted Jayden to think about the real-life applications.

In this example the adult’s voice was dominant, according to my interpretation, because the adult led the learning outcomes in the process of Jayden’s play with touch screens. Jayden’s employment of the adult-led learning genre was discerned in that Jayden responded to his grandpa’s questions actively when his grandpa wanted to teach him some life knowledge and skills in the process of playing the touch screen game. At the same time Jayden built his knowledge and skills by listening to his grandpa’s instruction and contributing his own voices/ideas.

This adult-led learning genre was prevalent in videos both families took at home. It was also noticed during Evan’s use of touch screens at home.

Excerpt 7.3: Yes, I can sing (Video NO.: EH-02)

L1 Evan: (Original words) 快点。 **(Translation)** Hurry up! (Evan stared at the screen and concentrated on the iPad game Plants vs. Zombies)

When Evan played the iPad game, Plants vs. Zombies, he wanted his mum to play with him. His wish was explicit because he asked his mum to ‘hurry up’ and join in while he was concentrating on playing his game.

L2 Evan’s Mum: (Original words) 快点干什么 ? **(Translation)** Hurry up for what?

L3 Evan: (Original words) 快点把这个打到我身上。 **(Translation)** Hurry up, touch this and slide it on me! (Evan demonstrated the action of touching and sliding on the screen using his finger.)

L4 Evan’s Mum: (Original words) 你觉得这个游戏教你什么了 ? 教你怎么

打仗了，是不是？还教你什么了？教你儿歌了没有？教你认字了没有？那你会唱他们的主题曲了吗？就是那个歌谣。 **(Translation)** What do you think this game can teach you? It can teach you how to fight, isn't it? What else do you think it can teach you? Does it teach you to sing the children's songs? Does it teach you to read the words? Can you sing the theme song of this game? It's a children's song.

Evan's mum asked a series of questions, which showed her concerns about the learning outcomes from Evan's play with this touch screen game. Her questions could also be seen as a way of inspiring Evan to reflect on his touch screen play and learning activities. This point was also shared in Jayden's example above when Jayden's grandpa was prompting reflection and real-world connections (application to real life beyond the game).

L5 Evan: (Original words) 会唱。 **(Translation)** Yes, I can sing. (Evan moved his eyes from the screen to his mum)

These questions (posed by Evan's mum) successfully turned Evan's attention from playing the iPad game of hitting the zombies to thinking about a learning outcome, albeit that she based this on an element of the game. Evan confirmed that he can sing to meet his mum's expectation of learning outcomes from his use of a touch screen device.

Table 7.2: Adult-led learning genre

Who	Content	Form	Context
Evan	'Yes, I can sing.'	Evan moved his eyes from the screen to his mum	Evan was playing on the iPad and his mum asked him what he could learn from playing on the iPad.

In terms of the dominant Voice, in my interpretation, the child's Voice was dominant at first because he played out of his own interest and according to his free will (wishing to involve his mother); and then the caregiver's Voice became dominant because the

child was prompted to think about learning outcomes, which were actually the caregiver's purpose and Voice.

Table 7.3: Competing Voices discerned in the adult-led learning genre

Genre	Competing Voices	Dominant Voice
Adult-led learning genre	i) The adult's Voice: Learning purposes ii) The child's Voice: Free play based on the child's interest	The adult's Voice

While this section has focused on the adult-led learning genre, a compliance genre can also be discerned through the child's attempt (Evan in the example) to meet the adult's expectations and seek their approval. The section that follows discusses the compliance genre.

7.2.2 Compliance genre

Compliance refers to the action or fact of complying with a wish or command. In this section on Outside-in genre, the compliance genre is recognized when the child acts in accordance with the wish, expectation or command of an adult. This genre was usually used by children with an overt intention of realising adult expectations and seeking adult approval through showing they were listening to and/ or acting in compliance with the adult's voice. Children's use of the compliance genre shows the influence of the adult's voice on the child's voice and action. It differs from the adult-led learning genre in that the motivation of the child's employment of the compliance genre was to demonstrate they were listening to the adult's command so as to obtain the adult's approval by being an attentive and compliant child. In contrast, the motivation of the child's employment of the adult-led learning genre was to learn something during their play of touch screens and access learning outcomes such as building knowledge and skills. These two genres share similarities when the child listens to the adult's voice about learning something from playing with touch screens.

Table 7.4: Differences between compliance genre and adult-led learning genre

Differences	Compliance genre	Adult-led learning genre
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The child's motivation	Show they were listening to the adult's command and wish.	Learn something during their play with touch screens.
The child's expected result	Obtain the adult's approval, such as for being an attentive and compliant child.	Learning outcomes, such as building new knowledge and skills.

The following examples tell the story of Evan's intention to meet his mum's command and to seek his mum's approval through showing his listening to his mum's previously expressed voices during his play with a touch screen device. In an initial interview with Evan's mum, she expressed her concern and the tension she experienced about the potential harm it might have on Evan due to his overuse of touch screen devices, such as eyesight and spinal discomfort (which can be seen in section 6.2.3). In response to such concerns, Evan's mum set a time limit for Evan's use of the iPad to prevent the potential harm from overuse and thus alleviate her inner tension. The following excerpt illustrates this tension in action .

One day in the morning, the first thing Evan did after he woke up was to turn on his mum's cell phone and play a game on it.

Excerpt 7.4: I will only watch it for one minute

L1 Evan's Mum: (Original words) 乐乐，你一起床就看手机，这样对视力不好。**(Translation)** Evan, you are playing my cell phone just after you got up. This is not good for your eyesight.

L2 Evan: (Original words) 我看一分钟吧。**(Translation)** I will only watch it for one minute.

L3 Evan's Mum: (Original words) 你已经看了好多个一分钟了。再看一个一分钟咱们就不看了，好不好？**(Translation)** You have already played it for several 'one minutes'. Play it for another one minute and then stop playing, ok?

L4 Evan: (Original words)好。**(Translation)** Ok.

When Evan replied (L2), he firstly tried to alleviate his mum's concerns by saying that he will 'only watch it for one minute' as he knew very well in this conversation: i) his mum's concern about his eyesight, ii) the time limit set by his mum for his touch screen use.

With this background in mind, the following conversation between Evan and his mum reveals her intentions and tension, and how Evan's voices and actions were shaped by his mum's voices, and how Evan used the compliance genre during his play with an iPad at home. The dialogue starts from the time reminder on the iPad.

Excerpt 7.5: I turned it off!

L1 The sound from the iPad: (Original words) 小朋友, 还能再玩一分钟哦!

(Translation) Hi, little friend, you can only play for another one minute!

As mentioned before, Evan's mum set a time reminder on the device to avoid Evan's overuse. The iPad would then remind Evan when it was the time to turn it off.

L2 Evan's Mum: (Original words) 听见了没? iPad说了, 还能再玩一分钟。

看得时间太长了会怎样? **(Translation)** Did you hear it? The iPad said that you can only play for another one minute. Do you know what it would be like if you watch the screen for too long?

Evan's mum showed her tension here by reminding Evan about the time and asking Evan to state the consequences of overusing the touch screen device.

L3 Evan: (Original words) 会对眼睛不好。 **(Translation)** It is bad for eyes.

Evan has learnt from what his mum previously expressed that playing touch screen devices for too long time will be bad for his eyesight (see L1 in Excerpt 7.5). Evan gave an active response to his mum's question by repeating what his mum had said before, from which we can see Evan showed his compliance through listening and his verbal response to his mum's previous utterance.

L4 Evan's Mum: (Original words) 对。那我们看完这个休息一会儿, 我们

去吃饭, 好不好? **(Translation)** Right! Then we finish this and have a rest. Let's go to eat something, ok?

L5 Evan: (Original words) 好。 **(Translation)** Ok. (Evan still focused on playing on the iPad while he said ok)

Again, Evan complied with his mum's expectation by saying 'ok'. However, his body language (non-verbal voice) betrayed his verbal voice. He was still focusing on playing on the iPad when he said 'ok', thereby showing the coexistence of two competing Voices in his mind, the verbal voice of 'ok' and the non-verbal voice of 'wanting to play more'. In this moment, Evan can be viewed as experiencing the struggle of inner heteroglossia, with more than one voice in his mind and conflicting with each other. The dominant Voice therefore would be the Voice the child chooses to prioritise or act in accordance with among these competing Voices.

Evan's mum kept asking questions to make Evan turn his focus from playing a touch screen game to thinking about answers to the questions she asked. When Evan's mum noticed that Evan still kept focusing on the game, she changed the topic to ask what Evan could learn from playing this game.

L6 Evan's Mum: (Original words) 你说玩这个游戏能教会你一些什么呀？教会你画月亮吗？ **(Translation)** Tell me what it can teach you from playing this game? Does it teach you how to draw the moon?

Here Evan's mum's question introduced her intention and expectation of a learning purpose for Evan's use of touch screen devices. In this instance, she expected Evan could learn to draw the moon from playing with the touch screen device.

L7 Evan: (Original words) 嗯。 **(Translation)** Um. (Evan still concentrated on playing the game)

Evan gave a perfunctory reply to his mum, while still focused on playing with the iPad. His spoken voice of 'Um' showed that, on one hand, he tried to give his mum a positive response to meet his mum's expectation, which shows the influence of his mum's voice on him. On the other hand, his body language, which indicated his focus on playing with the iPad, continued to express his inner voice of 'wanting to play more', as a non-verbal form of voices.

L8 Evan's Mum: (Original words) 你喜欢每天玩 iPad 多长时间呀？

(Translation) How long do you like to play an iPad every day?

Responding to Evan's perfunctory reply, his mum kept asking questions to distract Evan from playing the game to think about other issues. She asked Evan about the time limit.

L9 Evan: (Original words) 一分钟。 **(Translation)** One minute. (Evan still concentrated on playing the iPad)

Evan was stalling with both 'um' and 'one minute', which showed both an inner voice of wanting to play more and a borrowing of his mum's voice of 'one minute'. This borrowing of words showed his responsiveness to his mum's voices. Here Evan's verbal voice of 'one minute' can be seen as an attempt to pacify his mum by acceding to her demands but he still expressed a different non-verbal voice through his action of keeping on playing.

L10 Evan's Mum: (Original words) 真的呀？你喜欢是玩一分钟，还是一个小时，还是一整天？ **(Translation)** Really? Do you like to play for a minute, an hour, or a whole day?

Evan's mum tried to stir up Evan's thoughts and trigger his action by asking questions.

L11 Evan: (Original words) 妈妈，妈妈。 **(Translation)** (Evan turned off the iPad and gave it to his mum) Mum, Mum.

Here Evan gave a positive response to his mum's request by turning off the iPad by himself, giving the device to his mum and calling her attention to his action through this combination of his verbal and non-verbal voice. Here Evan gave up his inner voice of wanting to play more, instead, he chose to prioritize and act according to his mum's voice about turning off the iPad. His action showed his compliance with his mum's voice coupled with an intention of seeking his mum's approval.

L12 Evan's Mum: (Original words) 哇，你自己关了。 **(Translation)** Wow! You turned it off by yourself!

L13 Evan: (Original words) 嗯，我关了不看了，我去吃饭了。 **(Translation)** Yes, I turned it off. I am going to eat something!

L14 Evan’s Mum: (Original words) 你太棒了。 **(Translation)** You are so great!

What Evan uttered and acted here (L13, ‘turn it off’, ‘eat something’) is a revoicing of his mum’s earlier words in this excerpt (L4 ‘We finish this and have a rest. Let’s go to eat something’). His action showed his compliance with his mum’s voice and its influence on him. Evan had internalized his mum’s voice (outside voice) and turned it to his own (inside voice), similar to when the children in the first example repeated ‘muscles’ (section 7.2.1). As a reward for Evan’s obedience, Evan’s mum gave her approval to Evan at the end of their conversation, which positively reinforced Evan’s use of the compliance genre.

The compliance genre used by Evan can be recognised here in what he did and what he said in seeking his mum’s approval. Specifically, i) Evan complied by turning off the iPad; ii) called his mum to attract her attention; (L11), and iii) showed the (turned-off) iPad to his mum (L13). Here we can see that both verbal and non-verbal voices used by Evan were aimed to show that ‘I turned it off by myself’. The compliance genre was observed in Evan’s words and actions, which acted in accordance with the wish, expectation or command of his mum.

Table 7.5: The compliance genre

Who	Content	Form	Context
Evan	Mum, Mum! I turned it off!	Evan turned off the iPad and gave it to his mum.	Evan’s mum set a time limit for his use of the iPad. The time was up and his mum wanted him to turn off the iPad.

Competing Voices of intention and tension in the caregiver’s voices can be discerned in the above example, which showed the learning expectations for the child’s touch screen use and concerns about overuse. The shaping action of the adult’s voices on a child’s voices can also be noticed in this example in the child’s active and positive response to the adult’s voices and the child’s internalization of the adult’s voices to modify his voices (Outside-in Voices). In addition to the competing Voices between

the child and the adult, the conflict in the child's inner heteroglossia can also be noticed in this example. Due to the plurality of Voices, two different Voices in different forms can be recognized in this video excerpt. The verbal Voice (uttered words) was trying to cater to his mum's intention and expectation, while the non-verbal Voice (body languages and actions) revealed his inner voice, his real wish. From the conflict between these two Voices, we can see that Evan was struggling with his inner heteroglossia in this video excerpt. Therefore, from this example we can see that competing Voices exist in different layers including: i) the adult's Voices (intentions versus tensions); ii) the child's inner heteroglossia (the verbal Voice of complying with his mum's wish, expectation and command versus the non-verbal Voice of wanting to play more); and iii) between the Voices of the adult and the child (adult's Voice of intention, expectation and command versus the child's inner Voice of his free will in a non-verbal way).

Among these competing Voices, we can notice a dominant Voice. The child's use of the compliance genre can be seen as the child's choice to prioritize the adult's Voice of intention while at the same time suppress his inner Voice of free will, his original thought, because there is an identifiable intention of the child to seek the adult's approval and to meet the adult's expectation behind his use of the compliance genre. It is clear that the caregiver's Voices of intention were dominant here (compared with the child's voices in L2, L3, L7, L9, L13), because the child's Voice, verbal and non-verbal, was very probably shaped by the adult's Voice in that what he said and acted came from what the adult previously expressed. Also, Evan got positive feedback from his mum's approval, which further enhanced his compliance, absorption and application of his mum's Voice, thus strengthening the dominant position of the caregiver's Voice.

Table 7.6: Competing Voices discerned in the compliance genre

Genre	Competing Voices	Dominant Voice
Compliance genre	i) Inside the adult: Intentions and tensions; ii) Inside the child: His inner heteroglossia; iii) Between the adult and the child:	Adult's Voice

The adult's Voice of intention and the child's plural Voices, reflecting the shaping of the child's Voice by the adult's Voice.

7.2.3 Invisible speaker genre

An invisible speaker is a feature of Bakhtin's notion of hidden dialogicality or hidden dialogue. An invisible speaker in a dialogue is the person who is not physically present but whose Voice exerts an influence on the speaker's Voice, choice or action. From Bakhtin's viewpoint, a person is present via his Voice. I, therefore, consider that an invisible speaker is present in a dialogue if their Voice can be recognised as being an influence on the words or actions of the first speaker, when they (the influencer) are not physically present. Hence, in this study, the invisible speaker genre refers to the genre a child employed when the child conducted a hidden dialogue with an invisible speaker.

In terms of the name of 'invisible speaker genre', as I have mentioned in section 7.1, my principle of naming genres is to do this from the child's perspective, mainly using the child's Voice (source, content and form) and action (a form or consequence of the Voice). I compared two names, i) the hidden dialogue genre, which represents the language form and ii) the invisible speaker genre, which represents the Voice influence of a second Voice on the child's Voice. Both names represent conversation where the person with whom the child is conversing is not physically present in this context. However, the invisible speaker genre aims to depict vividly the 'influence' of an invisible second Voice on the child's Voice, something that is of particular importance in my study due to its focus on competing Voices. On the other hand, it was my view that the label of hidden dialogue does not represent such a Voice of influence and the invisible influencer. This limitation led me to use the name of the 'invisible speaker genre' to represent a context where the child invents the other speaker based upon what the child imagines the other speaker would say if they were present to talk.

There are similarities as well as differences between the invisible speaker genre and the compliance genre. The similarity is that they both reflect the influence of an outside voice, while the differences are:

- i) Whether the second speaker is absent or present: The second speaker is absent in the invisible speaker genre but present in the compliance genre;
- ii) The form of the dialogue between the child and the second speaker: The invisible speaker genre is in a form of inner dialogue, while the compliance genre is in a form of face to face dialogue; and
- iii) The child's possible response to this outside voice: The child dialogues with an outside voice and sometimes internalizes this outside voice into his own voice in the invisible speaker genre, while the child chooses to listen to an outside voice in the compliance genre.

The following table summarises these differences.

Table 7.7: Differences between invisible speaker genre and compliance genre

	The invisible speaker genre	The compliance genre
The second speaker	Absent	Present
The form of dialogue	Inner dialogue Inner heteroglossia	Face to face dialogue
The child's Voice/ action	Dialogue with, Internalization, appropriation	Listening to, Compliance

This section illustrates two of the occasions when an invisible speaker was present in a child's voices. In the course of my observations, the individual child's use of the invisible speaker genre was noticed during their touch screen use with peers and when they played alone in the centre. When a child played on a touch screen with peers, an invisible speaker's voice could be heard through the child's voices and their choice of actions, which reflected the influence of an invisible outside voice on the child. When a child engaged in solitary play using a touch screen device, an invisible speaker's voice might be heard through the child speaking to themselves or engaging in an inner dialogue with an imaginary speaker.

I present two examples to illustrate the child's use of the invisible speaker genre in the excerpts that follow. This first example demonstrates the presence of an (in)visible speaker who influenced Jayden's actions and thoughts, in the form of hidden dialogue.

Excerpt 7.6: Jayden’s internalization of the teacher’s Voices (verbal and non-verbal)

In this example, the ECE teacher had put a rule in place that all children are to take turns when playing with touch screen devices in the centre. The teacher Sarah spoke about this rule before play began, so the children were aware of it. The following image illustrates the teacher’s action to ensure that this rule was enforced.



Figure 7.4: Jayden’s internalization of the teacher’s Voices (verbal and non-verbal)

We can see from the above image that the teacher maintained the rule of playing in turns by stopping a child (Kevin - the child at the right side of the above picture) playing when it was not his turn through her body language of covering the iPad. Here our focus is not on the teacher and Kevin but on the boy Jayden who is standing behind the teacher, wearing a dark blue wide-brimmed hat. This scene sets out the verbal and non-verbal Voices he had ‘seen’ and then ‘internalised’ as his inner Voice in this dialogic space. This scene of internalisation intrigued me to think: i) In what way would Jayden respond to this scene (teachers’ words and gestures) he had experienced in this public space where he shared with his teacher and peers? ii) How had the teacher’s Voice exerted an influence on the child’s Voice in his future use of touch screens? With all these questions in mind, I found a good demonstration of how an invisible speaker exerted an influence on the child’s practices of the touch screen device when I saw the following excerpt.

Excerpt 7.7: An invisible speaker

In this sequence of group play with the iPad, it was Jayden's turn to play on the touch screen device. He was surrounded by his peers but without the company of a teacher.



Figure 7.5: Jayden moved other children's hands and covered the iPad screen

Jayden had the iPad in front of him (see image 1).

L1 Jayden: (Jayden clicked on the screen, see image 1).

L2 Alice: (Alice also clicked on the screen, see image 1).

Here we see that although it was Jayden's turn to play on the iPad, Alice also attempted to play by making a quick, random click on the screen.

L3 Jayden: (Jayden moved Alice's hand away and covered the iPad screen with his hands, see image 2 and image 3).

Here Jayden imitated teacher Sarah's body language when she had acted to stop a boy's use of the iPad when it was not his turn (see Figure 7.5). That is, he moved the other child's hand away and covered the iPad screen. From Jayden's imitation, we can see the influence of the teacher's Voice on his ways of playing with the iPad when he was playing with his peers on another occasion. This influence can be inferred from both the teacher's previous verbal Voice (speaking of the rules of playing with the iPad) and non-verbal Voice (body language of covering the screen in order to maintain the rule

during children’s play of iPad). From Jayden’s action, we can see that the teacher’s Voice was present here even if she was invisible (not physically present). That is, the teacher’s Voice had an influence on the child’s words and gestures, despite her no longer being present.

Jayden’s imitation of the teacher’s gestures can be viewed as his active response to the teacher’s Voice through his body language and his internalization of the rule set by the teacher (the Outside-in Voice of the child). Therefore, the child’s use of the touch screen device here can be viewed as a form of Voice, discoverable by genres, because how the child used the touch screen device (his action) reflected his choice of prioritising a certain Voice among the multiple Voices which are interacting and sometimes competing with each other. The way the child used the touch screen device was the dominant Voice chosen by the child through his action in this heteroglossia.

L4 Alice: (Alice continued to click on the screen randomly).

L5 Jayden: No! (Jayden moved Alice’s hand away again).

