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Avis Ridgway
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Peer Play and Relationships in Early Childhood

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Early childhood education in many countries has been built upon a strong tradition of a materially rich and active play-based pedagogy and environment. Yet what has become visible within the profession, is essentially a Western view of childhood preschool education and school education.

It is timely that a series of books be published which present a broader view of early childhood education. This series seeks to provide an international perspective on early childhood education. In particular, the books published in this series will:

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Foreword

Playing with friends! That's why children love preschool. *Peer Play and Relationships in Early Childhood: International Research Narratives* gives a vivid picture of young children playing with friends and siblings at home and at preschool, without adults and with adults as playmates or playful educators. The authors of this book offer a rich collection of research narratives of playing children. They address issues that are relevant for parents, early years' professionals, and academics: the role of play in learning at school, the role of adults in self-initiated play, and the long-term impact of early friendships. Love to play with friends is of all times and all cultures. But, as the editors rightly argue, there are differences. Every generation of parents and professionals should rethink the value and role of "play" in the lives of their children (Singer 2016). Let me explain this by a narrative about my own early childhood and research.

I was born in the 1940s and never attended any form of preschool. As young children, we played in the garden and at the street with neighbor children. In our house, we had a huge ceiling with old furniture, clothes, wooden boxes, and a swing. In my memory, we were always playing, making shelters of branches in the lilac bushes and dressing up as fairies and gnomes. I do not remember that my parents or other adults were involved in this kind of play. We played and talked with our parents in the living room and in the kitchen. This kind of early childhood is not uncommon for the generation that was born before 1970. Sandie Wong and I interviewed leading pioneers in early childhood education in Europe, North and South America, and Oceania who were young in the 1940s and 1950s (Singer and Wong 2018). All of them tell stories like mine. We were the last generation with a free early childhood. Nevertheless, our parents and teachers had their worries about our play. To keep away from canals, steep slopes, and wild dogs and to keep us well-behaved in small living rooms with precious furniture earned by our hardworking fathers. And our preschool teachers worried how to make these "free" and sometimes "wild" children ready for school life.

Today, most young children enter into professional settings as a baby or toddler. Free play outside is often too dangerous because of traffic and strangers. At home, there are generally none or few siblings and age-mates to play with. The preschool

is the place of excellence to play with friends. Always under adult supervision. My parents and teachers did not have to think about the value of play; we, as young children, just did it. But for the parents and teachers of today, rethinking play is an urgent issue. The value of play has to be recognized and played down because parents and teachers prioritize formal learning. New opportunities for playing freely with peers have to be created. The presence of adults in children's play space also gives new opportunities to enrich their play and pleasure in each other's company.

This book introduces theoretical concepts to understand the value of play, affiliative relationships, and playful interactions between age-mates and adults. The research narratives reveal the qualities of peer play such as empathic play; dyadic, triadic, and collective play; sibling play; self-initiated play of toddlers; joint play with peers and adults; peer conflicts and reconciliation; and affiliative processes in dramatic play. The authors of this book share their enchantment and respect for the creativity of young children that opens up in their spontaneous play with peers.

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Chapter 1
International Perspectives on Peer Play and Relationships in Early Childhood Settings

Avis Ridgway, Gloria Quiñones, and Liang Li

1.1 Introduction

> Cultural-historical play research has adopted the idea that the child's life world is the source of play. Special focus is directed to joint experiences with adults called [so-bytie]. This is affective-emotional, meaningful exceptional shared experience, which is often transformed into play. (Hakkarainen Chap. 2)

As Hakkarainen reminds us, cultural-historical play research aims to value the everyday life worlds of young children and their joint experiences with peers. A valuable educational lesson is that of children spending time with peers where their everyday life experiences are transformed into imaginary, embodied and affective, joint, social, collective and collaborative experiences. To further extend knowledge of early childhood peer play, its many international variations and perspectives are presented.

The book as a whole, brings together topics on peer play relationships in young children's learning and development and aims to extend research conceptually and contextually in varied international contexts. The research narratives of peer play, brought to life in this edited volume, illustrate theoretical concepts related to stories of interactions that reveal the many qualities of peer play as exemplified in empathic play; dyadic, triadic, and collective group play; peer play and learning processes; sibling play; and young children's perspectives in dramatic play.