With the utterance of ‘No!’ and his action of moving Alice’s hand away when it was not Alice’s turn to play, Jayden tried to maintain the rule set by the teacher. Through both Jayden’s spoken and unspoken Voices, we can infer a hidden dialogue between Jayden and his teacher, the invisible speaker who was present in this dialogue through the influence of her Voice in this peer-shared public space. Even though there was no visible/audible Voice spoken by the teacher, we can still sense her (in)visible presence through the influence of her Voice on the child’s words and gestures. Therefore, an invisible speaker through the influence of her Voice can be recognised through the child’s use of the invisible speaker genre. We might also assume that this outside Voice (the teacher’s Voice) has been internalised in the child’s thoughts and actions and in his autonomous and conscious choice-making. Table 7.9 summarises these points:

Table 7.8: Competing Voices discerned in the invisible speaker genre

Space	A public space shared by the child and his peers (without the teacher)
Genre	The genre of an invisible speaker
Content	No!

	Form	i) Jayden moved Alice's hand away and covered the screen with his hands. ii) Jayden moved Alice's hand away again.
Competing Voices		Between i) Jayden's internalized Voice of an invisible speaker (Jayden acted in accordance with his teacher's rule of playing in turns) and ii) his peer (Alice's) Voice (of wanting to play even though it is not her turn).
Dominant Voice		The invisible speaker's Voice was dominant because the child chose to act in accordance with it.
Hidden dialogue		A hidden dialogue was found between the child and an invisible speaker (his teacher), who was not physically present but still exerting an influence on the child's choices and actions when he was using a touch screen device in a peer-shared public space. He acted to maintain the rule the teacher had established earlier.

In addition to the teacher as an invisible speaker, a caregiver was also found to be an invisible speaker when a child played on a touch screen game by herself. The following example shows Raine's conversation with her mum on an imaginary phone call when she was playing a cooking game on a touch screen device.

Excerpt 7.8: Raine's imaginary phone call with her mum during a touch screen cooking game

From my observations in this ECE centre, a pretend phone call was a very popular game for children. Children used whatever was at hand to make a pretend phone call to anyone they wanted: sometimes a peer friend, sometimes a physically absent person such as a caregiver, or even a fire rescuer (in a fire rescue game). In the following example, a child Raine made a pretend phone call to her mum when she was playing a touch screen cooking game.

Raine was playing a cooking game on an iPad. After she made some sandwiches, tofu and rice on her touch screen as part of the cooking game, she grabbed a building block next to her ear and made a pretend phone call to her mum. She wanted to invite her mum to have lunch with her in her cooking game. This call was imagined as a two-way call by Raine, but obviously, her mum did not talk with her.



Figure 7.6: Raine made a pretend phone call to her mum during a touch screen game

Raine: (Raine placed her pretend mobile phone next to her ear) **Original words:** 喂，妈妈在吗？...你能听到吗？...你能过来一下吗？...我想让你过来吃饭。...我在幼儿园做了午饭。...我做了三明治。...你要是不喜欢三明治，我还做了豆腐。...你快点过来吧，饭一会就凉了。... Bye! **Translation:** Hello, is Mummy there? ... Can you hear me? ... Can you come over here? ... I want you to come over for lunch. ... I have made our lunch in my kindergarten. ... I have made sandwiches. ... If you do not like sandwiches, I have made tofu too. ...Please come over soon, [as] the rice will be cold soon. ... Bye! (She removed her pretend mobile phone from her ear to end the call)

From Rain's imagined two-way call with her mum, an invisible speaker (Raine's mum) was not physically present, but it was clear that there is an invisible speaker in the dialogue. The answerable or self-answering feature of the words Raine uttered above, in my interpretation, reflects the notion of a 'dialogue' in Bakhtin's terms (Bakhtin, 1981). From a Bakhtinian viewpoint, the core trait of a dialogue lies in its answerability - every utterance is a response to its past and can be answered by its successor. In Raine's utterances, it is possible to see that she constantly inserted the utterances of an invisible other (her mum) in her conversation. Her mum, as an invisible speaker, was participating in the dialogue even though she was not physically present and did not

take part in the actual phone call. If we add in the invisible speaker's voices, the above dialogue could be imagined as follows:

I use italics to show what Raine's mum (the invisible speaker) might say in this imagined call.

L1 Raine: (Original words) 喂, 妈妈在吗? (Translation) Hello, is Mummy there?

L2 Mum (the invisible speaker): *Yes, this is Mummy speaking.*

L3 Raine: (Original words) 你能听到吗? (Translation) Can you hear me?

L4 Mum (the invisible speaker): *Yes, I can hear you. Why did you call me?*

L5 Raine: (Original words) 你能过来一下吗? (Translation) Can you come over here?

L6 Mum (the invisible speaker): *For what?*

L7 Raine: (Original words) 我想让你过来吃饭。 (Translation) I want you to come over for lunch.

L8 Mum (the invisible speaker): *Where did you make the lunch?*

L9 Raine: (Original words) 我在幼儿园做了午饭。 (Translation) I have made our lunch in kindergarten.

L10 Mum (the invisible speaker): *What have you made for our lunch?*

L11 Raine: (Original words) 我做了三明治。 (Translation) I have made sandwiches.

L12 Mum (the invisible speaker): *Aw, but you know, Mummy doesn't like sandwiches. Have you made anything else?*

L13 Raine: (Original words) 你要是不喜欢三明治, 我还做了豆腐。
(Translation) If you don't like sandwiches, I have made tofu too.

L14 Mum (the invisible speaker): *Great. When do you want me to be there?*

L15 Raine: (Original words) 你快点过来吧, 饭一会就凉了。 (Translation)

Please come over soon, [as] the rice will be cold soon.

L16 Mum (the invisible speaker): *Ok, I will be there soon. Bye!*

L17 Raine: (Original words) Bye! (She removed her pretend mobile phone from her ear to show the call had ended.)

By adding the omitted utterances, we can see how a second speaker was present invisibly but actively. Her Voice was not spoken aloud but there were deep traces left by it on the child Raine as a first speaker. We can appreciate that this is a dialogue, not a monologue, although only one person Raine was speaking. This is a dialogue of the most intense kind because each present, uttered Voice, is a direct response or answer to another person's Voice (the invisible speaker in this context).

Competing Voices can be heard in Raine's use of an invisible speaker genre. We can sense that the lunch Rain had made was not to her mum's liking (L11, L12, L13). Raine knew this very well and expressed this inner conflict in a self-questioning and self-answering way (L13 'If you don't like sandwiches'). Finally, in Raine's imagined dialogue with her mum as the invisible speaker, she chose to prioritise her mum's Voice by flexibly turning to something else to cater to her mum's preference (L13 'I have made tofu too').

From the Voice of Rain's flexibility, we can see not only the competing Voices between the outside Voice of an invisible speaker (her mum) and the inner Voice of the child, but also the dominant Voice due to the child's choice to prioritise the invisible speaker's Voice. Table 7.9 summarises these points:

Table 7.9: Competing Voices discerned in the invisible speaker genre

Space	A public space shared by the child and her peers (without the caregiver)
Genre	The genre of an invisible speaker
	Content Is mum there? Can you hear me?
	Form Hidden (inner) dialogue, imagined by Rain
Competing Voices	Between i) Rain's imagined Voice of an invisible speaker (her mum) and ii) her inner Voice.

Dominant Voice	The invisible speaker's Voice was dominant because the child chose to act in accordance with it (cater to her mum's preference).
Hidden dialogue	A hidden dialogue was found between the child and an invisible speaker (her mum), who was not physically present but still exerting an influence on the child's choices and actions.

7.3 Inside-out genres

As mentioned in section 7.1, as distinct from the outside-in genre which reflected the influence of outside voices, the inside-out genres reflected the child's agency in expressing their own voice and making their own choice according to their free will. These two genres represent two different ways in which children assimilate voices in a heteroglossia of competing Voices; that is, the child prioritises the outside voice when he used the Outside-in genres, while the inside voice is prioritised in the child's use of the Inside-out genres.

In this section, three Inside-out genres are discussed the child-led free play genre, the resistance genre and the whisper genre. In these instances, the child expressed their own voices which were different from the command, intention and expectation of adults, and tried to make different choices or set new rules that were outside the expectation of adults. From the child's use of Inside-out genres, it can be seen that the child chose to prioritise their own Voice, their free will and exercise their agency.

7.3.1 Child-led free play genre

Free play is used in this study to refer to children's play activities based on their free will, not under the control of or in the power of others. From my observation of their free play, children feel free to express their own views, and are very creative about making new things (for example, creative artwork, funny words). They are also strategic in solving conflicts through friendly negotiation and using a sense of humour, and they are capable of building dynamic relationships with others. I describe the genre children used in their free play time/ space as the child-led free play genre. The free play genre refers to the child creatively expressing themselves and strategically relating to others in accordance with their free will without the direct influence of others (for

example, teachers, caregivers). Even though it could be argued that everything in the centre and at home is influenced by adults since adults design the space, provide the equipment, even design the games, and supervision is likely not too far away, still, the child has and can express their own voice according to their free will, which is often different from adults' wishes and commands; that is, the child has rights and opportunities to exercise their agency. Table 7.10 summarises what I have observed in children's employment of the child-led free play genre in their free play time/ space using a touch screen device.

Table 7.10: Child-led free play genre

Child-led free play genre	
1. The child creatively expressing themselves	I. freely expressing their own views.
	II. creatively making new things (for example, creative artwork, funny words).
2. The child strategically relating to others	III. solving conflicts through friendly negotiation and using a sense of humour
	IV. collaborating with peers
	V. building a dynamic relationships with peers

During my observations of children's play when they are using touch screen devices, there are a number of cases in which the child-led free play genre can be identified.

7.3.1.1 The child creatively expressing themselves

I. Freely expressing their own views

The child's agential voices were frequently observable when the child immersed themselves in their free play without the supervision of adults. They freely expressed their views and made their own choices without the influence of others (adults or peers) during their employment of the child-led free play genre. The examples that follow demonstrated how the child freely expressed their own views using the child-led free play genre during touch screen play with peers.

Excerpt 7.9: What is an Ironcat?

Evan and his younger brother Joe were drawing a cat picture on an iPad.

L1 Joe: I will draw an Ironcat after [Evan's turn]... Ironcat is a tiny cat.

L2 Evan: Ironcat is like an Iron Man.

L3 Joe: Ironcat is tiny.

L4 Evan: It is a cat with suits: Ironman suits.

When these two children played a drawing game on an iPad, they created a new word 'Ironcat'. They shared with each other their understanding of the Ironcat. While Joe offered his definition of the 'Ironcat' as 'a tiny cat', Evan had a different view, which showed his own thinking without the influence of Joe. Evan defined an Ironcat in the following terms: i) the Ironcat is like an Ironman (L2), ii) by referring to it as a cat with Ironman suits (L4). From this video data, we can see that these two children had their own views and expressed these views freely during their play on the iPad. In their use of the free play genre, play is a way for the child to freely express their views. The following example also showed the child's agential voices even when there was a conflict with what the child recognised what an adult's voice (an invisible speaker) might be.

Excerpt 7.10: I don't think Mum will like it but I enjoy it

Evan and Joe were playing a drawing game on the iPad screen.

L1 Evan: (Evan was drawing a cat's mouth.)

L2 Joe: Did you look at the mouth and the eyes? It's a bit funny. (Joe laughed)

L3 Evan: Yes, it does look funny. (Evan laughed too while he still kept drawing.
He drew a tail for the cat using a yellow brush.)

L4 Joe and Evan: Hahaha (Both children laughed out loud.)

L5 Evan: (Evan focused on drawing the tail of the Iron Cat and said) **Original Words:** 我不觉得妈妈会喜欢这个。 **Translation:** I don't think Mum will like this]. (Evan kept drawing the tail of the cat, now using the brown ink.)

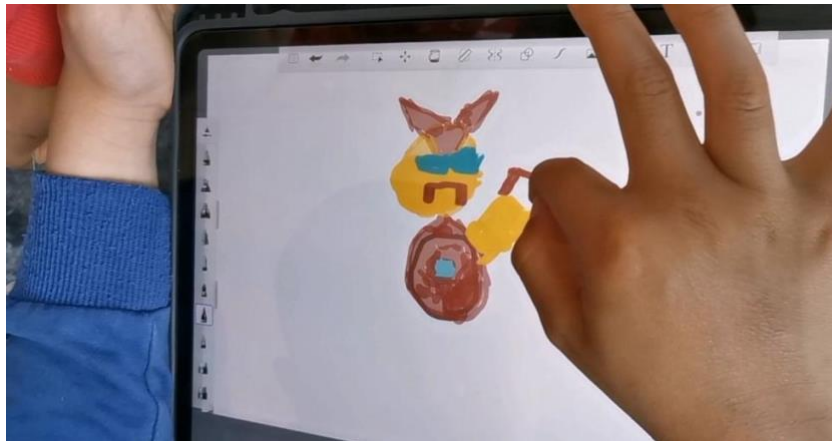


Figure 7.7: Drawing a cat that mum might not like

The two children enjoyed their creative drawing and laughed a lot as they were having a great deal of fun. Here Evan's statement 'I don't think mum will like this' (L5) is of great interest to me. This statement is important because it expresses the child agency is at a high level in that, even though he expressed that his mum might dislike his drawing, he still chose to insist on his own style of drawing (L3, L5 Evan kept drawing according to his own style) and enjoying his creative expression (L2, L3, L4 the two children laughed out loud). Even though the adult is physically present here (taking this video), the child still chose to listen to his inner voice without allowing himself to succumb to the adult's influence.

Evan's attitude in the above scenario represents what Bakhtin refers to as a presence created through the expression of one's voice. In the example of the invisible speaker genre, and even though the adult was not physically present, the adult's Voice can still exert an influence on the child's Voice, choices and actions. In this case, I agree with Bakhtin's standpoint, that the adult was present as a consequence of the presence of their Voice (influence). However, in the child-led free play genre, even though the adult was physically present and the child was aware of the adult's possible Voice, the child still chose to act according to his own free will (his own style of drawing), choosing to prioritize both his inner Voice and his creative output that was free from the influence of the adult. Therefore, to some extent, we can say that the Voice (influence) represents one's presence, and hence that the child's use of the free play genre reflects his choice to prioritise his Voice (the dominant Voice) among competing Voices.

In the above example, we can see the child prioritised his Voice and his creative-making and immersed himself in his creation in the free play time/ space. In his employment of the free play genre, the child created a cat and insisted on his own style. This creativity was another feature demonstrated in children’s use of the free play genre, which I will speak to in greater detail in the following examples.

II. Creatively making new things (for example, creative artwork, funny words)

In a state of free play, the child expresses their inner voices not only through freely expressing their views, but also through their creative and imaginative artwork. The creative and imaginative artwork in children’s free play were largely found in my data. For example, the image below showed two children’s collaborative and creative expression of an Ironcat dancing with the music playing on the TV when they played on an iPad.



Figure 7.8: The Iron cat was dancing to the music playing on the TV

I was surprised and amazed by this creative work, and the child’s creative and imaginative expression in their free play genre, so I conducted a reflective dialogue with the child, using the above image to ask the child to talk more about his drawing with me. I obtained some more details from the child’s discussion of their work: i) the raising of hands was used to express the child’s idea of ‘dancing’, and ii) two music symbols ‘🎵’ next to the TV were used to express the idea of ‘the music flowing from the TV’. Therefore, we can see that the child’s creativity and imagination were well demonstrated when he was in a state in which he is freely expressing himself, using a child-led free play genre.

Children's creative expressions using a child-led free play genre were also found in other examples. The example that follows demonstrated how the children expressed their own voices through their creative and imaginative work in their free play time/space using a touch screen device.

Excerpt 7.11: A running Cat

L1 Evan: Original words: 我能不能 actually draw 这个猫是个 running? 那就需要把这个 Rub out. **Translation:** Can I actually draw a running cat? Then I need to rub this out. Change it into running then. (Evan rubbed off the drawing on the iPad screen). I will change it into a running cat. (He started a new drawing on the iPad screen) Running cat.

L2 Joe: No, the cat didn't [run].

L3 Evan: (Evan drew four running legs for the cat and showed it to Joe). Like this.

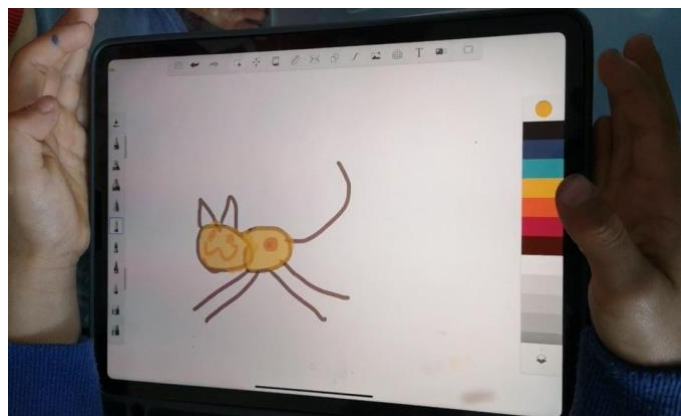


Figure 7.9: A running cat

Even though Joe didn't think the drawn cat could run, Evan drew a vivid picture of a cat by drawing four running legs. This drawing of a running cat, in my interpretation, shows the child's creativity and imagination in a state of free play during their touch screen use.

7.3.1.2 The child strategically relating to others

I. Collaborating with peers

Excerpt 7.12: The cat's tail of yellow and blue stripes

L1 Evan: (Evan concentrated on his painting on the screen) Ink? The tail could be yellow.

L2 Joe: No, blue. No, blue.

L3 Evan: (Evan chose the blue colour to paint the cat's tail, then he chose the yellow colour to paint the cat's tail with the yellow and blue stripes). This is not the way you [Joe] tells me how to draw it.

L4 Joe: You need blue. Then yellow, yellow, yellow, yellow, yellow, yellow. Done!

L5 Evan: I can do this. (Evan drew the blue and yellow on the iPad)

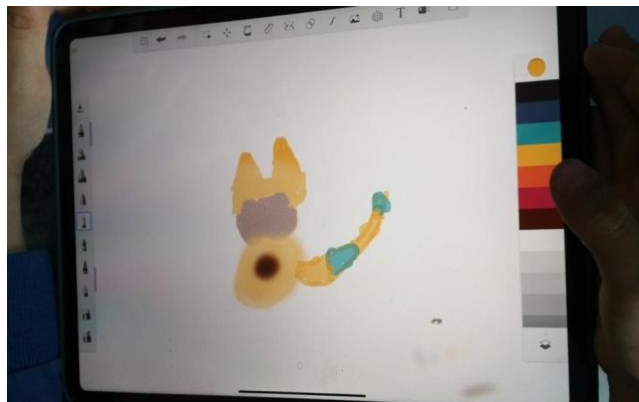


Figure 7.10: A cat with a tail with yellow and blue stripes

When Evan was thinking about what colour should be used for painting the cat's tail and he initially planned to use yellow (L1), Joe contributed his idea of using blue (L2). Evan then used the blue (L3) in response to Joe's proposal, which showed these two children's collaborative work in this painting game on iPad. After Evan used blue (in response to Joe), he used yellow too (in response to his initial idea), to paint the tail with yellow and blue stripes, which combined both of their ideas. Joe's utterance that 'you [Evan] need blue and then yellow' and 'done' (L4) also showed that Joe was contributing his thoughts on this painting which combined the two colours they chose.

Finally, Evan responded to Joe's idea in his words and actions (L5). This video data showed these two children's collaborative work using a child-led free play genre. They both contributed ideas on this painting and completed it in a collaborative and creative way of combining the ideas of both. This kind of friendly negotiation were also found when they solved conflicts in their employment of the child-led free play genre during their touch screen use.

II. Solving conflicts through friendly negotiation and using a sense of humour

Joe wanted a turn after Evan had finished a drawing on the iPad, but Evan wanted to continue to play. Conflicts emerged concerning who should play next.

Excerpt 7.13: Negotiating a turn

L1 Joe: [You have] Finished. It is my turn now?

L2 Evan: You have got a turn [before my turn].

L3 Joe: We always have two [turns].

L4 Evan: (Evan kept drawing on the screen). Next time I will do a different thing after this.

L5 Joe: (Joe raised his voice). After your turn [now], I will have a turn!

L6 Evan: You did have a turn. After this, we will do something different with this iPad.

L7 Joe: What is it?

L8 Evan: (Evan painted different colours on two ears of the cat) 这个搞笑吗?
[Translation: Is this funny?]

L9 Joe: 看。 [Translation: Let me see.]

L10 Evan and Joe: Hahaha... (Two children were laughing happily together)

L11 Joe: (Joe was waiting patiently while Evan drew some funny things to make Joe laugh).

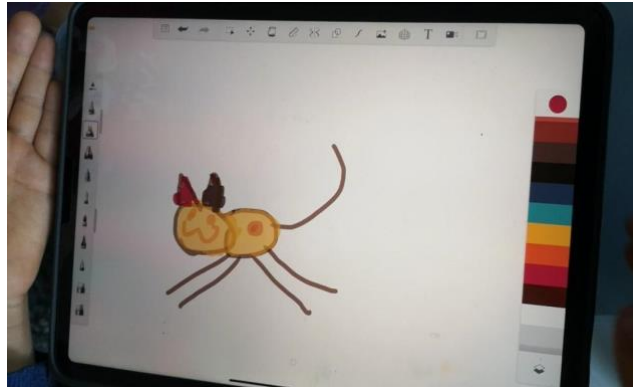


Figure 7.11: A funny running cat with two ears of different colours

Both the children argued for their rights (turns) to play with the iPad. Joe asked for a turn, based on the fact that Evan had finished his drawing (L1), but Evan argued that he should have his own turn because Joe had already had a turn before (L2). Joe kept arguing for his turn by providing more information (L3, We always have two [turns]), but Evan then mentioned that he will do something different on the iPad (L4: Evan used ‘I’ here, which meant he will play next with the iPad himself). Joe raised his voice to refute Evan’s proposal (L4) and defend his own argument (L5, After your turn, I will have a turn!). Conflicting viewpoints arose here between these two children concerning who had the next turn to play with the iPad.

In response to Joe’s protest, Evan proposed ‘doing something different with the iPad’, this time using ‘we’ instead of ‘I’ (L6), which involves Joe in this iPad play. Joe could be seen to be interested in this proposal as he was asking for more details (L7), so Evan seized this opportunity to draw something funny to make Joe laugh. Eventually, these two children were happily playing together again and Evan won some more time for himself to play on the iPad.

This video data showed that: i) these two children achieved a collaborative play and learning experience through friendly negotiation; ii) the child (Evan) used the strategy of humour by drawing something funny to make his peer play mate (Joe) laugh and assuage the conflict between them; this strategy of humour worked for quite a while. The above data, in my interpretation, illustrated that children are capable of solving problems and conflicts with peers in a strategic way of friendly negotiation and using

humour without the need of adult influence. This strategy of friendly negotiation and using humour to solve conflicts was also found at other times when children are using touch screens.

Excerpt 7.14: Booda, Mooka

Joe and Evan were drawing an Irondog on the iPad screen.

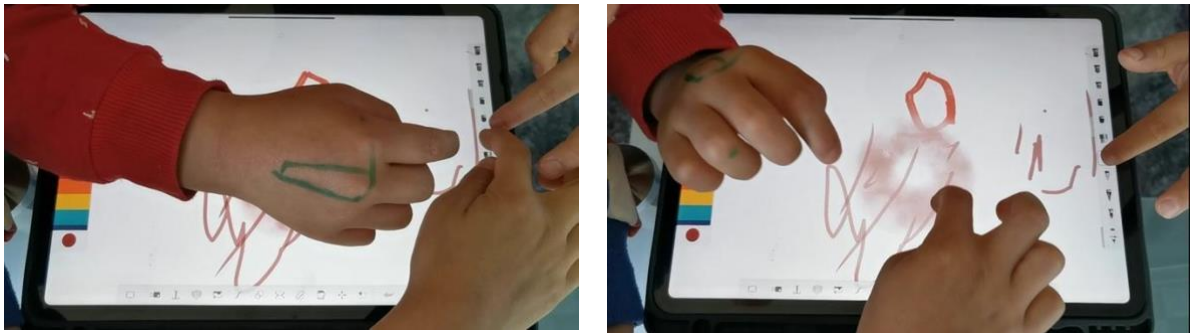


Figure 7.12: Booda, Mooka

L1 Evan: I will help you draw the ears.

L2 Joe: (Joe moved the iPad to make it closer to his own side and far away from Evan) You can't do it. (Joe drew the ears on the screen.)

L3 Evan: That is tangled ears. That is not a dog ear. I will show you what is a dog ear. (Evan attempted to touch the screen.)

L4 Joe: (Joe used his arm to cover the screen to stop Evan from touching the screen) I will do it.

L5 Evan: That is tangled.

L6 Joe: (Joe kept drawing the feet and tails of the Iron Dog) I know it.

L7 Evan: (Evan laughed) Still tangled. Silly tail. Too big feet.

L8 Joe: (Joe laughed too and kept drawing the ears of the Iron Dog)

L9 Evan: That is not a dog ear. That is still not a dog ear. That is a panda's ear again.

L10 Joe: (Joe laughed) I am doing Booda.

L11 Evan: (Evan laughed out loud when he heard Joe's word 'Booda'.)

L12 Joe: (Joe touched the screen and made the whole drawing move around on the screen) Hahaha, tiger runs around. (Joe kept moving around his drawing and laughing. He looked very happy at his new discovery of fun.) I play with him [the drawing].

L13 Evan: (Evan laughed) Mooka.

L14 Joe: (Joe laughed out loud when he heard the word 'Mooka') Hahaha...

L15 (Both of these two children kept laughing for quite a while) Hahaha...

At the beginning of this conversation, we can see there were conflicts between these two children regarding different views on Joe's drawing of an Iron Dog – Evan thought it was not good and wanted to rub it off while Joe felt good and didn't want Evan to rub it off. However, this tension was relieved after these two children used the word 'Booda' and 'Mooka'. Clearly, from the two children's big laugh, they shared a sense of humour that was not understood by others (for example, adults). I, therefore asked Joe, in a reflective dialogue with him based on this video, to explain what he meant by saying 'Booda'. Joe laughed out loud again when he heard me saying this word 'Booda' and told me 'it means Bong Bong Bong' and then ran away with a bigger laugh. I then asked Evan to share his view and he told me that 'Booda' is a funny word Joe created to make people laugh; Evan also explained the similar word 'Mooka', which was another funny word Evan created to make people laugh.

In sum, the above example indicated that i) children created funny words and used a sense of humour shared by them to solve their conflicts peacefully and happily in their free play time/ space. In this manner, they have developed strategic ways of solving conflicts through negotiation and using humour; and ii) children were very creative at creating new things (for example, artwork, funny words) in their use of the free play genre; and iii) children were capable of collaboration and enjoyed collaborative learning experiences during their touch screen play. In addition to a relationship of collaboration, more dynamic relationships among the children were observed in their child-led free play genre during their touch screen play.

III. Building a dynamic relationship with peers

During my observations of children's touch screen play, children constantly changed roles and relationships. This, in my interpretation, showed that children's relationships with peers in their free play are dynamic and dialogically oriented. In their playing worlds, children are born diplomatic masters. They have neither permanent friends nor lasting opponents, only dynamic free will and changing roles and relationships. They can form alliances at any time they wish, and can also dismiss the agreement whenever they feel like doing so. The children in the centre appeared to be very familiar and comfortable with these kinds of dynamic, changing relationships. Their way of forming a dynamic relationship, from my interpretation, indicated children's free will. In the example that follows, children dynamically changed their roles and relationships during their play.

Excerpt 7.15: Three children (Evan, Damian and Jayden) played a Fishing game

Evan, Damian and Jayden were playing a Fishing game on touch screen devices on a couch. At first, Evan and Damian played together, while Jayden played on another tablet alone (See Image 1 & 2 in Figure 13). In the first image, Evan held the tablet and Damian sat nearby and watched patiently. In the second image, Evan gave the tablet to Damian indicating that they shared a common understanding of playing together as taking turns: Damian held the tablet and Evan sat nearby and watched. After a while, Evan became bored with watching Damian's play on the iPad and he then turned to watch Jayden's play on the iPad. (See Image 3 in Figure 13).



Figure 7.13: Three children's dynamic roles and relationships with touch screens

L1 Evan: (Instead of sitting next to Damian, Evan changed his seat from the left side to the middle, so he sat in between Jayden and Damian. Evan then spoke to Jayden) 'Let me see what you are playing.' (See Image 3)

In this interaction, Evan chose to quit the team relationship with Damian and showed he wanted to form a new team relationship with Jayden.

L2 Jayden: (Jayden was focused on the game and did not answer Evan)

It seemed that Jayden enjoyed playing the Fishing game alone, rather than adding a new playmate.

L3 Damian: (Damian spoke to Evan) 'Do you want to play skiing? What do you

want to play? Fishing or something else? Do you want to play Fishing?’

(Image 4)

Damian realized his ally (Evan) wanted to leave his team and look for another alliance, so he tried to make his ally stay by asking ‘What do you want to play?’, which could be seen as saying, ‘Don’t leave, I want to play with you’. Damian even proposed to play another game, ‘Skiing’ as a strategy for keeping Evan in his team.

L4 Evan: (Evan looked at the left and then the right and repeated this action once again)

Evan’s actions suggested he was thinking about which side he would choose to join.

L5 Evan: (Evan finally turned to the right and spoke to Jayden, who was playing a Fishing game on the tablet) ‘Brother, when I was young, I caught the fishes. I returned the fish after I caught one. Those fishes are domesticated in my home.’ (Image 5)

Evan spoke to Jayden, indicating he had chosen to join Jayden’s team. Evan tried to build a friendship and play with Jayden by telling Jayden about his childhood fishing experiences. That is, Evan tried to use his past fishing experience to convince Jayden to let him (Evan) join the fishing game Jayden was playing which showed very smart negotiation skills and self-promotion ability.

L6 Jayden: (Jayden was still focused on the Fishing game and did not respond to Evan)

Jayden continued to play the Fishing game and did not respond.

L7 Evan: (Evan then turned to the left and spoke to Damian) ‘Can I play one time?’

Here, since Evan failed to form a new playing team with Jayden, he then turned to Damian.

L8 Damian: (Damian was focused on the Fishing game and did not answer Evan)

It seemed that Damian also enjoyed playing the Fishing game by himself at this point..

L9 Evan: If someone failed to catch the fish, then it is the other person's turn, do you know that? See, you failed to catch the fish, it is my turn now! Hurry up!'

Since both Jayden and Damian did not want to give the tablet to Evan to play with, Evan then tried to make (or reiterate) a rule for playing in turns to make sure everyone (he) could have a turn.

L10 Damian: (Damian gave the tablet to Evan) (Image 6)

Damian's action showed that he agreed with the rule Evan had proposed. Evan's Voice of setting a rule worked in this case.

L11 Evan: (Evan played the Fishing game on the tablet) (Image 6)

L12 Damian: (Damian sat next to Evan and watched, sometimes he also use his finger to touch the screen to join in the game, playing together with Evan)

L13 Evan: I can catch two fishes.' (Evan tried to catch two fishes but failed)

L14 Damian: It is my turn now.' (Damian tried to take the tablet back)

Damian followed the rule Evan claimed just before – 'If someone failed to catch the fish, then it is the other person's turn' – and tried to take the tablet back but Evan did not relinquish the tablet.

L15 Evan: (Evan still held the tablet and did not give it to Damian)

Evan wanted to continue to play and so he held onto the tablet.

L16 Damian: (Damian took the tablet from Evan. Damian looked a little grumpy) (Image 7)

L17 Evan: (Evan gave the tablet to Damian and then left the couch) 'I need to do painting now.'

Evan knew very well the rule of 'playing in turns' he had claimed just before, and he knew Damian was a little grumpy at his non-compliance with the rule. From Evan's action of giving the tablet to Damian, it can be inferred that Evan did respect and obey the rule they had both agreed on, even though there was also a conflicting Voice of

wanting to play more in his mind. Put another way, Evan’s choice of giving the tablet to Damian showed his respect for the rule. His departure to go and paint offered a gentle and peaceful approach to the two conflicting Voices of the rule versus Evan’s wish to continue playing.

L18 Jayden: (Jayden moved his seat to the middle, where Evan had sat, and watched Damian playing on the screen. After a while, Jayden and Damian formed a new team and played together.) (See Image 8)

A new team was formed between Jayden and Damian. This was unexpected but appeared very natural and comfortable for the children themselves. For them, this seemed to be a familiar way of freely and dynamically relating to others/ each other.

Table 7.11: Competing Voices discerned in the child-led free play genre

Genre	Competing Voices	Dominant Voice
Child-led free play genre	Between the child and the adult; among peers.	The child’s inner Voice

In sum, in their use of child-led free play genre, it was found that children freely expressed their own views, creatively made new things (for example artwork, funny words), strategically solved conflicts through negotiation and using a sense of humour, collaborated with others and built a dynamic relationship with others.

Through children’s employment of the child-led free play genre, conflicting viewpoints can be noticed not only between the peers but also between the child and the adult. However, the child chose to prioritize his inner voice among competing Voices through their use of the child-led free play genre. Therefore, the child’s Voice was the dominant Voice through their use of the child-led free play genre.

7.3.2 Resistance genre

Resistance, in this chapter, refers to a child’s refusal to accept or comply with the rule set by adults, which represents power and authority. Through the use of the resistance genre, the child’s attempt and ability not to be influenced by someone (such as a caregiver or a teacher) is achieved by the child’s arguments and actions. Put another

way, the resistance genre was interpreted as the genre a child used to refuse to accept or comply with adults' voices, influence, authority and power through the child's words and gestures. Compared with the compliance genre we discussed in section 7.2.2, the resistance genre represents a different choice of the child when faced with the influence of an adult's voices. Instead of prioritising the adult's Voice in his use of a compliance genre, the child chose to prioritise his inner Voice through his use of a resistance genre.

The following video excerpt demonstrates the competing Voices between the teacher (the rule set by the teacher) and the child (resistance to the rule set by the teacher) discerned in children's use of the touch screen device. During this conflict, we can see the child's strategic use of different genres, especially a resistance genre, which shifts across different spaces.

Excerpt 7.16: The Gingerbread Man is silly! (Video No. AC-01)

When teacher Sarah turned the iPad on, Anna came at first and chose a video of The Gingerbread Man, then came other children, Kevin and Jayden. They were attracted by the iPad and all sat next to the teacher Sarah who held the iPad, showing the teacher's authority on setting rules of touch screen use in the ECE setting. Then, one of the children Kevin was not interested in watching The Gingerbread Man, but wanted to choose a video himself. However, teacher Sarah held the iPad, and as may be expected as a result, she obtained the power to make rules and choose videos. This introduction sets the scene for this episode. It is then interesting to observe how Kevin shows his resistance to the teacher's power and the rules teacher has set. In the following excerpt, we can see the genre of resistance Kevin employed in order to resist the teacher's power during his experience of using the iPad. Conflicts between teacher's Voices of the construction of power and the child's Voice of deconstruction of power emerge.

In the following excerpt, we can see how Kevin offered resistance to the rule set by the teacher.

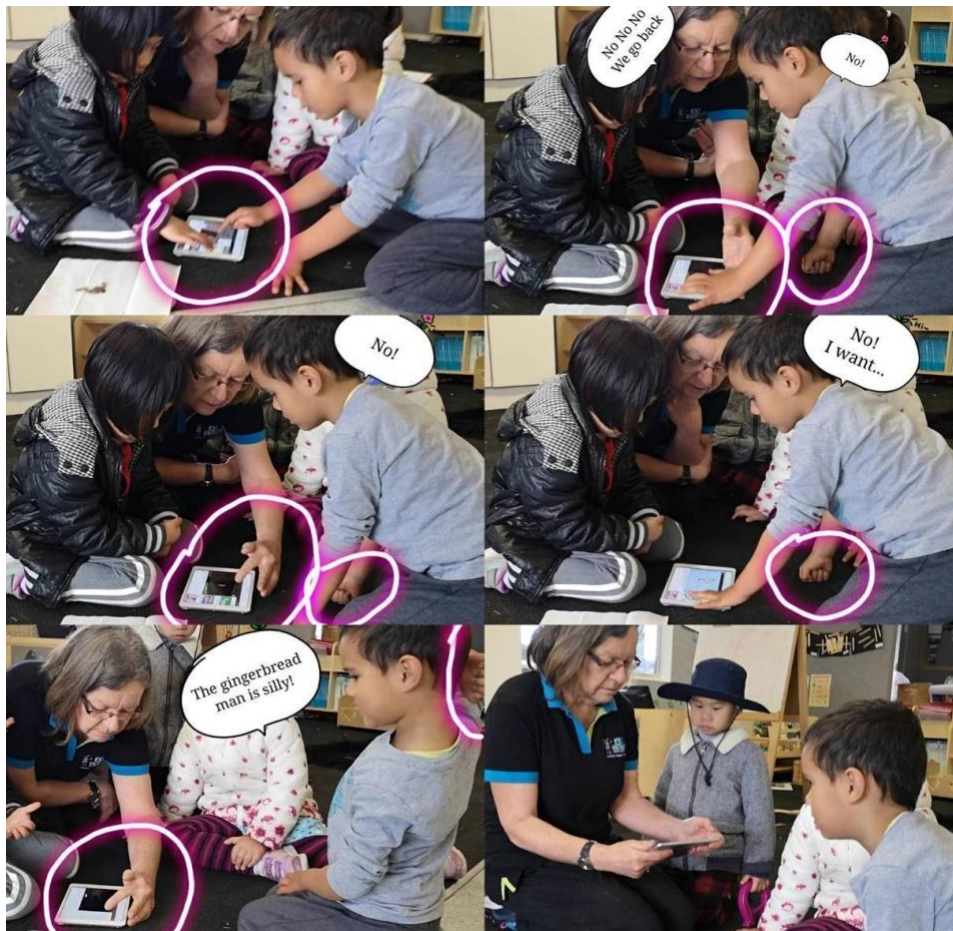


Figure 7.14: The teacher moved the child’s hand and covered the iPad screen

L1 Kevin: (Kevin reached out towards the iPad and clicked on the screen).

From Kevin’s gesture of clicking on the screen, we can see that he wanted to play or join in this play, even though it was not his turn. In response, teacher Sarah acted to maintain the rule she had set. She moved Kevin’s hand away when he tried to click on the screen, and she covered the screen to prevent him from touching it again.

L2 Sarah (Teacher): No, no, no, we go back. (Sarah moved Kevin’s hand away and covered the screen to prevent Kevin’s touching it.)

From the teacher’s words (expressing a direct rejection by stating ‘no, no, no’) and gestures (moving the child’s hand away and covering the screen), we can see that she maintained her rule in an authoritative way, which is often used in the teacher-led learning time/space.

L3 Kevin: No!’ (Kevin clenched his right fist and beat on the ground.)

Kevin expressed resistance through his words (see L3 ‘No!’) and through his body language (clenching his fist and beating on the ground) in response to Teacher Sarah’s actions of moving his hand away and covering the screen. Kevin’s gestures show his attempts to refuse the rules set by the teacher, to resist the influence of the teacher’s power and authority, and at the same time to exercise his Voice and agency to decide what and when he wants to play. However, observing this dynamic on a deeper level, what Kevin was resisting was not only the teacher’s specific action, but also the rule that the teacher had previously set and, in fact, the power the teacher had to set rules. Here, the child expressed his resistance through the use of the resistance genre, to fight for his right to play when there was a conflict between his interest and the rule the teacher set in this dialogic space shared by his teacher and peers.

L4 Sarah (Teacher): She [Anna; it was Anna’s turn] wants the gingerbread man, then maybe you too have one [chance to choose what you like].
(Teacher Sarah continued her action of covering the screen with her hand.)

Teacher Sarah explained the rule again to Kevin while simultaneously maintaining the rule by continuing to cover the screen with her hand to stop Kevin from touching it. However, Teacher Sarah made some concession by proposing that Kevin could have a chance to choose what he liked after this video of The Gingerbread Man. Nonetheless, her concession was limited because the decision was still in her hands.

The teacher’s verbal voice combined with her gesture of covering the screen with her hand, from my interpretation, illustrated: i) the teacher’s right to set rules for children’s play on touch screens, ii) the teacher’s role of maintaining the rule and ensuring equal opportunity for every child, and iii) the teacher’s power of expressing a unified Voice (the rule), which was expected to be listened by every child.

Competing Voices can be noticed here, not only between the teacher and the child regarding compliance with the rule versus resistance to the rule, but also within children due to their different wishes about their touch screen use.

L5 Kevin: No! I want... (Kevin raised his right hand and then hit his right fist to

the ground again)

Again, Kevin expressed his resistance through both his words and the gesture of raising his right hand (L5). Kevin's body language showed that he was fighting for his interest using the genre of resistance. His frustration was palpable.

Kevin's arguments and actions can be interpreted as an expression of his free will, his voice and agency. Here we can infer that the touch screen play was viewed as a child-led free play time/space by the child, while for the teacher, it was viewed as a teacher-led learning time/space, or could also have been about fairness and 'fair play' (taking turns is playing fair).

The plural Voices of Kevin as an actively responsive character can be recognized - responsive to its past ('No') and calling for a dialogic understanding from its future respondent (L5 'I want...'). He expressed his demand directly (L5 'I want...') to call for teacher Sarah's attention, understanding and dialogic response.

L6 Sarah: Ok, after The Gingerbread Man. (Sarah still kept the action of covering the screen)

L7 Kevin: The Gingerbread Man is silly! (Kevin raised his right hand again)

Again, Kevin gave a strong response (L7) to the teacher when she kept maintaining her rule and her power. From Kevin's outburst of words (L7) in a disrespectful way, we can notice his resistance to the teacher's power, which in this case was the rule set by the teacher that conflicted with his wish and was unlikely to be changed.

L8 Anna: My hand is stinky.

L9 Sarah: Yeah, it is a bit yucky.

L10 Anna: (Anna attempted to leave her seat to wash her hands)

L11 Sarah: [said to Anna] You go to wash them [hands] and then find the Gingerbread man again.