Children's peer relations and friendships influence their learning and development (Cekaite et al. 2014b). Early childhood social contexts with peers in home and community settings involve playful dramaturgical compositions, where varied levels of availability of peers (and/or educators) who may, or may not, be interested in

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sharing players' intentions, are present (Singer 2013). The cultural dimensions and material qualities of participatory roles of adults and older peers in early childhood peer play have already been brought to attention by scholars including Edmiston (2010), Hakkarainen et al. (2013), Kravtsova (2014), and Cekaite et al. (2014a). Their research points toward the need to further understand why and how adults or older peers, engage in young children's play. The research in this book, offers varied international case examples which reveal culturally unique forms of peer play, influenced theoretically and guided by their authors' particular conceptualisations and contextual opportunities.

Unique forms of peer play open up to the reader of this book, for example, theoretical work on cultural mediation (Brėdikytė 2012); positioning (Fleer 2015); emotional attitude (Bozhovich 2009; Quiñones 2014); conceptual reciprocity (Ridgway et al. 2015); agency and relational agency (Edwards 2011; Stetsenko and Ho 2015); and the collective construction of knowledge in play contexts (Li et al. 2016). All these forms create a strongly unified basis for the theoretical and practical elements presented in this book.

Extending new ways of understanding peer play through provision of a range of scholarly chapters drawn from richly varied contexts by retheorising the concept of peer play relationships, we anticipate generation of new knowledge about how young children play, learn and develop within and across communities, families, educational settings, and diverse cultural contexts.

In this chapter, we begin with valuing international peer play perspectives. Peer play relationships have been a focus in bringing together a breadth of international studies from Australia, New Zealand, China, Malaysia, Saudi Arabia, USA, Finland and Lithuania, presented in the chapters that follow.

1.2 Valuing the Research Narratives in Peer Play

Hakkarainen and Bredikyte (2010) who take a cultural-historical 'narrative' approach, argue that the cultural nature of play operates with narrative or storied forms. When children start to create play narratives, their making sense of the situation dominates and replaces realistic visual perception with more sophisticated play. In other words, young children's peer play interrelates with their narratives.

The experienced researcher and well-known scholar of children's play Nicolopoulou (2007), proposed that children's play narratives are stories that should be "viewed as closely intertwined, and often overlapping, forms of socially situated symbolic action" (p. 268). She further suggests that adults should acknowledge, facilitate, and encourage the dynamic development of children's play and storied narratives. Further to this, peer relationships benefit young children's development of cognition and imagination through active interplay with different social and cultural practices. Nicolopoulou (2007) also reminds us to take more systematic and theoretically informed research into the complex interplay between

play and narrative. Peer play culture provides a social arena for the development of narrative thinking where children can express themselves orally and dramatically (Nicolopoulou et al. 2014).

The realisation that peers actively contribute to each other's learning and development has been undervalued. This realisation is both "overdue and very welcome" according to Nelson (2014, p. 250). The research narratives of young children playing with one another are never found in isolation but are situated in a given context. Peer play relations, at the heart of a social situation, are variously conceptualised in this book, as being imaginary, non-verbal, verbal, collective and contextualised.

Through young children's active and often transitory relationships, varieties of peer play are illustrated (Chap. 3) and stories are told from many perspectives, including those of the children. Hakkarainien (Chap. 2) for example, theorises peer play historically, socially and over time. In particular, he uses relationality and temporality in story form to bring a unique example of narrative learning to our attention. His research, with a group of peers originally engaged in long term peer play over six years, later showed a fifteen-year trajectory, indicating that earlier peer play effects could still be seen in some of the peer group's on going decisions and orientations. A new collaborative unit of play for example, had formed. Hakkarainen also expresses amazement at the peer play initiatives and creative explorations that occurred without an adult present.

In another subtly illustrated narrative of peer play, Pursi and Lipponen (Chap. 7) discuss how play is *created and maintained* in a toddler peer group. Very young children had organised themselves in concert with one another, to build shared understanding and co-participation within their group. Pursi and Lipponen effectively use visual narratives as they theorise toddlers' gestures, positions, feelings and movement. They demonstrably support the authors' aim to guide adult's practice in compassionate understanding and awareness of peer play relationships in toddler classrooms.

Recognised and acknowledged in the work of Fleer (Chap. 4), is the dynamic conception of digital peer play. Fleer contends that when the teacher plays a role in the imaginary situation it can be digitally captured and reviewed by a peer group. The importance of teachers' support is shown through the illustrated narrative that keeps the whole play structure together and conceptually deepens the children's peer play.