L12 Anna: (Anna left)

Here Anna changed the topic and left to wash her hands, which meant the condition of the rule changed (it was Anna's turn to watch the video of The Gingerbread Man but

Anna left) and Kevin might have a chance to choose what he wanted. However, the rule still did not change anything because the teacher asked Anna to wash her hands and then find the Gingerbread man again.

L13 Kevin: Errr... (Kevin made a screaming voice at the teacher and then left)

Finally, when Kevin knew he would need to watch the Gingerbread man even after Anna came back, he realized the rule was unlikely to be changed, so he gave up watching the iPad and left. The child’s screaming voice and his action of leaving can be interpreted as his frustration at failing to change the rule, but from my interpretation, it was a way of expressing his will, voice and agency, because he did not comply with or yield to a superior power or authority, instead, he chose to change his strategy by leaving this situation. Leaving was his active and strategic choice according to his free will, not compliance with the teacher’s rule and power.

Table 7.12: Resistance genre

Who	Content	Form	Context
Kevin	‘No!’	Kevin clenched his right fist and beat on the ground.	Teacher Sarah provided the video of The Gingerbread Man for children to watch while Kevin wanted to watch another video.
	‘No! I want...’	Kevin raises his right hand and then hits his right fist to the ground again	
	‘The gingerbread man is silly!’	Kevin raised his right hand again	
	‘Errr...’	Kevin made a screaming voice; left	

The above video excerpt illustrated the competing Voices between the teacher and the child regarding compliance with and resistance to the rule, the construction and deconstruction of the teacher’s power, and the suppression and exercise of the child’s Voice and agency. Although the child’s original goal (to watch a different video) was not accomplished, I still consider, from the child’s standpoint, the child’s Voice was

the dominant Voice in this case. The reason for such an argument is because the child chose to exercise his agency, express his Voice and act in accordance with his will, instead of being influenced by the teacher's Voice, complying with the teacher's rule and yielding to the teacher's power.

Table 7.13: Competing Voices discerned in resistance genre

Genres	Competing Voices	Dominant Voice
Resistance genre	<p>The power of the teacher's Voice and the child's Voice and agency:</p> <p>i) Teacher's Voice: Authority, the construction of the teacher's power, suppression of the child's agency.</p> <p>ii) The child's Voice: Resistance, the resistance of the teacher's power, the exercise of the child's agency.</p>	The child's Voice

7.3.3 Whisper genre

Bakhtin draws researchers' attention to 'the whisper of the precursor' (Jones, 1990, p.149) as a clue to hidden meanings. The whisper embodies the whisperer's psychological state, contradictions and struggles. The whisper genre is presented here as a tactical manoeuvre to move from the public space (where a common understanding of action is shared by all the children) to an intentionally created private space (where different voices are expressed by only two of the children). The following excerpt provides an example of the child's use of the whisper genre in a dialogue, highlighting the child's strategic way of creating a relatively private space (versus a public space) between the whisperer and the recipient (the listener to whom the child whispers) to express a voice that is different from public expression.

Excerpt 7.17: The whispered Voice and its dialogic response (Video NO. JC-04)

In this episode, a group of children was playing with the iPad together in the centre. It was Jayden's turn, but Melanie also wanted to play.



Figure 7.15: Jayden moved Melanie’s hand away & an inner heteroglossic moment

L1 Melanie: (Melanie made a quick click on the screen)

Melanie reached to quickly click on the screen, expressing her Voice of wanting to join in the play. She had acknowledged the Voice of the common rule that the teacher had set regarding the use of touchscreen devices when she did ‘a quick click’.

L2 Jayden: (Jayden moved Melanie’s hand away)

Jayden moved his peer’s hands away (again) to stop her from clicking on the screen.

After she was denied the possibility of playing on her first click request, Melanie looked as though she was lost in thought, considering the strategy of her next move.

L3 Melanie: (Melanie whispered something in Jayden’s ear while covering her mouth with her hand)

Melanie strategically changed her communicative style by approaching Jayden and speaking into his ear in a whispered tone while covering her mouth with her hand. Her action of whispering transformed their dialogic space from a public one into a relatively private one, shared between only the two of them so that she could express a Voice that was different from her public expression (see Cresswell & Sullivan, 2020).

Later, during our reflective conversation after viewing the video, I asked Melanie what she had whispered to Jayden and she said she had asked him to play the iPad game with her. Here, Melanie’s whispered voice could be seen as expressing her intention to break the unified rule and form a new rule. This process of struggling reflects what Bakhtin

describes as the conflict between centripetal force and centrifugal force. Melanie's whispered voice can be reasonably interpreted as her quick-witted shift between different communication genres across these different spaces to build a new rule for playing together with Jayden.



Figure 7.16: Melanie whispered to Jayden

L4 Jayden: (Jayden concentrated on the iPad and made no response to Melanie's whisper)

Jayden did not display any response to Melanie's first whisper and continued to concentrate on the touchscreen game. This suggested to me that Jayden was not ready to move to the private dialogic space that Melanie had created, he was still located in the public space that he shared with his peers. As such, he continued to use the communication style that he normally used in this space which was to play when it was one's own turn (instead of playing together). Here, the Voice of the invisible speaker (the teacher's Voice of playing in turn) was stronger than the Voice of the whisperer.

L5 Melanie: (Melanie whispered to Jayden again)

Melanie did not give up on her new strategy and enhanced the power of her Voice by whispering to Jayden a second time, urging him to respond in the private dialogic space she had created.

L6 Jayden: (Jayden responded with a slight smile, while still concentrating on the iPad game)

Jayden acknowledged her whispered Voice (of playing together) this time, and he gave her the positive response of a slight smile (an affirmation of her whispered Voice and acknowledgement that her creation of a private dialogic space was shared by the two of them). However, he still concentrated on the touchscreen game (his actions still focused on his peer-shared public space). These two actions (smiling and playing on the touch screen game) showed that Jayden positioned himself on the boundary between the public space and the private space; his style of dialogue corresponded to the nature of both of these spaces.

L7 Melanie: (Melanie whispered to Jayden for the third time)

Melanie whispered again in an attempt to make her Voice stronger than the Voice of the invisible speaker.

L8 Jayden: (Jayden responded with another slight smile but continued to concentrate on the touchscreen game)

By his concentration on the touchscreen, Jayden indicated his respect for the common rule set by the teacher, although by the gesture of smiling he gave the Voice of the whisperer a positive response. In my interpretation, this was the moment of inner

heteroglossia for Jayden. The Voice of the teacher (the execution of the rule), the Voice of the whisperer (seeking an exception to the rule), the Voice of resistance (resisting or breaking the rule) and the Voice of the 'good child' (following the rule) were all potentially in play, competing with one another in their struggle for importance and priority. This was a moment when there was a multitude of competing Voices and Jayden needed to make a judgment as to what his priorities were.

L9 Melanie: (Melanie attempted to click)

Melanie further enhanced her Voice by her action of attempting to click the screen.

L10 Jayden: (Jayden stopped all his playing movements on the screen and patiently waited for Melanie's click, without interrupting her action)

This was a pivotal moment. Even though he did not make an utterance, Jayden provided a positive answer to the Voice of the whisperer. He discontinued his playing movements and waited patiently for Melanie's click. It would appear that at this moment, the Voice of the whisperer won out.

This action illustrated that Jayden had stepped into a different dialogic space (a private space shared by the two of them), where a different strategy or policy/rule was employed.

L11 Melanie: (Melanie continued clicking on the iPad screen with a big smile on her face)

Melanie's big smile and numerous clicking actions are evidence that she had happily immersed herself in the game and that she was trying to make the most of the opportunities afforded by the rule that she had created by creating a private space-where, contrary to the teacher's rule that the children should play one at a time, children could play together. This rule countered the public space rule that was understood and shared by all the other children in the public space. She was the master of her play in this moment of collaborative play.

L12 Jayden: (After waiting patiently for some time, Jayden clicked on the screen and played together with Melanie).

Jayden employed a new strategy of waiting patiently without interrupting and then clicking on the screen together with Melanie. This action indicated that the new rule of playing together was being applied in this new private space.



Figure 7.17: Melanie played with a big smile, and Jayden waited patiently

Table 7.14: The whisper genre, competing Voices and the dominant Voice

Space	Centre space with peers but without a teacher The shift between the public space shared by peers and the private space shared by two children.
Genre	The genre of whisper
Content	Whispering words
Form	i) Melanie whispered into Jayden's ear while covering her mouth with her hand. ii) Jayden responded with a slight smile.
Competing Voices	Between two children regarding the execution of the teacher's rule in a public space and the exception to the rule in a private space.
Dominant Voice	The whisperer's Voice finally dominated as Melanie achieved her goal of playing together with Jayden on the touchscreen device.
Hidden dialogue	Hidden dialogue through whisper between the two children regarding the negotiation of playing with touchscreen devices.

7.4 Summary

I. Genres children employed during their touch screen use

My findings illustrated six genres which children employed when they used touch screen devices in the centre, at homes and elsewhere. These genres were the adult-led learning genre, the compliance genre, the invisible speaker genre, the child-led free play genre, the resistance genre and the whisper genre. Table 7.15 summarises these genres, conflicting points and dominant Voice.

Table 7.15: Finding of genres

Genres identified	Conflicting points discerned	Dominant Voice
Adult-led learning genre	Adult's Voice of learning purposes/ outcomes VS Child's Voice of free play without any direct or explicit purpose	Adult Voice
Compliance genre	Adult's Voice of rules VS Child's Voice of complying with the rules (adult power)	Adult Voice
Invisible speaker genre	Child's inner heteroglossia: The invisible speaker (adult)'s Voice of rules VS Child's Voices of listening to or resisting the rules (adult power)	Invisible speaker (adult)'s Voice
Child-led free play genre	Adult's Voice of learning purposes/ outcomes VS Child's Voice of free play without any purpose	Child Voice
Resistance genre	Adult's Voice of rules VS Child's Voice of resisting the rules (child agency)	Child Voice
Whisper genre	Child's inner heteroglossia: Adult's (invisible) Voice of rules VS child's Voices of changing the rules (child agency)	Child Voice

II. Children's Voices discovered through genres: Outside-in Voice and Inside-out Voice

I classified these six genres into two sets: Outside-in genres (the former three genres) and Inside-out genres (the latter three genres) according to the source of the child's voice. From children's employment of Outside-in genres, the Outside-in Voices of children were generated because the child incorporated an outside voice into their own voices. In contrast, during children's employment of Inside-out genres, the Inside-out Voices of children were produced because the child expressed their own voices according to their free will instead of adults' commands, intentions and expectations. Table 7.16 summarises these points.

Table 7.16: Children’s Voices discovered through genres

	Outside-in genres	Inside-out genres
Genres	- Adult-led learning genre - Compliance genre - Invisible speaker genre	- Child-led free play genre - Resistance genre - Whisper genre
Children’s Voices	Outside-in Voices	Inside-out Voices

III. Competing Voices between adults and children: the Voice of adult power versus the Voice of child agency

Tensions were also found within children’s voices as the child experienced inner heteroglossia between the influence of adult’s voices and the child’s agency in expressing their own voices. This tension suggests competing Voices between adults and children. From conflicting points discerned through children’s voices (see Table 7.16), two overarching competing Voices between adults and children were recognised: the Voice of adult power versus the Voice of child agency. While the Outside-in Voices illustrated the influence of the adult’s voice on the child’s voice, the Inside-out Voices revealed the child agency of expressing their own voices.

In addition to these competing Voices, the dominant Voice were also noticed through the child’s choice of prioritising a certain voice among multiple voices. While the child chose to prioritise the adult’s voice through their employment of Outside-in genres, they chose to prioritise their own voice through their use of Inside-out genres. Table 7.17 summarises these points.

Table 7.17: Findings of genres, children’s Voices, Competing Voices and the dominant Voice

	Outside-in genres:	Inside-out genres:
Genres children employed	- Adult-led learning genre - Compliance genre - Invisible speaker genre	- Child-led free play genre - Resistance genre - Whisper genre
Children’s Voices	Outside-in Voices	Inside-out Voices
Competing Voices between adults and children	The Voice of adult power (the influence of adult Voice)	The Voice of child agency (children’s expression of multiple voices)

The child's prioritising of a certain Voice	Prioritising the adult's Voice	Prioritising the child's inner Voice
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I. A model of genres, children's voices and competing Voices

In order to represent the flow of Voices (Outside-in and Inside-out) and discern children's Voices and competing Voices through children's use of genres, I drew a model as shown in Figure 7.18.

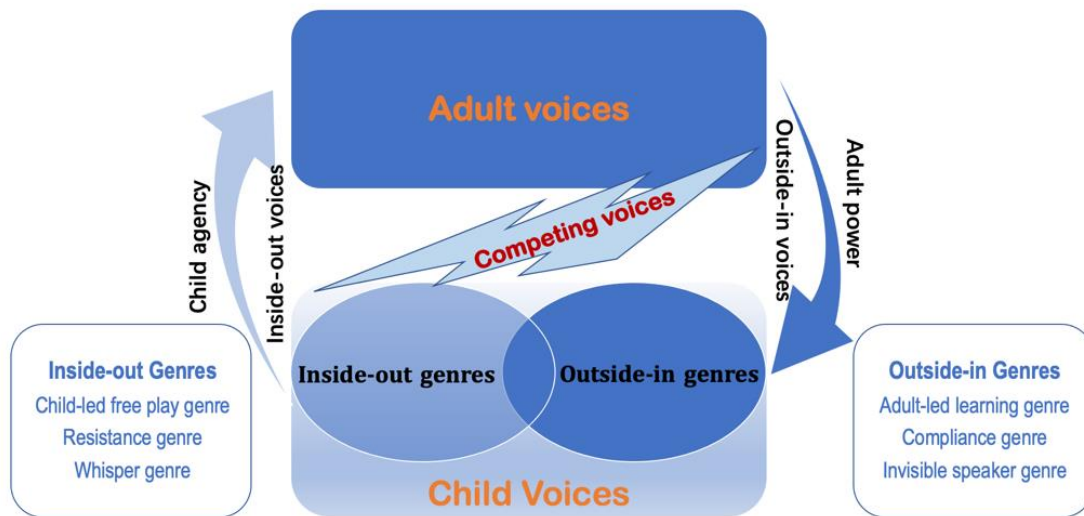


Figure 7.18: A model of genres, children's Voices and competing Voices

In the above model, the child Voice is made of two parts: the Outside-in Voice and the Inside-out Voice. There is some overlap between the two, which shows the child has internalised the outside Voices into their inner Voice, their own expression. The Outside-in Voice represents the influence or power of the adult's Voice that is exerted on the child's Voice. In the presence of adult power, on one hand, the child chose to accept this influence through their use of Outside-in genres (for example, the adult-led learning genre, the compliance genre and the invisible speaker genre). On the other hand, the child chose not to be affected by this power but chose to express their own Voices, which reflected the child's agency. The child's agency in expressing their own Voices was discovered through their use of inside-out genres (for example, the child-led free play genre, the resistance genre and the whisper genre). Thus, competing Voices were identified: the Voice of adult power versus the Voice of child agency,

through the child's employment of various genres and the child's assimilation of Outside-in Voices and Inside-out Voices.

Considering these six genres together, they highlight children's struggle between adult power and child agency when engaging in their use of touch screen devices. Even while conforming to the rule set by adults, the child's own Voices emerged, often with an intention or interest in changing the rule or creating a new rule according to their own wishes. Thus, children's use of various genres, to some extent, can be viewed as children's strategic response to adult power in conjunction with their creative exercise of agency.

In this chapter, I have provided evidence that children's practice in relation to touch screen devices illustrated not only children's Voices discovered through genres, but also competing Voices between adults and children that are played out through children's inner heteroglossia. Furthermore, the dominant Voice was discernible through children's prioritising of a certain Voice. Therefore, I concluded by arguing that children's use of touch screen devices is a form of Voice, discovered through children's employment of various genres. This form of Voice was not only brought about by multiple often competing Voices in a heteroglossia arena, but also revealed the child's choice to prioritise a certain Voice (dominant Voice) among the competing Voices in a setting. This choice is revealed through the child's Voices, verbal and non-verbal, alongside actions in practice.

Chapter 8

Discussion

8.1 Introduction

In this study, I set out to explore three questions:

- i) What are the competing voices of New Zealand teachers and Chinese caregivers surrounding Chinese preschool children's touch screen use in a New Zealand ECE setting?
- ii) What are Chinese preschool children's voices on their experiences of touch screens?
- iii) What competing voices of adults and children can be discerned in children's touch screen use?

My findings have shown competing Voices about children's use of touch screen devices within and between New Zealand ECE teachers and Chinese caregivers (responding to Question one, see Chapter 6). Children's voices on their experiences of touch screens, which were missing in literature were invited to join in this discussion (see Chapter 7). I have used the genre to explore children's voices so that children's expressions through their body language are considered. My findings have reported a rich array of children's voices through their strategic navigation of various genres in different spaces during their touch screen use (responding to Question two, see Chapter 7). Through children's strategic employment of genres as a way of responding to the influence of adults' voices, a new layer of competing Voices between children and adults emerged (responding to Question three, see Chapter 7).

There are two parts to this discussion chapter. In the first part, I discuss my findings in relation to Bakhtinian dialogism. I use heteroglossia as an analytical framework to understand competing Voices and children's Voices. The competing Voices of teachers and caregivers (Question one) revealed the plurality of Voices. Children's Voices (Question two) showed their assimilation of authoritative discourse and internally persuasive discourse. The competing Voices between adults and children (Question

three) showed the struggle between centripetal forces and centrifugal forces; also illustrated children’s two forms of heteroglossic expressions: children’s resistance to adults’ rule and power and their creativity in making their own rules and culture.

In the second part of this discussion, I discuss my findings in relation to their contribution to the literature on digital learning. I identified three issues about competing voices found in my study on preschool children’s touch screen use: i) learning versus entertainment, ii) social versus anti-social and iii) creativity versus limiting creativity. My findings on these issues can enrich the current literature about children’s use of touchscreen devices.

8.2 Heteroglossia as a framework for understanding competing Voices

Bakhtin (1986) theorized the concept of heteroglossia as the multiple ways of speaking that co-exist within a social environment. Sawyer (1997) interpreted Bakhtin’s account of heteroglossia in children’s play as analogous to the polyphonic voices of musical performance: ‘Both concepts suggest that one can view each child’s voice as an ongoing parallel contribution to a polyphonic composition, an improvised collective performance’ (p.174). According to Sawyer (1997), children take on roles in the play and vary the role and discourse when communicating with one another, based on their own unique experiences. Therefore, I used the concept of heteroglossia as an analytical framework to understand competing voices on children’s touch screen use in my study because it allowed me to interpret children’s voices discovered through genres and their interactions with others (teachers, caregivers and peers) as well as in competition in a ‘polyphonic composition’ (Sawyer, 1997, p. 174).

Table 8.1: Using heteroglossia as a framework to understand competing Voices

Questions	Findings	Heteroglossia
Competing voices of teachers and caregivers	i) Voice of conditional support; ii) Voice of opposition or reluctance	The plurality of voice(s)
Children’s voices	i) Outside-in Voice ii) Inside-out Voice	Children’s two ways of assimilating Voices: i) Authoritative discourse

Competing voices between adults and children	i) Voice of adult power	ii) Internally persuasive discourse
	ii) Voice of child agency	Social forces: i) Centrifugal force ii) Centripetal force Children's two kinds of heteroglossic expressions: i) Resistance to adult power ii) Creation of children's culture

8.2.1 Recognising the plurality of Voices

One of the key concepts in Bakhtin's dialogic theory is the plurality of Voices. As already noted in section 4.3.1, even in an utterance or a word, audiences can hear two or more competing voices (Bakhtin and Emerson, 1993). My findings on the competing voices of New Zealand teachers and Chinese caregivers (see Chapter 6) reflects Bakhtin's understanding of plural Voices.

My findings showed that the Voices of teachers or caregivers, as a group, are far more complex than just a single Voice. Even within an individual (teacher or caregiver), two or more Voices can be heard, which corresponds with what Bakhtin described as the plurality of Voices (see section 6.1.4 and 6.2.4). For example, Kelly expressed a Voice of opposition or reluctance but qualified her opposition because due to the policy and curriculum, she could still see a place for touch screen use under certain conditions. Hence a Voice of conditional support was also discerned in Kelly's comments. In Kelly's viewpoint, more than one Voice was heard, which reflects the conception of the plurality of Voice(s).

8.2.2 Children's assimilation of Voices in social interactions

Bakhtin (1981) described two ways in which individuals assimilate the Voices of others: authoritative and internally persuasive discourses. Authoritative discourse is fused with authority and power. Discourse that is authoritative must be accepted without question. In contrast, internally persuasive discourse is "backed by no authority at all and is frequently not recognized by society" (p. 342). Bakhtin (1981) characterized these differences between authoritative discourse and internally persuasive discourse as two

Voices with different perspectives. There is always a struggle between authoritative discourse and internally persuasive discourse. This struggle was examined by scholars, not only in language but also in educational research. For example, scholars (Cohen 2009; De Vocht, 2015) described these struggles between teachers and children in education settings, suggesting that dialogue always exists between individuals and the dominant culture, and among individuals in different situations of power. This struggle was also found in my investigation of competing voices about children's everyday experiences of touch screens.

In children's touch screen use, adults' rules, norms and culture were congruent with Hsu and Roth's (2014) interpretation of the authoritative word. Hsu and Roth depicted it as the word of authority, deriving from the elders, which has been acknowledged in the past and cannot be altered or adjusted. In contrast, children's expressions reflect the internally persuasive word, which is freely developed and allows for the child's voice to join in and participate with the word that they have appropriated from others. The internally persuasive discourse allows for the adoption of new material, new conditions, and new contexts, thus enabling creativity and productivity.

8.2.2.1 Children's Voice of authoritative discourse

Within the context of children's everyday experiences of touch screen devices, my findings show that children originally find adults' rules, norms and culture to be authoritative. An example is that Jayden initially chose to maintain the rule the teacher established on a previous occasion, when he played with his peer Melanie on another occasion, without the presence of the teacher. Jayden still considered the teacher's rule to be authoritative and obeyed, even though the teacher was absent in this new context. Thus, my data shows part of children's Voices are authoritative discourses derived from adults.

The influence of adults' authoritative discourse can be seen in children's employment of the adult-led learning genre and the compliance genre (as reported in Chapter 6). From adults' perspectives, touch screens should be used for children's learning and under adult supervision (viewpoints in Chapter 5). Children employed the adult-led

learning genre to respond to adults' norm of useful learning under supervision. This reflected children's acknowledgement of and submission to adults' authority and power. For example, when the teacher Sarah led the child Anna to search for information about 'how do worms move' in the centre, Anna followed the teacher's instructions step-by-step to find answers on Google. This process achieved what the teacher thought of as 'useful learning' and 'under supervision'. This process of surrendering to adults' authoritative discourse was also found in children's employment of the compliance genre. For example, when Evan complied with his mum and turned the iPad off by himself, it showed that he had assimilated his mum's words, submitted to his mum's authority and chosen to act according to the rules, norms and culture set by his mum on touch screen use. Based on my findings on children's voice of authoritative discourse, it appears that under the supervision of adults (either the teacher or the caregiver), children's use of touch screens is very likely to be practised according to the adults' rules, norms and culture.

However, in children's touch screen play, children's discourse constantly moved from authoritative discourse to internally persuasive discourse (Bakhtin, 1981), as children's own voices constantly joined in the dialogue even when they drew on others' words. Children's voices of internal persuasive discourses can constantly be found even in children's submission to the authoritative discourse. For example, when Evan assimilated his mum's words and submitted to his mum's authoritative discourse, he revoiced his mum's earlier words such as 'turn it off', 'eat something' (see section 7.2.2), which is evidence of children's borrowing of others' voices (outside voices) and then transforming those voices into their inner voices (outside-in voices).

8.2.2.2 Children's Voice of internally persuasive discourses

For Bakhtin (1981), the internally persuasive discourse is "tightly interwoven with one's own word" and "half-ours and half-someone else's" (p. 345). Internally persuasive discourse allows for the mutual communication and mutual construction of knowledge, and therefore it is a discourse that is dialogic and enables collaboration and true communication. My findings show that children often assimilate and reframe

adults' voices into their own expressions through a process of internalization and appropriation. This process implies that the child responds as a consumer who transports Voices from the outside to the inside.

In an example of children's employment of the invisible speaker genre, even though the teacher is not physically present, the child Jayden still followed the teacher Sarah's rule (playing in turns and waiting when it is not his turn), and her body language (covering the iPad screen to stop someone when it is not his turn). In a situation of peers' touch screen use without the presence of teachers, when it was not the other child's turn, Jayden covered the iPad screen, moved the other child's hand away, and said 'No' to the other child. These expressions reflect the child's internally persuasive words, which he has appropriated from the teacher and enable their adoption in new contexts. It is evident that the child internalized the teacher's voices, verbal and non-verbal, into his own expression, and appropriated the teacher's rules for his own use in this similar but new context. Thus, when the child appropriates the teacher's authoritative words into their own internally persuasive words in which the child shares ownership, the teacher's authoritative words acquire a new evaluative accent in the voice of the child.

8.2.3 Children's heteroglossic expressions in social forces

In Bakhtin's description of social tensions in Voices, he used the concept of the opposing pull of 'centripetal' and 'centrifugal' forces. Whereas the centripetal force constitutes the pull towards the unitary Voice, homogeneity and correctness, the centrifugal force pulls towards heteroglossic disunification and decentralization. These forces are rarely free of each other. The centripetal forces of Voices operate in the midst of heteroglossia and coexist with centrifugal forces which carry on their uninterrupted work. Bakhtin (1981) explains: "Every utterance participates in the 'unitary language' (in its centripetal forces and tendencies) and at the same time partakes of social and historical heteroglossia (the centrifugal, stratifying forces)" (p. 272). Competing Voices in my study reflect the social tensions between the centrifugal forces and the centripetal forces. While the unitary Voice tended to justify itself as correctness, diverse Voices emerged and tended to pull towards a heteroglossic arena where multiple Voices

interacted and competed with each other. Heteroglossia as my analytical framework, therefore, is used to account for the social and cultural forces within Voices.

Bakhtinian dialogism provides new opportunities to understand children's voices and agency, in that it allows researchers to look beneath the complex layers of the voice, and into the underground lives of children. From children's employment of various genres, not only children's voices were noticed, but also a new layer of competing voices between adults and children was recognised as i) the Voice of adult power versus ii) the Voice of child agency. These competing voices reflected the two social forces in the adult-child interaction. While the adult's rule and power, as the centripetal force, tends to claim its correctness, the child's agency, as the centrifugal force, pulls towards heteroglossic expressions. Two forms of children's heteroglossic expressions were found in the presence of an adult's authority and power: i) Children's resistance to adults' rule and power, and ii) Children's creativity in making their own rule and culture.

8.2.3.1 Children's resistance to adults' rule and power

Drawing on the theories of Bakhtin's dialogism (1981, 1986), I consider that children's voices within social and cultural interactions embody knowledge, belief, identity and agency in relation to others. This socialization or education does not take place by means of an authority-to-novice approach, but as a reciprocal process of cultural transmission and consumption in which children may reproduce and/or resist the adult's socialized voice and transmitted culture. Corsaro and Eder (1990) examined children's cultural resistance and claimed that children's voices and culture that are informal, improper or senseless in the eyes of adults constitute children's cultural resistance to the domination of the adults. In other words, children's voices of resistance to adults' dominant culture were likely to be viewed by adults as improper or foolish due to the authority and power of adults.

In my study of children's touch screen use, children's voices of resistance to adults' rule, norm and culture, as an authoritative voice, were demonstrated in children's strategic employment of the resistance genre (see section 6.3.2 in chapter 6). In the

example of 'The Gingerbread man is silly', the child Kevin employed the resistance genre to express his voice of resistance to the teacher's rule, authority and power. The child used his words ('No', 'No, I want...') and his body language (clenching his fist and beating on the ground) to express his resistance to the teacher Sarah's rule as an authoritative Voice. By resisting this unitary voice, this child tended to move toward a heteroglossic disunification. This heteroglossic disunification reached its most intense moment when Kevin answered 'The Gingerbread man is silly' immediately after the teacher said 'Ok, after [we watch] the Gingerbread man'. This child's response shows his resistance to the teacher's rule, authority and power, which seems to be unshakable. Finally, Kevin chose to leave when he realized that the teacher's rule was unlikely to be changed in this situation. I interpret his decision to leave as his final resistance to the teacher's authority power because he did not comply with or yield to a superior power or authority; instead, he actively chose to change his strategy by leaving of his own volition.

Hence, although children's touch screen use is likely to be dominated by adults' rule, authority and power, as a social force tending to a unitary voice, especially when such use is under the supervision of adults, still, there are voices of children's resistance, as another social force tending to heteroglossic disunification.

8.2.3.2 Children's creativity in making their own rules and culture

In opposition to the Romantic conceptions of freedom and creativity, which tended to view the creative act as a sudden interruption from outside the causal chain, Bakhtin located creativity in everyday life. For Bakhtin, creativity and responsibility are inseparable, both part of the 'task' and work of daily life. By examining the context of dialogue, Pennycook (2010) claims that creativity occurs, when an old text (or a part of it) is relocated into a new communication time and space which has different social norms and conventions. In other words, creativity is understood as a remaking or a new way of seeing or being. It happens in our daily life when applying part of old experiences to a new context. Tam (2012) examined children's creativity in their daily life in a Hong Kong kindergarten's pretend play corner. She revealed that children are

capable of creative culture-making and this creativity is deployed when the teacher's surveillance is temporarily absent.

This creativity was also visible in children's everyday experiences of touch screen devices in my study. A number of examples can be drawn from my data to illustrate children's creativity in expressing their views, creating new things such as artwork or funny words, making their rules, strategically solving problems and building relationships.

In an example of children's employment of the whisper genre, Melanie strategically created a relatively private space (versus a public space), between the whisperer and the listener (Jayden), to express a voice that is different from public expression. Consistent with the shift of space (from the public space to the private space), the children strategically created their new rules, norms and culture which were different from the authoritative ones. If we examine the process from the perspective of Jayden the listener, this shift in spaces and rules can be demonstrated. At the beginning, Jayden prioritised the teacher's rules, norms and culture and used the authoritative words he has assimilated from the teacher (the rule of playing in turns). He kept maintaining this rule through his body language of using the iPad individually, instead of playing together as proposed by Melanie. After Melanie's three whispers, a centrifugal force gradually pulls him away from the authoritative centre to heteroglossia where multiple voices are co-existing. Finally, Jayden shared the touch screen play with Melanie, which illustrated that Jayden had stepped from a space, where the teacher's rules, norms and culture were employed, into a different dialogic space (the private space shared by the two of them), where a different rule, norm and culture were created and applied. Thus, my findings reveal that even in a situation where teachers' rules and culture were dominant, the children are able to seek out opportunities to use tactics to transform it. The complex and creative ways and processes of children's employment of various genres to express multiple voices also illustrate that children are capable players, language users and culture makers.

This creativity can also be found in children's employment of the child-led free play genre, where children showed their creative expressions when they were in their free

play time/ space outside of adults' supervision. For example, they created the running cat, the dancing cat through artwork on the iPad; they used a sense of humour by creating funny words to solve their conflicts; they built a dynamic relationship when playing a fish game on the iPad. My findings illustrated that children strategically create their own rules, social norms and culture when adults are absent in the time/space of their touch screen use.

In sum, under the supervision of adults, children's touch screen play is largely practised according to adults' rules, norms and culture due to the authority and power of adults. However, there are also voices of resistance in the face of the authoritative Voice and the domination of adults' culture. In this resistance, children express their own voices and move towards heteroglossic disunification. I conclude by arguing that children's creativity in making their own rules and culture can only be seen when the supervision of adults is temporarily absent.

8.3 Discussion on children's touch screen use

ICT is an important consideration in my study. In this section, I discuss how my findings contribute to the key debates identified in the current literature about preschool children's use of touchscreen devices.

8.3.1 Learning versus Entertainment?

My literature review showed that there are coexisting voices of support and concern among both teachers and caregivers concerning children's use of touch screen devices, and that one of the conflicts seems to depend mainly on the extent to which teachers or caregivers believe touch screens hold educational value, as opposed to being entertainment (see section 2.1.2 and 2.1.3).

My findings show that the viewpoints are complex as opposed to binary. With regard to learning or entertainment, some of my participants said touch screen use is just entertainment (see teachers' viewpoint four in section 6.1.2.2, for example, the views of Maggie and Kelly), while others said it can be both learning and entertainment (see teachers' viewpoint 1 in section 6.1.2.1, and caregivers' views in section 6.2.2.1, for

example, the views of Sarah and Jayden's grandpa). There were no completely polarised views in this respect, as no one said touch screen use is only education and not entertainment or the converse. Therefore, my findings show that there is not a clear binary between those who see touch screen use as education and those who see it as entertainment.

From the various genres that children employed during their touch screen use, there was evidence of a considerable amount of learning taking place, such as literacy, collaboration, creativity and conflict management. These findings add substantial weight to the recognition that touch screen use by children can offer significant learning opportunities as well as entertainment (Oliemat et al., 2018).

8.3.2 Social versus Anti-social?

The literature showed that some teachers perceived that using iPads was isolating and caused anti-social behaviour (Finch & Arrow, 2017; Santamaria, 2020). My findings illustrated that this view was agreed on by some teachers (see teachers' viewpoint 5: children's touch screen use will lead to a lack of socialising, in section 6.1.2) and a caregiver (see viewpoint 8 from Evan's mum: Touch screen use limit children's opportunities for socialising, in section 6.2.2). However, the opposite view was also expressed. Jayden's grandpa said that one of the advantages of Jayden's use of iPads and games is that he could join conversations with other children (see caregivers' viewpoint 2 in section 6.2.2), so this caregiver viewed touch screens as a useful socialising tool. He said that iPad use could help a child to make friends because the child can talk about the same game or the same app with his friends. The socialising positives of touch screen use were also noted by a teacher (Amanda) who suggested that the touch screen could be used to teach social skills such as sharing (see teachers' viewpoint 2 in section 6.1.2).

From my findings of children's touch screen use in practice in Chapter 7, children are highly capable of collaborating with their peers during their touch screen use. For example, in children's use of the child-led free play genre (see section 7.3.1), two children collaborated to draw a cat's tail with blue and yellow stripes on the iPad, which

combined both children's ideas. This kind of collaboration was also found in children's employment of the whisper genre. While the teacher made the rule of playing in turns which I interpret as an individual learning experience, the children were still able to create a new rule by shifting from a public space to a private space, and build a new relationship of playing together and thus achieve collaborative learning. My findings have not shown any anti-social behaviour in children's touch screen use in practice, instead, children's collaborative learning was mainly observed during their touch screen use.

8.3.3 Creativity versus Limiting creativity?

The literature highlights a conflict about whether touch screen use promotes children's creativity or limits children's creativity. While some teachers reported that iPads were used for creativity (Fagan and Coutts, 2012; MacCallum and Bell, 2019), other teachers raise concerns that touch screen use will limit children's creativity and imagination (Santamaria, 2020). This concern about touch screen use limiting creativity was also expressed by parents (Wartella, 2012).

My findings of children's strategic employment of various genres illustrated an array of examples of children's creativity during their touch screen use (see Chapter 7). For example, in children's employment of the child-led free play genre, the children demonstrated their creativity through exercising their agency, creating artwork using humour (through artwork, words), for problem-solving and building dynamic peer relationships (see section 7.3.1). Children's creativity was also found when children made their own rules to resist the teacher's rules, which showed in children's employment of the resistance genre (see section 7.3.2) and the whisper genre (see section 7.3.3). In these ways, my findings enriched the literature on children's touch screen use as a way of demonstrating children's creativity.

8.4 Summary

My research journey has provided me with a rich opportunity to explore the complex perspectives that adults hold on pre-schoolers use of touch screens in early childhood, the children's views on their experiences of touch screens, and the competing voices of children and adults in relation to their use. This discussion chapter illuminates how my research findings have provided insights into these key areas and how I have applied Bakhtin's dialogic theories to interpret the discourses and practices that I have observed. In addition to the enhanced understanding of the co-existence of and competition between multiple discourses concerning preschoolers' use of touch screens, the discussion argues that the research findings enhance and extend the existing literature on children's ICT use.

The discussion chapter shows how my findings provide practical evidence of Bakhtin's concept of the plurality of voices that underpin every speech act, the multiple discourses within heteroglossia, and practical examples of the co-existence of and competition between authoritative and internally persuasive discourses. Observing the children's engagement with touch screens first hand has also enabled me to demonstrate the practical mechanics of the tension between centripetal and centrifugal forces.

My findings have also made specific contributions to some of the key debates in the literature on children's ICT use. Interviews and observations have made it clear that there is no absolute polarisation as to whether touch screens are education or entertainment, but it is clear that they can be a combination of both of these. Furthermore, the discussion chapter draws on the findings to show that the children are able to work out collaborative strategies in their touch screen use. Finally, the discussion chapter highlights the evidence of the findings that show the creative possibilities for children through their engagement with touch screens.

Chapter 9

A dialogic answerability and (un)finalized Voices

In this chapter, I propose to share the tension many Bakhtinian researchers experience when drawing conclusions. While I offer situated conclusions that I am answerable for, I also invite dialogic responses or debates from readers. To be answerable for my research questions, I go back to these questions and summarize how my findings respond to these questions. I then describe the implications of my findings for policymakers, ECE teachers and caregivers. I conclude the chapter by summarizing the limitations of the study and setting out possibilities for further research.

9.1 A dialogic position about concluding

It is an empirical necessity to finalise this thesis with a conclusion, but this idea challenges the main principles of the philosophy of Bakhtinian dialogism. These principles contend that there is no first utterance and no last word, but only becoming. Bakhtin used the notion of answerability to describe this process of becoming and to refute the idea of any finalising words from the author. As Bakhtinian researchers (White, 2009; De Vocht, 2015) explain, finalising words in ECE pedagogy challenge a dialogic way of thinking.

Based on the dialogic experience of this thesis, as already noted in my research design (see section 5.3.2), my role and my voice (see section 5.6), I do not reserve the right to reach a final conclusion as a researcher, but leave this open to all readers. My position, therefore, requires me to accept the uncertainty of becoming and openness to the readers' dialogic responses. At the same time, I offer situated conclusions that I am answerable for, by making my data generation method and analysis process transparent to readers. Therefore, the conclusions provided in this thesis are provisional and await debate.

9.2 Responding to the research questions

Through this thesis, I set out to investigate the competing voices surrounding Chinese children's experiences of touch screen devices in a New Zealand early childhood education (ECE) setting. I explored the following research questions:

- i) What are the competing voices of New Zealand teachers and Chinese caregivers surrounding Chinese preschool children's touch screen use in a New Zealand ECE setting?
- ii) What are Chinese preschool children's voices on their experiences of touch screens?
- iii) What competing voices of adults and children can be discerned in children's touch screen use?

To answer these research questions, I used Mikhail Bakhtin's dialogic theory (Bakhtin & Emerson, 1993) as a theoretical framework for my research investigation. This theory gave me the tools to explore the competing voices that formed Chinese preschool children's touch screen use in a New Zealand ECE setting and at their homes. A visual method was used to collect the data because this method allowed me to see multiple forms of children's voices other than their utterances, notably their gestures. I then used the genre as a unit of analysis and heteroglossia as an analytical framework to examine competing voices in social and cultural interactions.

The data pertaining to Question one was detailed in Chapter 5. The competing voices I identified for New Zealand ECE teachers and Chinese caregivers are the Voice of conditional support versus the Voice of opposition or reluctance. Within these two competing voices, some conflicting viewpoints are found between teachers and caregivers, across teachers or caregivers as individuals and as a group.

The data on Questions two and three was presented in Chapter 6. The children's voices that I identified, based on my observation of children using touch screens, were the Outside-in Voice versus the Inside-out Voice. I found these competing voices through children's strategic employment of various genres in different spaces. Six genres were recognized: the adult-led learning genre, the compliance genre, the invisible speaker genre, the child-led learning genre, the resistance genre, and the whisper genre. The Outside-in Voice was generated from the first three genres because children's Voices

were apparently influenced by an outside voice. The Inside-out Voice was generated from the second three genres from occasions when children chose to exercise their agency and to express voices according to their own wishes.

After acknowledging children's Voices, the answer to Question three becomes clear. A new layer of competing voices between adults and children could be discerned, through the way these various genres were employed by children during their touch screen use: the Voice of adult power versus the Voice of child agency. While the former voice shows the influence of adults' voices on children's voices and the child's choices to prioritise the adult's voice, the latter Voice shows the child's agency in expressing their own voices, which are different from adults' expression or expectation.

It was of great interest to me that in my data I saw a clear reflection of Bakhtinian ideas. Firstly, the complexity of viewpoints expressed by teachers and caregivers (see Chapter 5, my answer to Question one), reflect what Bakhtin claimed as the plurality of Voices: Even in one utterance, plural Voices can be heard. Competing voices can be heard not only across teachers or caregivers but also within an individual person. For example, Maggie expressed a strong Voice of opposition or reluctance, but acknowledged that use is understandable if touch screen devices are for children's learning, such as for the modelling of a new language. Thus a small Voice of conditional support was found which suggests competing voices within an individual. Secondly, Children's Voices - the Outside-in Voice and the Inside-out Voice - discovered through genres (see Chapter 6, my answer to Question two) are reminiscent of Bakhtin's notions of authoritative discourse and internally persuasive discourse. While the former Voice is borrowed from authoritative adults, the latter Voice involves children's diverse and creative expressions. Thirdly, Competing voices - the Voice of adult power and the Voice of child agency - also discerned through genres (see Chapter 6, my answer to Question three) share characteristics with what Bakhtin described as the constant struggles between centripetal forces and centrifugal forces in social interactions. While the former force tends to express a unitary voice, which reflects adult authority and power, the latter force tends to express multiple voices which reflect a heteroglossic disunification. Furthermore, I have seen two types of children's heteroglossic expressions in the face of the authoritative Voice and the domination of adults' culture:

i) children's resistance to adults' rule and power and ii) children's creativity in making their own rules and culture.