1.3 Reconceptualising Peer Play

> We need more studies of children's play in a wider range of cultural groups…to capture the diversity of…play routines in the children's everyday life. (Corsaro 2012, p. 503)

Corsaro's seminal sociological work serves as an important theoretical approach to studying peer cultures and children's perspectives. Peer cultures are defined as "a set of routines, artefacts, values, and concerns that children engage with their

playmates" (Corsaro 2012, p. 488). Collective activities such as peer play, help children elaborate and address their own concerns as they learn to role-play and negotiate rules in play. Peer play also gives rise to opportunities for reflecting with one another (Corsaro 2012). Children learn to negotiate with other peers and in doing so, become more aware of themselves when playing (Sommer et al. 2010). Furthermore, peer play offers a dynamic space where children can learn to negotiate relationships with each other (Bjork-Willen 2012).

Play serves as the primary activity for young children to interact with peers and promotes their social competence (Gagnon et al. 2014). Peer play supports children's adaptation to demands of formal schooling (Eggum-Wilkens et al. 2014), by fostering higher levels of cooperation for more effective learning and performance (Ramani 2012; Bulotsky-Shearer et al. 2012). Research on peer play has frequently emphasised its impact on young children's social development and school readiness. We argue for a new emphasis; for a reorientation to greater understanding of the impact of peer play for learning and development. Here, development is not taken in a narrow social meaning but understood more broadly and systematically as a dynamic process of transformations driven by interactive relationships in peer play. Peer play interactions within and over different times, educational settings, cultural contexts, and social situations; do lead to sustained changes in the quality of young children's lives.

We find an example of investigating the developmental trajectory of long-term peer play in the writings of Hakkarainen (Chap. 2). Drawing on cultural historical play theory, long-term peer play is conceptualised through following three girls' bunny play over 15 years. Hakkarainen proposes that research, evaluation and guidance of play should pay attention to collaborative units instead of just individual play competence. He emphasises the necessity of analysis of the effects of peer play over a longer period of life. Long-term peer play has not been theorised in these innovative ways before. Research on peer play has usually been undertaken with pre-school and infant-toddler age groups (Bulotsky-Shearer et al. 2012; Engdahl 2011; Harris 2015).

Other innovations in the book include the dialectical conception of digital peer play by Fleer (Chap. 4) and the role of digital devices in peer play interaction, noted by Sulaymani, Fleer and Chapman (Chap. 8). This original work brings new directions to the research on development of peer play relationships.

Fleer (Chap. 4) conceptualises the dynamic nature of digital peer play and theorises peer play within a holistic system that encompasses a variety of forms of play practices. The legacy of Vygotsky (1967) is drawn upon. Vygotsky observed how the child borrowed another object to act as a pivot in play, as the child cannot yet separate their thought from the object. Fleer's digital app allows images to act as pivots in play where young children in her study become narrators who create a meta-imaginary play story of the *Three Little Pigs*. Research on digital peer play processes, within the broader system of pedagogical practices, has not previously been noted in literature on the use of apps. A model of systematic development of

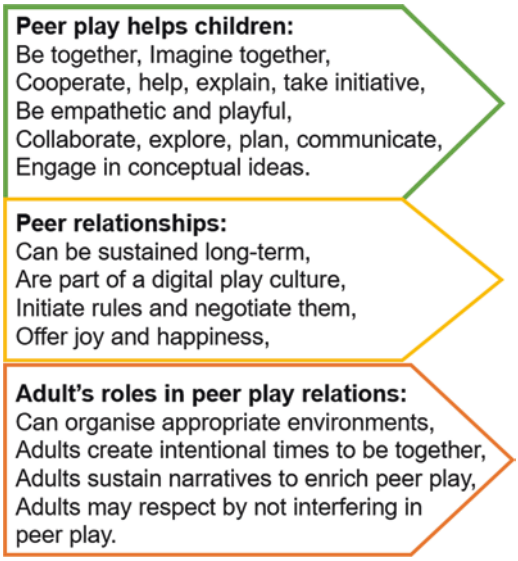

Fig. 1.1 Social essence of peer play

digital peer play in early childhood settings has now been developed (see Fig. 1.1). This digital peer play model goes beyond existing ideas in, for example, Australian early childhood curriculum learning strands.

In order to further understand the process of introducing digital devices to children's peer play in an early childhood setting, Sulaymani and his colleagues in Chap. 8 examine the role of the iPad in fostering peer collaboration skills. As a result of their observations of initial introduction of the iPad, they conclude that appropriate integration of digital handheld devices in children's peer play, offers possible opportunities for peer collaboration in learning. The changing relationships of peers in play and the development of digital peer culture can happen because of the changing environment. For instance, when a digital device such as the iPad is applied in the early learning setting, the children's peer play relationships are dramatically transformed. This may be because the dramatic moment of iPad introduction to the group has created impact on, and a challenge to, the children's collaborative development.