Additionally, through the points I have been able to raise through taking a Bakhtinian lens, I can recognise an echo in the more general literature about children's touch screen use and children's voices. The echo includes issues such as whether children's touch screen use is i) for learning or for entertainment (just play for its own sake); ii) a social (collaborative learning) or anti-social (individual learning) experience; iii) of assistance in producing creativity or limits creativity. My findings have corroborated these ideas from the literature in a new context.

What surprised me in the data is that children's creativity during their touch screen use was largely found in their heteroglossic expressions, especially when/where adults, or more precisely adult power, were absent. This finding echoes Tam's (2012) study on children's bricolage under or without the gaze of the teacher. My study lends support to the proposition that children's creativity in making their own rules and culture can only be seen when the supervision of adults is temporarily absent.

With regards to the teachers' concerns raised in the literature, that children's use of touch screens is isolating and causes anti-social behaviour, specifically in Finch and Arrow's (2017) New Zealand study, this outcome did not appear in my data on children's experiences of touch screens. On the contrary, I argue that my findings suggest that iPads are far from being anti-social tools, and that instead they can open up new possibilities for helping children interact with peers and gain collaborative learning experiences.

9.3 Re-visit the models

9.3.1 Lundy's model of children's rights

As noted in Chapter 3, Lundy (2007) assessed the barriers to the meaningful and effective implementation of children's rights within education and proposed a model which includes four key elements.

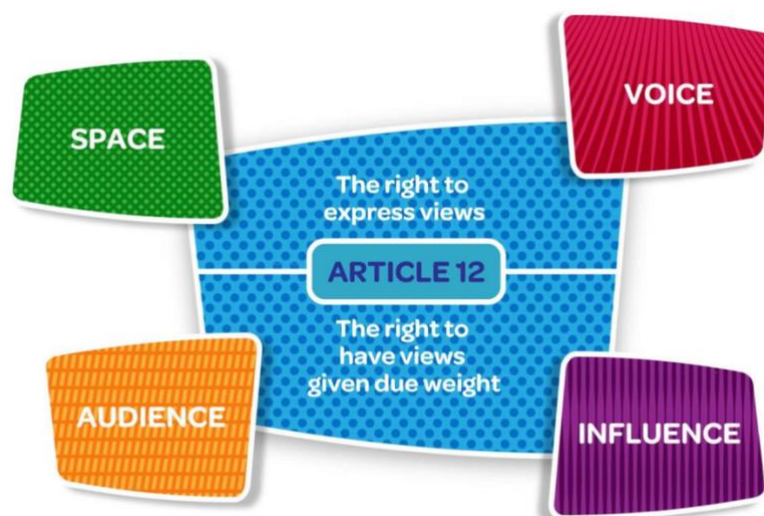


Figure 3.2: Lundy's model of Children's right to have their voices heard¹⁵

These four key elements are i) Space: Children must be given the opportunity to express a view; ii) Voice: Children must be facilitated to express their views; iii) Audience: Children's views must be listened to; and iv) Influence: Children's views must be acted upon, as appropriate.

My findings show that adults mediate children's device access through conditional support or opposition. This mediation strategy of adults, if the child's view is not consulted and included, could be a barrier to the meaningful and effective implementation of children's rights. As the UN General Comment on children's rights in relation to the digital environment emphasizes, the rights of every child must be respected, protected and fulfilled in the digital environment (UNICEF, 2021).

To fulfil children's rights in a digital environment, it is suggested that opportunities must be provided for children to have a space, such as the centre, home and elsewhere, to access the devices. If digital inclusion is not achieved, 'existing inequalities are likely to increase, and new ones may arise' (UNICEF, 2021. p.1). In addition, support should

¹⁵ Image data from https://ec.europa.eu/info/sites/default/files/lundy_model_of_participation.pdf. Used with permission granted from the Creative Commons Attribution 4.0 International (CC BY 4.0) licence.

be in place for children to express their voices regarding their device use. For example, in my study, Jayden and his grandpa reached an agreement regarding the time limit of touch screen use through mutual consultation. In this way, children’s voices regarding their device use were expressed. Furthermore, audiences are needed for children’s voices regarding their use of devices to be listened to and, crucially, there should be an outcome as a consequence of children expressing their views regarding their own experiences of touch screen devices.

9.3.2 Methodological model

In my methodology Chapter, I have provided a methodological model to show the relationship among key Bakhtinian concepts (see Figure 4.1 in Section 4.3.6).

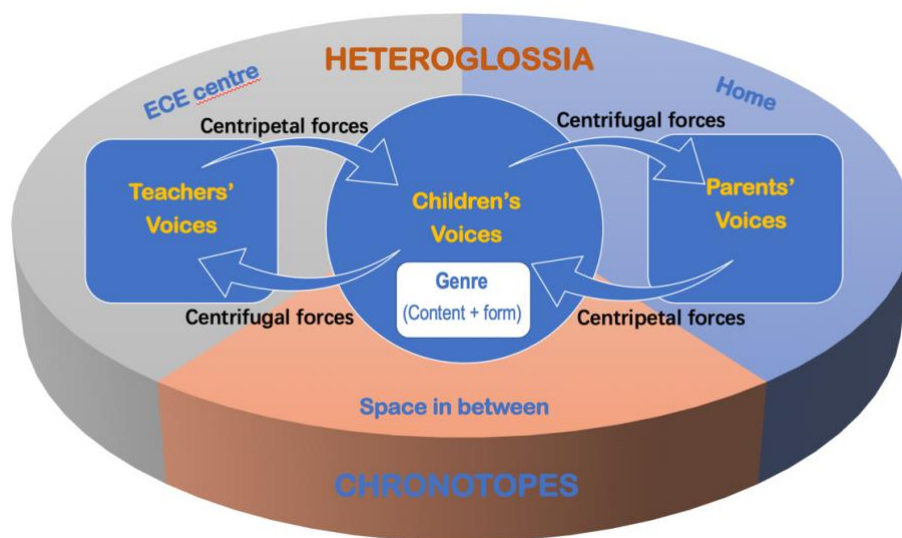


Figure 4.1: The methodological model

In this model, heteroglossia, which happens in the chronotope of the ECE centre, the home and the space in between, is made up of multiple voices from teachers, Chinese caregivers and children. Children’s voices, which posits in the centre alongside voices of teachers and caregivers, are constantly interacted with multiple sometimes competing voices from teachers and caregivers. As a result, tensions between the

centripetal forces (towards a unified voice) and the centrifugal forces (towards multiple voices) arise in this social interaction regarding children’s touch screen use.

The plurality of voices are manifested when using genres, a combination of content and form, to examine children’s voices. Not only its verbal form but also its non-verbal form such as gestural expression is considered in exploring children’s voices. In this way, I consider young children’s experiences of touchscreen devices as an everyday event, discovered through children’s employment of genres in different chronotopes within a heteroglossic arena.

My finding suggests the interaction model within this heteroglossic arena (see Figure 7.18 in Section 7.4).

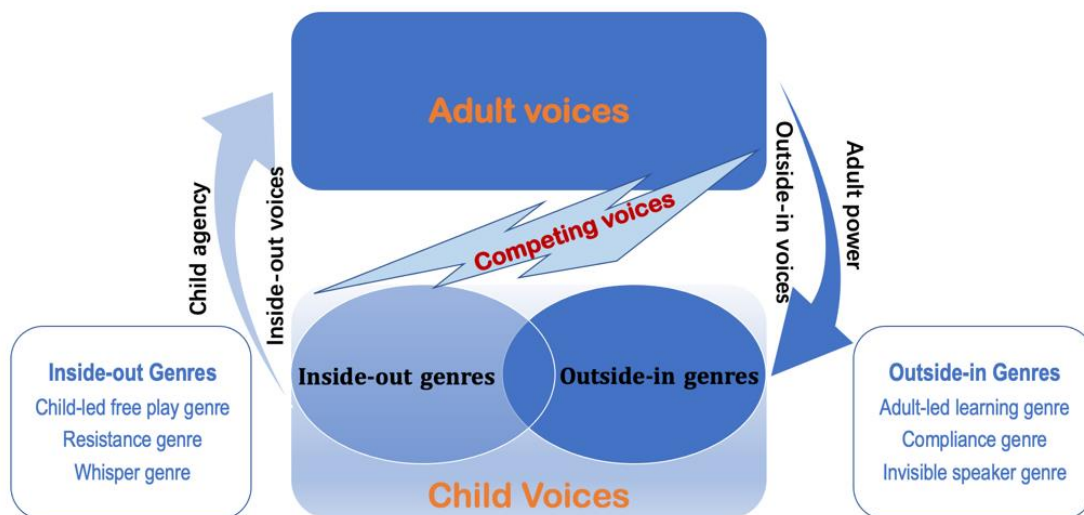


Figure 7.18: A model of genres, children’s Voices and competing Voices

In the above model (see section 7.4), Children’s two ways of assimilation of Voices in social interaction can be found, that is, the authoritative discourse and the internally persuasive discourse. My data shows that children constantly borrow the outside voices and then transform those voices into their inner voices, which is a process of assimilating the authoritative discourse and then moving from authoritative discourse to internally persuasive discourse.

In inside-out genres, child agency is exercised through children’s heteroglossic expression in social forces. One way of this heteroglossic expression is children’s

resistance to adults' rules and power, which can be seen in the resistance genre. The other way is children's creativity in making their own rules and culture, which can be seen in the child-led free play genre and whisper genre.

It raises the issue of how children and/or adults can negotiate the implications of their various voices on touchscreen usage. When the adult places restrictions on the child's touch screen use, the child has two ways of response in this social interaction: i) accepting the adult power and assimilating this outside authoritative voice (outside-in Voice), or ii) exercising the child agency and expressing their own voice (inside-out Voice).

9.4 Implications

My findings have implications for children, ECE teachers, caregivers and policymakers.

9.4.1 Implications for children

My finding shows the importance for children to acknowledge their rights in a digital age, to know that meaningful access to digital technologies can support children to realize the full range of their civil, political, cultural, economic and social rights. Therefore, it raises the importance for children to express their voices when encountering adults' power. My finding of children's Voice of adult power and their Voice of child agency can provide some insights on how children could engage with adult-imposed restrictions on their device use. For example, when Jayden and his grandpa reach the agreement of 'using the touch screen device no more than 20 minutes each time' through equal consultation (see section 6.2.2.1), Jayden earns his grandpa's trust by keeping his promise and keeping this contract going. This similar situation also happen when Evan turns the iPad off after some gentle negotiations with his mum (see Excerpt 7.4, Evan: 'I will only watch it for one minute'). By doing so, the child proves himself to be an active agent and a democratic citizen with a role in influencing how issues (eg. touch screen use, education, leisure etc) of their lives manifest themselves in their lived experiences. In doing so, children's rights, their voices and agency could be recognised.

My finding also provides insights on children's agency in peer-group play when the supervision of adults is temporarily absent. One example is that when Melanie uses whisper to communicate with Jayden, she creates a private space where she can negotiate some new rules with Jayden (see section 7.3.3). Another example is that Evan and Joe solve conflicts through friendly negotiation and using a sense of humour when they draw on the iPad (see section 7.3.1). A third example is that Evan builds a dynamic relationship with Jayden and Damian when they play the fishing game (see section 7.3.1). My data illustrates children as capable digital learners and effective social people, who convey their voices through their strategic way of using touch screen devices. I would encourage children to spend more time playing with peers so that they have more chances to express their voices in the decision-making on issues that affect them.

9.4.2 Implications for ECE teachers

My findings show the complexity of competing Voices within individuals and across teachers and children in one ECE setting. Sharing this finding with teachers could help teachers to be more aware of the complexities involved in children's touch screen use beyond the simple binaries about education or entertainment and social or anti-social effects. Enhanced insight into the complexities of children's touch screen use may help teachers to understand the potential of young children's touch screen use in a more inclusive and critical way. This study's findings on the complexity of children's voices could also help teachers to understand the plurality of voices in children's discourses, and assist them to be more attuned to children's non-verbal and invisible voices. Enhanced listening could in turn help teachers to understand children's prioritising of multiple voices better, and recognise the origin of children's voices and the underpinning values. In addition, in order to be answerable to their relationships with children, it is suggested that additional knowledge about children's voices would help teachers avoid imposing their meanings on children's unspoken voices.

My findings also show that there are many more genres employed by children than a teacher may have seen, and also that there can be a strategic shift between multiple genres by children in different times and/or spaces. This means that ECE teachers need

to understand the multiplicity of genres employed by children and they need to be able to notice children's strategic employment of these various genres. They also need to be able to use these genres to think about what is actually going on from the children's perspectives. This will be very challenging, so again teachers are likely to benefit from focused professional learning and development in relation to possible genres.

Moreover, my findings show that teachers don't always have enough time to use touch screens with children in the way they want. If teachers are going to teach effectively with these devices, perhaps they need more time to be alongside children and observe their touch screen use, so that they are better placed to scaffold children's learning using touch screens. Creating more time for teachers inevitably has staffing implications and improving the teacher: child ratio may be necessary. Teachers could also benefit from ongoing professional support in the best ways to scaffold children's touch screen use, perhaps through the employment of an onsite professional mentor. From another perspective, teachers may also need to recognise the value of allowing children some independent time using touch screens. A high level of creativity and collaboration were found in my data when children played with touch screens without a teacher's presence. This means ECE teachers might sometimes want to stand back and give children the space that they need to be creative and learn collaboratively and or independently by withholding their authoritative voice. Knowing when and how to do this may also need to be part of the professional development process. With these ideas in mind, I advocate that early childhood education and teachers are provided with professional development opportunities, and spend time thinking about the role touch screen use might play in child-directed learning.

9.4.3 Implications for caregivers

My finding of the Voice of conditional support can provide some insights on caregiver scaffolding of their children's touch screen use. I have described the rich conversations that Jayden had with his grandpa during his use of touch screens. These illustrate one way an adult can interact collaboratively with a child to assist the child's learning with and from touch screens.

Part of being digitally fluent is knowing when to put the digital device away. The need to limit touch screen use is something both caregivers in my study were trying to teach their children through different approaches although both used a timer. The way Jayden's grandpa scaffolded Jayden to put the device away in a prescribed time was of particular interest to me (see section 5.2.2). They had established a set of rules for Jayden's use and his grandpa then trusted Jayden to abide by them. In this way, Jayden had an experience of being trusted within a framework which meant Jayden could be responsible; Jayden's grandpa gave him agency within a known and shared boundary. This is a productive example of scaffolding as part of conditional support. I think it provides an useful insight into how other caregivers might scaffold their children to limit the time period of touch screen use. Also significant is the fact that, Jayden's grandpa had developed the rules with Jayden rather than simply 'giving' them to him. He also let Jayden know the consequences of not following the rules. With this approach, children can learn about the wisdom of setting limits, and a healthy way of using the device.

Overall, I recommend caregivers consider what kind of conditions should be provided for their child's touch screen use. Should it be just a timer, or should it be giving the child access and then closely monitoring their use, or should it be establishing rules, explaining the consequences and trusting the child? My suggestion is that the caregivers' decisions about the conditions could be different depending on the child, their personality and their age.

My findings further suggest that if caregivers want to play a more effective scaffolding role in children's touch screen use, they need to try to spend more time and engage more in children's touch screen use rather than using touch screens as a babysitter. I would encourage caregivers to relax some of their authority, to listen to children's voices and to include their voices in the decision-making on issues that affect them and their children.

My finding of the Voice of opposition or reluctance also raises some questions as to whether caregivers should be gatekeepers who restrain or ban children's touch screen use. My data has illustrated children's creative learning experiences during their touch

screen use (see Chapter 6), which shows an ‘all-banned’ approach is not desirable. A scaffolding role instead of a gatekeeping role would seem to be most likely to be productive.

9.4.4 Implications for policymakers

My findings show that teachers have contradictory viewpoints on children’s touch screen use and that they can be confused and conflicted about their roles in children’s touch screen use. If teachers are not aware of the possibilities that can eventuate when young children use digital devices, including their learning potential, then it would seem reasonable to suggest that teachers are uncertain, and it is not clear how they will be equipped to use them to teach children. This recognition suggests that policymakers would be advised to provide teachers with professional learning and development with regard to how to scaffold children’s touch screen use and digital play into play-based learning.

9.5 Limitations

9.5.1 The generalisability of my data

One of the limitations of my thesis has to do with the generalisability of the data. The participants in this study include: i) two Chinese child participants, another three Chinese children and three New Zealand children; ii) five teachers from the ECE centre where the data was collected; and iii) two Chinese caregivers. Even though the participants presented different viewpoints, which demonstrated competing voices between and within New Zealand ECE teachers and Chinese families, these participants cannot be thought to represent the views of either the entire New Zealand ECE setting or the Chinese community. Therefore, my thesis only represents some and not all the voices in relation to my topic – the use of touch screens in ECE. While my findings do not depict a global picture of what is happening I am hopeful that my research will raise some questions that others might consider and or address in their own contexts. Hopefully, my research will lead them to ask questions such as: What about other

immigrant children's learning experiences in different cultural contexts? What about other teachers' and caregivers' voices? I hope one outcome of my focus on children's voices may prompt other educators and families to seek to understand better the competing voices that characterise children's learning. Additionally, it is my hope that this research will attract more teachers and caregivers into this conversation, who will add their voices to the debates, and continue to enhance understanding and practices in relation to young children's touch screen use.

9.5.2 Interpretation of children's voices

Another limitation of this study is in the interpretation of children's voices. In order to understand children's verbal and non-verbal voices better, a visual method was employed in this study. It was argued that this approach enabled attention to be paid to voices; but it can also be seen as a possible limitation of this study because children were not given more opportunities to revisit the video-recorded touch screen experiences, and to be consulted directly about their intentions of employing a specific genre.

Interpreting children's voices requires the researcher to have a sound understanding of the child participants and the context of their dialogue. However, given the complexity of language itself, the danger of misinterpretation always exists. Therefore, it is vital that a researcher does not sometimes fall into the trap of speaking on behalf of children or ascribing meaning with certainty. As a consequence, dialogic researchers can do little more than add their insights to the voices in the belief that, at this point in time, their insights must be their primary source of seeing the child's behaviour from a new perspective.

Furthermore, there are also limitations with respect to the approaches of 'seeing' the visual nature of the voices involved in research, for example, some hidden voices are beyond 'seeing', a matter for future researchers to contemplate.

9.5.3 Positionality

This study explores competing voices in relation to Chinese preschool children's play and learning using touch screens in a New Zealand early childhood centre. What I was looking for in this study were the competing voices in a particularly nuanced context of ECE. In this respect, there are limitations associated with my personal bias. This bias underpins my choice of focus for this study and my decision to concentrate on investigating competing voices in order to make a comparison. All of these research choices were influenced by my voice as a researcher and an individual living in a certain socio-cultural context who had asked the important questions from a Bakhtinian point-of-view.

This study does not tell people about what 'every child's' play and learning with touch screen devices and other digital technologies in a New Zealand early childhood centre is about. This would never be possible from a Bakhtinian stance, and it is not the topic of my study nor the challenge that I set for myself. A research study of that scale would be a much bigger project than a PhD thesis allows. My focus was instead very specific: I was investigating the competing voices and their underpinning beliefs of a limited set of New Zealand teachers, Chinese families and children in relation to children's use of touch screen devices, all within the context of a particular early childhood centre.

9.5.4 Methodological limitation

Bakhtinian dialogism offered me a way of understanding competing voices in this study. However, this analytical tool only allows me to look at this problem from a particular perspective. There could be more complexities that I have not seen by virtue of having focused on just one context and an approach which was necessitated by the nature and scope of my research project. The reality is that the complexity of competing voices that was uncovered in this study merely touches the tip of the iceberg and can never claim to capture all. I can never claim to know the full meanings of language use, nor can I ever know the depth and breadth of perspectives. In other contexts, there may be voices that were not identified in my study, meaning more competing voices would need to be considered in order to capture the nature of children's experiences more comprehensively. I understand that there are also other methodological pathways which

would have led me to different spaces, that are yet to be explored, given the paucity of research that has thus far been conducted in this area. One area for such exploration could be immigrant children's cultural identity across spaces. This is important based on what I found about the influence of New Zealand ECE teachers and Chinese immigrant caregivers' voices on children, and children's decisions to prioritise a certain voice. These findings may have links with children's cultural identity across spaces and could be an interesting option for investigation.

9.6 Further research

Corresponding with my recognition of these limitations, is my understanding that this study is not the last word on the topic and that there is much more that is waiting to be explored.

The focus on genre opens up one area for further research. A person's various genres can reveal several layers and facets of the individual personality (Bakhtin, 1986b). I only explored the genres employed by a small number of children and it seems reasonable to assume other children individually and together might employ different genres. Even for the children in my study it is likely the genres I noted represent only some of the variety of genres that children apply in their interaction with others (caregivers, teachers and peers) and touch screens. Therefore, there are still many more interpretations and many more genres that could be explored.

It also needs to be noted that my study focuses on Chinese children's experiences of touch screen devices in a New Zealand ECE centre. What I have found might be relevant for other cultures too. Exploring the learning experiences of a wider group of children, including children who are immigrants and children of different ages in different cultural contexts, was beyond the scope of this study; this is suggested as a further area for research.

There is no final Voice: a dialogic approach to research accepts open-endedness (Bell & Gardiner, 1998; De Vocht, 2015; White, 2009). Even though I have finished my thesis, the children, the teachers, the caregivers and I will continue to have the need to express our voices and, as such, change as a result of the change in reality that requires

ongoing dialogues. In this process we need to be aware of a moral answerability and acknowledge that “which can be done by me, can never be done by anyone else” (Bakhtin & Emerson, 1993, p. 40), and that each of us has to take responsibility as a unique individual in a once-occurring event.

I use Bakhtin’s words to end this thesis,

“As long as a person is alive, he lives by the fact that he is not yet finalized and that he has not yet uttered his last word” (Bakhtin, 1984, p. 59).

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Appendices

Appendix A: Information Letter and Consent Form for the Kindergarten

Dear Centre Manager,

I am Dandan Cao, a doctoral student at the University of Waikato. I am very interested in the competing voices on four-year-old children's everyday experience of touchscreen devices (such as tablets, iPads, and smartphones) at centre, home and the space in between in a diverse cultural context. I would like to explore various perspectives of children themselves, New Zealand teachers and Chinese parents.

I am writing to request a formal approval for me to undertake data collection for my PhD research study at your centre and get your permission for me to send information to teachers and parents to seek approval.

I would like to undertake a 30 days video study (a total of 30 days' visits in 3 months) to explore the question: What are the various perspectives of children, New Zealand teachers, and Chinese parents concerning four-year-old children's use of touchscreen devices in a diverse cultural context?

I am also approaching you to invite you as the centre manager to mitigate any potential conflicts of interest that might arise due to my research in the centre, and response in collaboration with me.

In giving your consent, you would agree to the activities ([See Attachment A](#)) which would take place in your centre. I set out to do this study in three central ways: i) Video recording and reflexive sessions; ii) Interviews; iii) Observations and journaling. Please note that participation in the study is voluntary and participants can withdraw from the study or part of the study and parents have the right to withdraw their child from the study without further consequence at any time during the data collection process. These points will be expressed in the participants' information letters and consent forms.

If you agree, please sign the attached consent form ([See Attachment B](#)) by the 20 July 2018. If you need any further information, please feel free to contact me:

dc118@students.waikato.ac.nz; or my supervisors: Dr Dianne Forbes: diforbes@waikato.ac.nz; Prof. Jayne White: whiteej@waikato.ac.nz. Thank you very much!

Yours truly,

Dandan

Attachment A: Fieldwork Design

Duration: 30 days' visits, spread over a period of 3 months from July to October 2018.

Participants: i) four years old children from different cultural and language backgrounds, with specific focus on ii) four years old children of Chinese descent, also include iii) kaiako and iv) parents.

Research methods: i) Video Recording and Reflexive Sessions; ii) Interviews; iii) Observations and Journaling.

Study design:

1. I will conduct two sets of interviews with Chinese caregivers who give me consent with regard to their views on children's touch screen use. I will ask caregivers to take video about their children's touch screen use at home.
2. I will also conduct two sets of interviews with Kaiako who give me consent in your centre with regard to their views on children's touch screen use.
3. I will observe and video-record children's experiences of touchscreen devices. I will also conduct reflexive feedback sessions with children based on the video took by me in the centre and took by caregivers at homes.

Attachment B: Consent Form for the Kindergarten

This form invites you, as the manager of the kindergarten, to give consent to participate in this Ph.D. research study which explores multiply voices towards four-year-old children's everyday experience of touchscreen devices at centre, home and elsewhere from multi-perspectives of parents, teachers, as well as children themselves.

Please indicate your consent by ticking the box beside each relevant statement below and signing the accompanying form by 20 July 2018. In signing this sheet, you agree to the following statements:

- I have read the explanatory letter, which I have kept for my information, and have had the opportunity to seek clarification on any issues.
- I give my approval for Dandan Cao's doctoral research to be undertaken at the centre, or I have approached the Board of Trustees and informed them of Dandan's doctoral research, and they have given the approval for this research to be undertaken at the centre.
- I understand that 60 days' ethnographic study with video tools will occur in my centre in 2018.
- I understand that the focus four-year-old children in this ECE setting will feature in the video recording that is taken. I also understand that although the focus of this research is on four-year-old children's experience of touchscreen devices and their interactions, other people in this ECE setting such as other children, teachers and families may be captured in the video recording of the focus children.
- I understand that Dandan will not only video record children's everyday experience of touchscreen devices and interactions by herself, but also ask children to film each other in the centre setting and ask parents to film their child's use of touchscreens at home and elsewhere during the ethnographic period.
- I understand that Dandan will interview children at the end of each week's fieldwork on a weekly basis during the ethnographic period in the centre, then she will also interview teachers and parents twice separately. Interviews will be video recorded.
- I understand that participation in the study is voluntary and participants can withdraw

from the study or part of the study and parents have the right to withdraw their child from the research study without further consequence at any time during the data collection process. These points will be expressed in the participants' information letters and consent forms.

I understand that the transcripts of group interviews will not be reviewed by an individual participant because it will contain others' contributions. If someone asks to review the transcript, s/he should only review it with the group as a whole.

I understand that the research findings, including stills of footage, video footage excerpts, interviews, transcripts, quotations, and narratives will be disseminated in the thesis, at conferences, in other oral and visual presentations, and in downloadable publications and video-based educational forums. I understand that the research findings could also be used for teaching purposes.

I understand that an electronic copy of this Doctoral thesis will become widely available, as the University of Waikato requires that a digital copy of a Doctoral thesis be lodged permanently in the University's digital repository: Research Commons. I understand that a link will be sent to me on completion of this thesis.

I understand that participants can ask that any images about them to be withdrawn at any point of data collection, at which time any footage containing images of themselves or their child will be destroyed.

I understand that teachers and parents can approach me if they feel a child is in distress, discomfort or compromised in any way with the video recording, and the recording will cease for that child on that day.

I understand that, although participants will be given the opportunity to nominate a pseudonym for themselves or their child, anonymity and confidentiality cannot be assured for the participants or the setting due to the visual nature of this study. I understand that this ECE setting will not be named if I wish so.

I/we agree/do not agree [please circle which applies] for this ECE setting to take part in Dandan Cao's Ph.D. research study as described in the information letter.

Name of ECE setting

Name of Centre Manager

Contact details

Signature of Centre Manager

Thank you for completing this form. Please return it to me by 20 July 2018.

Dandan Cao

Appendix B: Information Letter and Consent Form for the Head Teacher

Dear head teacher,

I am Dandan Cao, a doctoral student at the University of Waikato. I am very interested in the competing voices on four-year-old children's everyday experience of touchscreen devices (such as tablets, iPads, and smartphones) at centre, home and the space in between in a diverse cultural context. I would like to explore various perspectives of children themselves, New Zealand teachers and Chinese parents.

I am writing to request formal approval from you, as the head teacher, for me to undertake data collection for my Ph.D. research study at the centre and get your permission for me to send information to parents to seek approval and your permission for participating in three sets of interviews and sharing your thoughts.

I would like to undertake a 30 days video study to explore the question: What are the various perspectives of children, teachers, and parents concerning four-year-old children's use of touchscreen devices in diverse cultural contexts? I am also approaching you to invite you to take part in three sets of interviews, discussing in collaboration with other teachers, the Chinese families and me.

In giving your consent, you would agree to the activities ([See Attachment A](#)) which would take place in your ECE setting. I set out to do this study in four central ways: i) Video recording and reflexive sessions; ii) Interviews; iii) Observations; iv) Journaling. Please note that participation in the study is voluntary and participants can withdraw from the study or part of the study and parents have the right to withdraw their child from the research study without further consequence at any time during the data collection process. These points will be expressed in the participants' information letters and consent forms.

If you agree, please sign the attached consent form ([See Attachment C](#)) by 20 July 2018. If you need any further information, please feel free to contact me: dc118@students.waikato.ac.nz; or my supervisors: Dr Dianne Forbes: diforbes@waikato.ac.nz; or Prof. Jayne White: whiteej@waikato.ac.nz. Thank you!

Yours truly, Dandan

Attachment C: Consent Form for the Head Teacher

This form invites you, as the Head Teacher, to give consent to participate in this Ph.D. research study which explores multiply voices towards four-year-old children's everyday experience of touchscreen devices at centre, home and elsewhere from multi-perspectives of parents, teachers, as well as children themselves.

Please indicate your consent by ticking the box beside each relevant statement below and signing the accompanying form by 20 July 2018. In signing this sheet, you agree to the following statements:

- I have read the explanatory letter, which I have kept for my information, and have had the opportunity to seek clarification on any issues.
- I understand that Dandan will undertake 30 days' study with video tools in this centre, she will not only video record children's everyday experience of touchscreen devices and interactions by herself, but also ask children to film each other in the centre setting during the ethnographic period.
- I understand that the focus four-year-old children in this ECE setting will feature in the video recording that is taken. I also understand that although the focus of this research is on four-year-old children's experience of touchscreen devices and their interactions, I may be captured in the video recording of children's experience and interactions.
- I understand that Dandan will interview children at the end of each week's fieldwork on a weekly basis during the ethnographic period in the centre. The interviews will be video recorded.
- I understand that I will be invited to two sets of interviews with other teachers, and a set of cross-cultural dialogue with Chinese families, to gain my perspective on children's touchscreen use, value, efficacy, the role of adult, etc. and to view, re-filter the selected footage and discuss in collaboration with Dandan. The interviews will be video recorded.
- I understand that participation in the study is voluntary and participants can withdraw

from the study or part of the study and parents have the right to withdraw their child from the research study without further consequence at any time during the data collection process. These points will be expressed in the participants' information letters and consent forms.

I understand that I as one of the participants can ask that any images or other information about me to be withdrawn at any point of data collection, at which time any footage containing my image will be destroyed.

I understand that the transcripts of group interviews will not be reviewed by an individual participant because it will contain others' contributions. If I want to review the transcript, I should only review it with the group as a whole.

I understand that the research findings, including stills of footage, video footage excerpts, interviews, transcripts, quotations, and narratives will be disseminated in the thesis, at conferences, in other oral and visual presentations, and in downloadable publications and educational forums. I understand that the research findings could also be used for teaching purposes.

I understand that an electronic copy of this Doctoral thesis will become widely available, as the University of Waikato requires that a digital copy of a Doctoral thesis be lodged permanently in the University's digital repository: Research Commons. I understand that a link will be sent to me on completion of this thesis.

I understand that I can approach the centre coordinator or Dandan if I feel distressed, discomfort or compromised, or if I feel a child is in distress, discomfort or compromised in any way with the video recording, and the recording will cease for you or for that child on that day.

I understand that, although I can nominate a pseudonym for me, anonymity and confidentiality cannot be assured for the participants or the setting due to the visual nature of this study.

I agree/do not agree [please circle which applies] to take part in Dandan Cao's Ph.D. research study as described in the information letter.

Name of Teacher

Please assign me a pseudonym: YES No

Contact details

Signature of Teacher

Date

Thank you for completing this form. Please return it to me by 20 July 2018

Dandan Cao

Appendix C: Information Letter and Consent Form for Other Teachers

Dear teacher,

I am Dandan Cao, a doctoral student at the University of Waikato. I am very interested in competing voices on four-year-old children's everyday experience of touchscreen devices (such as tablets, iPads, and smartphones) at centre, home and the space in between in a diverse cultural context. I would like to explore various perspectives from New Zealand teachers, Chinese parents and children.

I am writing to request formal approval from you, as the teacher, for me to get your permission for participating in this research. I would like to invite you to take part in an interview, to share your views on four-year-old children's use of touchscreen devices in diverse cultural contexts.

In giving your consent, you would agree to participate in an interview which would take place in your ECE setting and agree that your opinions will be adopted in my PhD research.

Please note that participation in the study is voluntary and participants can withdraw from the study or part of the study without further consequence at any time during the data collection process. These points will be expressed in the participants information letters and consent forms.

If you agree, please sign the attached consent form ([See Attachment D](#)). If you need any further information, please feel free to contact me: dc118@students.waikato.ac.nz; or my supervisors: Senior Lecturer Dianne Forbes: diforbes@waikato.ac.nz; Prof. Jayne White: whitej@waikato.ac.nz.

Thank you very much!

Yours truly,

Dandan

Attachment D: Consent Form for the Head Teacher

This form invites you, as the teacher, to give consent to participate in Dandan Cao's Ph.D. research study which explores multiply voices towards four-year-old children's everyday experience of touchscreen devices at centre, home and elsewhere from multi-perspectives of parents, teachers, as well as children themselves.

Please indicate your consent by ticking the box beside each relevant statement below and signing the accompanying form. In signing this sheet, you agree to the following statements:

- I have read the explanatory letter, which I have kept for my information, and have had the opportunity to seek clarification on any issues.
- I understand that Dandan will undertake an ethnographic study with video tools in this centre, she will video record children's experiences of touchscreen devices and interactions with teachers and peers in the centre setting during her data collection period.
- I understand that the focus four-year-old children in this ECE setting will feature in the video recording that is taken. I also understand that although the focus of this research is on four-year-old children's experience of touchscreen devices and their interactions, I may be captured in the video recording of children's experience and interactions.
- I understand that Dandan will talk with children during her data collection period in the centre. Their talks will be video/audio recorded.
- I understand that I will be invited to take part in an interview to gain my perspective on children's touchscreen use, value, efficacy, the role of adult, etc. The interview will be video/audio recorded.
- I understand that participation in the study is voluntary and participants can withdraw from the study or part of the study without further consequence at any time during the data collection process. These points will be expressed in the participants' information letters and consent forms.

- I understand that I, as one of the participants, can ask that any images or other information about me to be withdrawn at any point of data collection, at which time any footage containing my image will be destroyed.
- I understand that the transcripts of group interviews will not be reviewed by an individual participant because it will contain others' contributions. If I want to review the transcript, I should only review it with the group as a whole.
- I understand that the research findings, including stills of footage, video footage excerpts, interviews, transcripts, quotations, and narratives will be disseminated in the thesis, at conferences, in other oral and visual presentations, and in downloadable publications and educational forums. I understand that the research findings could also be used for teaching purposes.
- I understand that an electronic copy of this Doctoral thesis will become widely available, as the University of Waikato requires that a digital copy of a Doctoral thesis be lodged permanently in the University's digital repository: Research Commons. I understand that a link will be sent to me on completion of this thesis.
- I understand that I can approach the centre coordinator or Dandan if I feel distressed, discomfort or compromised, or if I feel a child is in distress, discomfort or compromised in any way with the video recording, and the recording will cease for me or for that child on that day.
- I understand that, although I can nominate a pseudonym for me, anonymity and confidentiality cannot be assured for the participants or the setting due to the visual nature of this study.
- I agree/do not agree [please circle which applies] to take part in Dandan Cao's Ph.D. research study as described in the information letter.

Name of Teacher

Please assign me a pseudonym: YES NO

Contact details

Signature of Teacher

Date:

Thank you for participating in this research and completing this form.

Dandan Cao

Appendix D: Information Letter and Consent Form for Chinese families

Dear Family,

I am Dandan Cao, a doctoral student at the University of Waikato. I am very interested in the competing voices on four-year-old children's everyday experience of touchscreen devices (such as tablets, iPads, and smartphones) at centre, home and the space in between in a diverse cultural context. I would like to explore various perspectives of children themselves, New Zealand teachers and Chinese parents.

I am writing to request formal approval from you, as the parent, to support the data collection of my PhD study in your child's centre and get your permission for me to take your child as the key participant of my study.

I would like to undertake a 30 days video ethnography study to explore the question: What are the various perspectives of children, teachers, and parents concerning four-year-old children's use of touchscreen devices in diverse cultural contexts? I am also approaching you to invite you to video record your child's use of touchscreen devices at home and elsewhere and take part in three sets of interviews with teachers and me.

I have chatted with your child and s/he is happy to work with me. The centre manager and the head teacher have agreed for me to approach you to seek your consent. In giving your consent, you would agree to the activities ([See Attachment A](#)) which you and your child would be involved in indirectly or/and directly. Please note that participation in the study is voluntary and participants can withdraw from the study or part of the study. You have the right to withdraw your child from the research study without further consequence at any time during the data collection process. These points will be expressed in the participants' information letters and consent forms.

If you agree, please sign the attached consent form ([See Attachment E](#)) by the 20 July 2018. If you need any further information, please feel free to contact me: dc118@students.waikato.ac.nz; or my supervisors: Dr Dianne Forbes: diforbes@waikato.ac.nz, or Prof. Jayne White: whiteej@waikato.ac.nz. Thank you!

Yours truly, Dandan

Chinese translation of the Information Letter for Chinese families

致中国家长的信息表和同意书

亲爱的家长:

我是怀卡托大学的博士研究生曹丹丹。我对不同文化背景下的四岁孩子在幼儿园、家里和其他地方使用触屏设备（如平板电脑，iPad 和智能手机）的不同声音（此处的“声音”是指一种观点、视角）很感兴趣。我想探讨儿童、新西兰老师和中国家长的不同观点。

我给您写信是为了获得您作为家长的书面同意来支持我的博士研究的数据收集。我将在您的孩子所在的幼儿园进行研究性学习，希望您同意您的孩子作为本研究的关键参与者。

我将使用视频研究方法，将访问幼儿园 30 天，以探究以下问题：在不同文化背景下，家长、教师以及儿童自身对四岁孩子使用触屏设备有何不同观点？

我和您的孩子聊过，您孩子很乐意和我一起工作，幼儿园园长和老师也同意，特向您征询意见。在征得您的同意后，您将同意您和您的孩子间接或直接参与的活动（见附件 A）。请注意参与研究是自愿的，参与者可以退出该项研究或部分研究。您有权在数据收集过程中的任何时间将您的孩子从研究性学习中撤回，而无需承担任何后果。这些要点将在参与者的信函和同意书中表达。

如果您同意，请在 2018 年 7 月 20 日前签署所附同意书（见附件 D）。

如果您有任何问题或需要更多信息，请随时与我联系：dc118@students.waikato.ac.nz；或者联系我的导师 Jayne White 教授：whiteej@waikato.ac.nz，或 Dianne Forbes 博士：diforbes@waikato.ac.nz。

非常感谢！

曹丹丹

2018 年 7 月 10 日

Chinese translation of the Attachment A (Fieldwork Design) for Chinese families

附件 A: 田野调查工作设计

持续时间: 60 天访问, 分布于 2018 年 7 月至 10 月, 为期 4 个月。

参与者: i) 来自不同文化和语言背景的四岁儿童, 特别关注 ii) 四岁的华裔儿童, 还包括 iii) 教师和 iv) 父母或主要看护者。

研究方法: i) 视频研究和反思会谈; ii) 访谈; iii) 观察和日志。

研究设计:

1. 我将对中国家长进行两组访谈, 关于他们对儿童使用触屏设备的看法。我将请家长拍摄有关孩子在家中使用触屏设备的视频。
2. 我还将对老师进行两组访谈, 关于他们对儿童使用触屏设备的看法。
3. 我将观察并视频记录儿童使用触屏设备的体验。我还将根据我在幼儿园拍摄的视频以及家长在家中拍摄的视频, 与孩子们进行反思性谈话。

Attachment E: Consent Form for the Chinese Family

This form invites you to give consent to participate in this Ph.D. research study which explores multiply voices towards four-year-old children's everyday experiences of touchscreen devices at centre, home and elsewhere from multi-perspectives of parents, teachers, as well as children themselves.

Please indicate your consent by ticking the box beside each relevant statement below and signing the accompanying form by 20 July 2018. In signing this sheet, you agree to the following statements:

- I have read the explanatory letter, which I have kept for my information, and have had the opportunity to seek clarification on any issues.
- I understand that Dandan will undertake 60 days' ethnographic study with video tools in my child's centre in 2018, she will video record my child's everyday experiences of touchscreen devices and interactions in the centre. Also, she will ask my child and other children to be the photographers and film each other in the centre setting, also ask me as the parent to film my child's use of touchscreens at home and elsewhere.
- I understand that Dandan will invite my child to participate group interviews and invite me as the family representative to participate two sets of interviews and a set of cross-cultural dialogue with NZ teachers. The interviews will be video recorded.
- I understand that although the focus of Dandan's doctoral research is on my child's experience of touchscreen devices and interactions, I, as the parent, and my other children, as siblings, would also be captured in the video recording of my child's experience and interaction.
- I understand that I can ask that any images or other information about my child and other family members to be withdrawn at any point of data collection - at which time any footage containing images of my child and other family members will be destroyed.
- I understand that I have the right to withdraw my child from the research study without further consequence at any time during the data collection process. These points will be expressed in the participants' information letters and consent forms.

- I understand that I can approach the centre coordinator or Dandan if I feel my child is in distress, discomfort or compromised in any way with the video recording, and the recording will cease for my child on that day.
- I understand that the transcripts of group interviews will not be reviewed by an individual participant because it will contain others' contributions. If I want to review the transcript, I should only review it with the group as a whole.
- I understand that the research findings, including stills of footage, video footage excerpts, interviews, transcripts, quotations, and narratives will be disseminated in the thesis, at conferences, in other oral and visual presentations, and in downloadable publications and educational forums. I understand that the research findings could also be used for teaching purposes.
- I understand that an electronic copy of this Doctoral thesis will become widely available, as the University of Waikato requires that a digital copy of a Doctoral thesis be lodged permanently in the University's digital repository: Research Commons. I understand that a link will be sent to me on completion of this Doctoral thesis.
- I understand that although I can nominate a pseudonym for my child and myself, anonymity and confidentiality cannot be assured for the participants or the setting due to the visual nature of this study.
- I agree/do not agree [please circle which applies] to take part in Dandan Cao's Ph.D. research study as described in the information letter.