Gold and Elicker (Chap. 5) elaborate their project on Engineering peer play, taking a new perspective on early childhood education in science, technology, engineering and mathematics (STEM). Processes of young children's block play are likened to engineering, where specific social skills of communication, spatial reasoning and planning are required and achieved through their STEM project.

This book offers a timely reconceptualisation of the social essence of contemporary peer play by giving theoretical consideration to influences of unique cultural settings.

1.4 Theorising the Social Essence of Peer Play Relationships

We focus in this section, on the complexity of peer relationships as being social, imaginary and empathetic. In this book, the original contributions bring together embodied imagination with young children's capacity to express themselves through affective peer relationships. It also provides further insight into how peer play contributes to affective peer relationships and cultural learning. The following diagram (Fig. 1.1) is used to synthesise the social essence of peer play in different cultural and pedagogical settings.

Each chapter brings complexity to the social essence of peer play, for example, Ridgway, Li and Quiñones (Chap. 3) have conceptualised moments of peer play in building affective, and reciprocal relationships, which encourages agentic imagination and joyful learning.

In Australian society, the care and education of infant-toddlers has been given greater attention in recent years. Through institutional practices, toddlers begin to imitate, join other's actions, and play together more (Hannikainen and Munter 2019). Quinones, Ridgway and Li (Chap. 6) bring a subtle narrative of *imaginary peer play* to the conceptualisation of a group of toddlers' dancing together. In synchronised gestures and dance, *imaginary peer play* is experienced as a fluid, and spontaneous collaboration. It conceptualises the affective peer relationships developed through toddlers' awareness of being together. In collectively dancing, the toddlers engage in joyful companionship shared with their peers in play.

To understand how demands and motives may interact in toddlers' peer play, Li and Yu (Chap. 12) suggest that dynamic peer interactions with demands and motive orientations, can clearly reveal young children's happiness. They discuss friends' *togetherness and awareness* in ball play, where two toddlers' empathetic playful interactions, align with a new situation. Toddlers make demands of each other and through that process of interaction, they create new motive orientations in order to enjoy their togetherness in peer play.

Opportunity for digital play has been found to be a valuable resource and device for children to create playful peer collaboration in a Saudi Arabian cultural-historical study by Sulaymani, Fleer and Chapman (Chap. 8). Their work examines the role of the iPad in a Saudi Arabian early school setting. Their research found that the iPad can foster peer relationships, collaborative skills of taking initiative, helping and explaining, sharing work roles, excitement and happiness, and monitoring activity.

Adams (Chap. 14) introduces the concept of a *cohesive collective* of siblings (as peers) while theorising peer collaboration in sibling play. These siblings provide a glimpse of group cohesion initiated by strong bonds, emotion and general agreement whilst working towards solving a shared problem. The new concept *cohesive collective* is understood as improvised collaboration. Peers come together through joint movement and conceptually bound thought processes, by using sustained shared thinking.

In order to foster peers' collaborative relationships, the rules in peer play need to be investigated as they become very important at preschool age (3–5 years). The negotiation of rules in peer play appears to be a way for young children to construct their self-identity through understanding other peers. In Sun, Chen, Pan and Ming's (Chap. 10) case study of block play in a Chinese kindergarten, preschoolers' construction of *rules in peer play, meaning and identity*, are examined. Meanings of rules are constructed in continuous dialogue and negotiation with peers in play. Through this process of meaning making in peer play, children also build their identities.

Looking beyond books and blocks, Williamson, Lovatt and Hedges (Chap. 13) examine how peers are *playing around* with concepts. Engaging with complex ideas and equally complex intellectual concepts in peer play interactions, the notion of peers *playing around* is emphasized. Concepts of friendship, cooperation and responsibilities are highlighted. *Playing around* results in more creative ways of testing rules, behaviour limits, and activating agency in toddlers' own lives.

Following the intentions of children at group mat time, was the focus in the study of Mortlock and Green (Chap. 9), who explored young children's *peer cultures and playfulness* in a New Zealand early years setting. Research showed mat practices had some impact on peer relationships. There were a small number of children who shared collaborative mat time, however some children did not and sought to covertly play around with rules. Teachers played a critical role in creating the 'we-ness' of mat time. There were strong implications for teachers' acknowledgement at mat time of peer play and relationships.

Peer play can elicit certain expectations of children who play together. Involved in a study that suggested parents organise supportive and appropriate environments for peer play, Bredikyte and Skeryte-Kazalauskiene (Chap. 11) discuss *mothers' attitude* toward their young children's peer play and the pedagogical implications of organising appropriate environments for the development of peer play. More research needs to be undertaken on how adults might support peers and peer play.