Name of Family Representative: (You can assign me a pseudonym)

Name of Child(ren): (You can assign me a pseudonym)

Contact details:

Signature of Family Representative:

Date:

Thank you for completing this form. Please return it to me by 20 July 2018

Dandan Cao

Chinese translation of the Consent Form for Chinese families

附件 D: 致中国家长的同意书

此表格邀请您同意参加曹丹丹的博士学位研究。该研究从家长，教师以及儿童自身的多角度探索四岁儿童在幼儿园、家庭和其他地方使用触屏设备的日常生活体验。

请在下面的每个相关声明旁边的方框内打勾，并在 2018 年 7 月 20 日前签署随附的表格，以表明您的同意。签署此表表明您同意以下声明：

我已阅读了让我了解信息的解释信函，且我可以就任何问题寻求澄清。

我了解到，丹丹将于 2018 年在我孩子所在的幼儿园进行 60 天访问的视频民族志研究，她将视频记录我孩子在幼儿园使用触屏设备的日常体验和互动。此外，她会邀请我的孩子和其他孩子成为摄影师，并在幼儿园环境里拍摄彼此，并邀请我作为家长在家里和其他地方拍摄我孩子使用触屏设备的视频。

我了解到，丹丹将会邀请我的孩子一起聊天，邀请我作为家庭代表参加两组访谈，并与新西兰教师进行跨文化对话。采访将会被视频或音频记录。

我了解到，尽管丹丹的博士研究重点是儿童对触屏设备和互动的体验，但我作为家长，以及我家其他孩子，作为兄弟姐妹，也将可能会被记录在儿童体验和互动的视频录像中。

我明白，我可以在收集数据的任何时间要求提取有关我的孩子和其他家庭成员的任何图像或其他信息，包含任何含有我家庭成员图像的镜头。

我明白，我有权在数据收集过程中的任何时间将我的孩子从研究中撤回，而无需承担任何后果。这些要点将在参与者的信函和同意书中表达。

我明白，如果我觉得我的孩子处于困境、不适或者对录像有任何不情愿，我只要联系幼儿园园长、老师或丹丹，当天就会停止对我的孩子的视频研究。

我了解,集体访谈的脚本不会由个别参与者审阅,因为它会包含其他人的贡献。
如果我想查看访谈脚本,我应该和整个团队一起审阅。

我了解,研究发现,包括录像、录像片段、采访和脚本,引文和叙述等,将会在学术论文、会议、其他口头和视频演示以及可下载的出版物和教育论坛中传播。
我明白,研究结果也可以用于教学目的。

我了解到,由于怀卡托大学要求将博士论文的数字副本永久提交给大学的数字资源库: Research Commons,因此该博士论文的电子版将会广泛提供。我明白,在完成这篇博士论文后,丹丹将会把链接发送给我。

我了解到,尽管我可以为我的孩子和我自己用一个假名,但由于本研究的视觉性质,无法为参与者保证匿名性和保密性。

我同意/不同意[请√选适用选项]参加曹丹丹的博士研究,如信息中所述。

家庭代表姓名:

孩子的名字:。

您可以指定一个假名字,如果您不希望使用您的真名的话。

联系方式

家庭代表签名.....

日期.....

感谢您填写此表格。请于2018年7月20日前完成,并将纸质版提交给我。

敬上,

曹丹丹

Appendix E: Information Letter and Consent Form for Other families

Dear Family,

I am Dandan Cao, a doctoral student at the University of Waikato. I am very interested in the competing voices on four-year-old children's everyday experiences of touchscreen devices (such as tablets, iPads, and smartphones) at centre, home and the space in between in a diverse cultural context. I would like to explore various perspectives from New Zealand teachers and parents and especially from children themselves.

I am writing to request formal approval from you, as parents, to support the data collection of my Ph.D. study in your child's centre and get your permission for me to take your child as one of participants of my study.

I would like to undertake a video study to explore the question: What are the various perspectives of children, teachers, and parents concerning four-year-old children's use of touchscreen devices in diverse cultural contexts?

I have chatted with your child and s/he is happy to work with me. The centre manager and teachers have agreed for me to approach you to seek your consent. In giving your consent, you would agree to the activities ([See Attachment A](#)) which you and your child would be involved in indirectly or directly. Please note that participation in the study is voluntary and participants can withdraw from the study or part of the study. You have the right to withdraw your child from the research without further consequence at any time. These points will be expressed in the participants' information letters and consent forms.

If you agree, please sign the attached consent form ([See Attachment F](#)). If you need any further information, please feel free to contact me: dc118@students.waikato.ac.nz; or my supervisors: Prof. Jayne White jayne.white@rmit.edu.au; Dr. Dianne Forbes: diforbes@waikato.ac.nz. Thank you!

Yours truly, Dandan

Attachment F: Consent Form for the Family

This form invites you to give consent to participate in this Ph.D. research study which explores multiply voices towards four-year-old children's everyday experience of touchscreen devices at centre, home and elsewhere from multi-perspectives of parents, teachers, as well as children themselves.

Please indicate your consent by ticking the box beside each relevant statement below and signing the accompanying form. In signing this sheet, you agree to the following statements:

- I have read the explanatory letter, which I have kept for my information, and have had the opportunity to seek clarification on any issues.
- I understand that Dandan will undertake an ethnographic study with video tools in my child's centre, she will video record my child's experience of touchscreen devices and interactions with teachers and his/her peers in the centre.
- I understand that Dandan will invite my child to participate group chats in the centre and the chats will be audio or video recorded.
- I understand that I can ask that any images or other information about my child to be withdrawn at any point of data collection - at which time any footage containing images of my child will be destroyed.
- I understand that I have the right to withdraw my child from the research study without further consequence at any time during the data collection process.
- I understand that I can approach the centre coordinator or Dandan if I feel my child is in distress, discomfort or compromised in any way with the video recording and the recording will cease for my child on that day.
- I understand that the transcripts of group interviews will not be reviewed by an individual participant because it will contain others' contributions. If I want to review the transcript, I should only review it with the group as a whole.
- I understand that the research findings, including stills of footage, video footage

excerpts, interviews, transcripts, quotations, and narratives will be disseminated in the thesis, at conferences, in other oral and visual presentations, and in downloadable publications and educational forums. I understand that the research findings could also be used for teaching purposes.

I understand that an electronic copy of this Doctoral thesis will become widely available as the University of Waikato requires that a digital copy of a thesis be lodged permanently in the University's digital repository: Research Commons. I understand that a link will be sent to me on completion of this Doctoral thesis.

I understand that I can nominate a pseudonym for my child. I also understand that although I can nominate a pseudonym for my child, anonymity and confidentiality cannot be assured for the participants or the setting due to the visual nature of this study.

I agree/do not agree [please circle which applies] to take part in Dandan Cao's Ph.D. research study as described in the information letter.

Name of Family Representative:

Name of Child

Please assign me a Pseudonym (Please tick yes or no): Yes No

Contact details

Signature of family representative.....

Date: 01/10/2018

Thank you for completing this form.

Dandan Cao

Appendix F: Ethics Approval



Division of Education Ethics Application

[ETHICS HOME \(HTTPS://EDLINKED.WAIKATO.AC.NZ/ETHICS\)](https://edlinked.waikato.ac.nz/ethics)
[ETHICS ADMIN HOME \(HTTPS://EDLINKED.WAIKATO.AC.NZ/ETHICS/ADMIN\)](https://edlinked.waikato.ac.nz/ethics/admin)
[APPLICATION LIST \(HTTPS://EDLINKED.WAIKATO.AC.NZ/ETHICS/ADMIN/APPLICATION-LIST\)](https://edlinked.waikato.ac.nz/ethics/admin/application-list)

A dialogic perspective on children's voices on their experience of touchscreen devices: A video ethnographic study focusing on Chinese four-year-old children in the New Zealand early childhood education setting (i)

[Overview](#)

[Details](#)

[Ethical](#)

[Legal](#)

[Research](#)

[Informing](#)

[Agreement](#)

[Admin](#)

Overview

Finalised Code:

FEDU019/18

Application Title:

A dialogic perspective on children's voices on their experience of touchscreen devices: A video ethnographic study focusing on Chinese four-year-old children in the New Zealand early childhood education setting

Applicant Name:

Dandan Cao

Applicant Email:

ddcao66@gmail.com

Applicant Department:

Faculty of Education, University of Waikato

Applicant Phone:

021-08877990

Applicant Qualifications:

PhD Education

Applicant Programme:

PhD

Principal Supervisor:

E. Jayne White

Research Team:

Dianne Forbes

Interest in Topic:

My own interest in the topic derives from my experience as a parent of Chinese ethnicity, realizing my four-year-old son's digital fluency in using touchscreen devices such as iPad and smartphone and my thinking about this usage as my son attends a New Zealand preschool setting. I began to think about what is happening in terms of young children's touchscreen use – particularly for children who move between different cultures -and its contemporary significance from an educator's perspective. While both New Zealand and China report a rapid increase of such usage among young children across wider social contexts than the preschool itself, there appears to be a different emphasis on what is valued, and by whom. A survey (Li, 2014) in Nanjing city, China, showed that a high penetration rate of ownership and usage of iPads among preschool children, 87% of 3-6 years old children own iPads, and the figure concerning 4-year-olds is 82%. This figure shows the positive attitude of Chinese parents and kindergarten teachers towards children's use of touchscreen devices. A majority of Chinese parents use these touchscreen devices for the purpose of their child's learning, which is a commonly used strategy responding to the anxieties brought by the nationally prevalent slogans such as "Do not let your child lose at the starting line". It reflects the deep-rooted shaping of traditional Confucianism to the values of Chinese parents – driving their next generation to accomplish something more than the previous generation. In this sense, Chinese parents show great eagerness to avoid their child losing the potential learning opportunities that emerging technologies might bring.

Conversely, a different picture arises in New Zealand. Daily routines of frequent outdoor experiences for young children are highly valued by the policy-maker in New Zealand (New Zealand Ministry of Education: Te Whāriki Early Childhood Curriculum, 1996), which indicates a less orientation of parents and teachers towards such kinds of touchscreen indoor activities. While there appears to be great emphasis placed on older children's engagement with touchscreens, New Zealand early childhood education curriculum appears to be cautious in this regard. This cautionary approach alongside a wider social and educational national and intercultural push for technologically literate learners raises the importance of understanding what happens to young children's use of touchscreens and meanings given to this experience when, for instance, a child from Chinese culture enters into New Zealand early childhood education context. It is to this phenomenon that my study turns.

Māori Research Team Members

No

Māori Supervisor

No

Topic of specific relevance to Māori:

No

Current Status:

Approved — *Application has been accepted by chair of committee*

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Appendix G: Schedule of the Conversation for Recruiting Chinese Children

I provide the Schedule of the Conversation for Recruiting the Chinese Child in Chinese as I asked the child in their mother language Chinese. The English translation is followed after this Chinese version.

招募中国孩子的谈话提纲

我将会和中国孩子进行一次非正式友好的交谈，询问他/她是否愿意和我一起工作，如果答案是肯定的，那么就会视为获得他/她的口头同意成为我的关键参与者。

问题表：

你喜欢用 iPad 吗？

你喜欢用相机拍摄你的朋友或你喜欢的任何东西吗？

你是否乐意和我一起玩，这意味着你会在幼儿园使用触屏设备和相机？

你喜欢被你的朋友拍摄吗？

你介意让我拍摄吗？

你愿意和我分享你在这个视频或照片里正在做什么，以及你的感受吗？

English Translation:

I will initiate an informally friendly conversation with the Chinese child to ask if they are happy to work with me and should the answer be yes then to gain their verbal consent to be my key participant.

The schedule of questions:

Do you like to use an iPad?

Do you like to use a camera to film your friends or anything you like?

Are you happy to play with me, which means you would use a touchscreen device and a camera in the kindergarten?

Do you like to be filmed by your friends?

Do you mind being filmed by me?

Are you happy to share with me about what were you doing and feeling in this video or photograph?

Appendix H: Schedule of the Conversation for Recruiting Other Children

I will chat with each child in the centre, to ask if they are happy to work with me and should the answer be yes then to gain their verbal consent to be one of my participants.

The schedule of questions:

Do you like to use an iPad?

Do you like to use a camera to film your friends or anything you like?

Are you happy to play with me, which means you would use a touchscreen device and a camera in the kindergarten?

Do you like to be filmed by your friends?

Do you mind being filmed by me?

Are you happy to share with me about what were you doing and feeling in this video or photograph?

Appendix I: Schedule of questions for chatting with Chinese children

I provide the Schedule of questions for the friendly chat with the key Chinese child in Chinese as I asked the child in their mother language Chinese. The English translation is followed after this Chinese version.

与中国关键儿童参与者进行一对一面谈的问题提纲

与中国孩子每周一对一面谈的目的是邀请他们分享他们自己的经历的想法，探索中国孩子对体验触屏设备的声音、意见、观点。

以下问题将提供面试的框架：

1.关于触屏设备的使用

- 1) 你喜欢使用触屏设备吗？如果是，你为什么喜欢这个？
- 2) 你通常在什么时候、什么地方用触屏设备？出于什么原因？
- 3) 你的父母和老师允许您使用吗？在家里和幼儿园用触屏设备是否有所不同？有什么区别？
- 4) 使用触屏设备时，你喜欢哪种类型的应用程序或游戏？请列出前三个。
- 5) 你觉得使用触屏设备时，什么是重要的、或是你感兴趣的？

2.关于自己的视频或照片

（观看视频和照片后）

- 1) 这个视频或照片里发生了什么故事？
- 2) 你在这段视频或照片中正在做什么或在说什么？你为什么这么做或这么说呢？

3) 在这段视频或照片中，其他人（同伴，兄弟姐妹，老师或父母）正在做什么或说些什么？你觉得他们为什么这样做或这么说呢？

4) 你在这段视频或照片中用触屏设备的时候，在想的是什么？有什么感觉？

English Translation:

The purpose of the weekly one-to-one chat with Chinese child is to invite them to share thoughts about their own experience, to explore the voices, opinions, perspectives of the key participants - Chinese children on their experience of touchscreen devices.

The following questions provides a framework for the chat with the child:

1. Concerning touchscreen use

1) Do you like use touchscreen devices? If yes, why do you like this?

2) When and where do you usually use touchscreen devices? For what reasons?

3) Do your parents and teachers allow your usage? Does this differ at home and in the centre? What are the differences?

4) What kinds of apps or games do you prefer when using touchscreen devices? Please list the top 3.

5) What do you think is important or interested to you about touch screen use?

2. Concerning their own videos or photographs

(After viewing the videos and photographs)

1) What stories were happening in this video or photograph?

2) What were you doing or saying in this video or photograph? And why you did or say that?

3) What were others (peers, siblings, teachers or parents) doing or saying in this video or photograph? And why do you think they did or say that?

4) What were you thinking or feeling in this video or photograph when you were using the touch screen devices?

Appendix J: Schedule of questions for the group talk with children

The purpose of the weekly group interviews with four-year-old preschool children is to invite them to share thoughts about their own experience, to explore young children's voices, opinions, perspectives on their experience of touchscreen devices.

The following questions provides a framework for the chat with the child:

1. Concerning touchscreen use

- 1) Do you like use touchscreen devices? If yes, why do you like this?
- 2) When and where do you usually use touchscreen devices? For what reasons?
- 3) Do your parents and teachers allow your usage? Does this differ at home and in the centre? What are the differences?
- 4) What kinds of apps or games do you prefer when using touchscreen devices? Please list the top 3.
- 5) What do you think is important or interested to you about touch screen use?

2. Concerning their own videos or photographs

(After viewing the videos and photographs)

- 1) What stories were happening in this video or photograph?
- 2) What were you doing or saying in this video or photograph? And why you did or say that?
- 3) What were others (peers, siblings, teachers or parents) doing or saying in this video or photograph? And why do you think they did or say that?
- 4) What were you thinking or feeling in this video or photograph when you were using the touch screen devices?

Appendix K: Schedule of questions for the interview with Chinese families

尊敬的家长：您好！

本次访谈的目的是了解您孩子对触屏设备的使用现状以及您作为家长的态度。问题如下：

第一部分：学龄前儿童使用移动设备情况

A1 您家孩子是否使用触屏设备？

A2 孩子经常使用哪种移动设备？如：智能手机，iPad，平板电脑，其他

A3 孩子最早开始使用移动设备的年龄是？

A4 孩子平均每天累计使用多少时间？

A5 每天是在固定时间看？还是无固定时间段，随时想看就看？

A6 孩子使用移动设备主要做什么？

A7 请列出孩子最常用的 3 个 APP 名称（按使用频率由多至少顺序排列）

A8 您允许孩子使用移动设备大多数情况下是基于什么原因？

A9 您给孩子玩移动设备大多数是基于什么情况下？是父母主动给予，还是孩子强烈要求，比如哭着要看？

A10 孩子使用移动设备时，大多数是下列何种情况？是自己玩，父母陪着玩，祖父母陪着玩，还是和其他小朋友一起玩？

A11 您对孩子使用移动设备有制定书面计划或口头计划吗？

A12 孩子是否会独立用手机上网？如：视频聊天，搜索动画片。如果是，大约在什么年龄段学会的？

A13 孩子使用手机过程中在哪些方面的表现令你大吃一惊？请举例。

第二部分：使用移动设备对儿童的影响（家长观点）

B1 您认为孩子使用手机对他们的好处有哪些？

B2 您是否觉察出使用手机对您的孩子造成了一些坏处？如果是，有哪些坏处？

B3您认为从总体上看孩子用手机更有助于还是更有害于其身体发展？为什么？

B4 您认为从总体上看孩子使用手机更有助于还是更有害于其智力发展？为什么？

B5 您认为从总体上看孩子使用手机更有助于还是更有害于养成良好的生活习惯？为什么？

B6 您认为从总体上看孩子使用手机更有助于还是更有害于其人际交往能力发展？为什么？

English Translation:

Dear families,

The purpose of this interview is to understand the current situation of your child's use of touchscreen devices, and your attitude as the role of the main caregiver.

The schedule of questions is as following:

Part 1: The use of touch screen devices by preschoolers

A1 Does your child use a touch screen device?

A2 What kind of devices does your child often use, such as smart phone, iPad, tablets, or others?

A3 What is the age when your child first started using touch screen devices?

A4 How much time does your child use on average every day?

A5 Does your child use it at a fixed time every day? or no fixed time period, so your child can watch it anytime they want?

A6 What does your child use touch screen devices mainly for?

A7 What are the names of the 3 most frequently used apps for your child?

A8 For what reasons do you allow your child to use mobile devices in most cases?

A9 Under what circumstances do you give a touch screen device to your children? Does the parent give it on the initiative, or does the child demand it strongly, such as crying for using it?

A10 When your child uses touch screen devices, which of the following situations are most common? Do they play by themselves, or with your parents, or with your grandparents, or with other children?

A11 Do you have a written plan or verbal plan for your child's use of mobile devices?

A12 Does your child use the device to surf the Internet independently? Such as: video chat, search for cartoons. If so, at what age did they learn to do it?

A13 What aspects of the child's performance in using the mobile phone surprised you? Please give an example.

Part 2: The impact of using mobile devices on children (parents' perspectives)

B1 What do you think are the benefits of using touch screen devices for children?

B2 Are you aware that the use of touch screen devices has caused some harm to your children? If so, what are those disadvantages?

B3 Do you think that, in generally, children's use of touch screen devices is more helpful or harmful to their physical development? why?

B4 Do you think that, in generally, children's use of touch screen devices is more helpful or more harmful to their intellectual development? why?

B5 Do you think it is more helpful or harmful for children to use touch screen devices to develop good habits? why?

B6 Do you think that, in generally, children's use of touch screen devices is more helpful or more harmful to their interpersonal skills development? why?

Appendix L: Schedule of questions for the interview with teachers

Dear teachers,

As we have discussed before, we will participant two sets of interviews. The purpose of the first set of the interview is to gain perspectives from teachers on children's touchscreen use, value, efficacy, role of adult, etc. The purpose of the second set of the interview is to invite the teachers to further share views on the emerging competing voices.

The following questions will provide the framework for the interview with teachers:

- 1) What is your attitude/opinion about young children's encounters with touchscreen devices? How do you think children's use of touchscreen device differs in early childhood centre, at home and the space in between?
- 2) What are the advantages and the disadvantages do you think concerning young children's use of touchscreen device?
- 3) Do you want children in your centre to use touchscreens? If yes, why? What are your intentions? that is to say, what do you have in mind when giving a touchscreen device to your child? What are you hoping for?
- 4) What are your concerns about children's use of touchscreen device?

Your valuable opinions have great importance to me as well as to this doctoral research!
I am very appreciated for your contributions!

Yours truly,

Dandan Cao