1.5 Conclusion

These peer play perspectives, located in widely differing demographic and geographical circumstances, from scholarly research in Lithuania, USA, New Zealand, China, Australia, Malaysia, Saudi Arabia and Finland, bring early childhood peer play into a new theoretical consciousness for a changing international world view of the learning that happens through collective social relationships.

As Nicolopoulou et al. (2014) argue, peer life involves a rich complexity with great potential for children to influence each other and thus become aware of their own stories and enrich their lives. The reconceptualisation of peer play and relationships within this book promotes new thinking of children's play development and how young children interact in their contemporary worlds.

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Chapter 2
Long-Term Peer Play and Child Development

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2.1 Introduction

A widely accepted hypothesis is that children's play promotes psychological development. Peer play has a specific function (intimacy and trust) in development according to Howes and Matheson (Howes and Matheson 1992a, b) research group. Evidence about causality between play and development was sought for in a survey of play studies recently published on the Internet in English by Lillard et al. (2013a). Collected evidence on positive influence of pretend play was tested using Smith's (2010) concept of 'play ethos' (pretend play is *crucial* to optimal development) and two alternative causality models (*equifinality*: Pretending helps some developments, but it is only one possible route, and pretending is an *epiphenomenon* or by product of some other capability and does not contribute to development) as criteria for demonstrating causality between pretend play and child development. Due to unsound methodological practices (e.g. interpretation of correlations, replication of experiments, and unmasked experimenters) only descriptive review was carried out. It is necessary to ask if effective causal relation between pretend play and development can be tested on the basis of available review material. Found evidence was quite scarce and mostly against existing beliefs about strong causality.

Lillard herself described the paradox of experimental study of pretend play by asking how genuine, authentic play could be studied experimentally. Children may decide to change the setting and pretend something different from what the experimenter has designed. It might be impossible to adapt flexibility of pretending to the strict causal – effect linearity. She ended in proposing field and laboratory studies of pretend play. Intervention studies should be better designed and executed in

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order to increase pretend play. Important variables are children's intrinsic motivation, active learning, and high levels of engagement, not just pretend play (Lillard et al. 2013b).

Howes and Matheson (1992a, b) team studied how peers collaboratively construct joint pretend in play. This was associated with the development of emotional mastery, trust and intimacy. The team argued following Gottman and Bretherton's model (Gottman 1986) "that this is the major function of social pretend play in older preschool children" (Howes and Matheson 1992a, b, p. 5). It was supposed that before peer play collaborative construction of pretend in toddlerhood happens with mother (aiming at communication of meaning) and older siblings in the early preschool period (expressing and exploring issues of control and compromise). The research group proposed emotional mastery, trust, and intimacy as three developmental stages of social pretend play before four years of age.

Timing of and continuity of play functions are problematic in Howe's study. There is no explanation why and how the three functions are connected. Different persons (mothers, siblings and peers) just stimulate different functions. Researchers mention Vygotsky's zone of proximal development, but it does not help to explain data. Developmental changes were limited to early functions, which were separately studied using different child samples. Continuity of development was lost when transitions between functions were not studied with the same children. An additional problem is self-development and its relation to collaborative construction of pretend play. In Vygotsky's analysis the crisis at three frees the child from situational influences and active self is possible. Specific zone of proximal development in social pretend play appears in play from the age of 3–7 years or later (Hakkarainen and Bredikyte 2008). Collaborative pretending should also be studied at the stage of storyline-roleplay. Howes and Matheson (1992a, b) study stopped however when the oldest children were four years.

2.2 Story Form and Narrative Learning in Play

In my academic play research Zaparozhets' (1986) claim about similar structure in fairy tales and children's play has been important. He saw the only difference in abstractness of a fairy tale – children have to imagine the whole story, but in play, visible support is available. Bruner (1987, 1992) proposed to analyze play as stories by claiming that a story or narrative is a tool for making sense of our lives and organizing memories. The role of story forms in essential in carrying out psychological functions (e.g. memory does not produce separate details, but stories combine them). His concept of narrative construal of reality (Bruner 1996) was a necessary route to understanding the world. He explained narrative construal with the help of nine universals of narrative realities. He claimed that narratives search for intentional states behind actions and deal with reasons, not causes.

The Lillard et al. (2013a) survey revealed that in play studies development was a direct result of play or learning, and was named as development. Hakkarainen's research group concluded that narrative learning mediates effects of play to developmental changes. This type of learning we named 'free learning' because play does not have any defined learning goals. 'Playful learning' at school has learning goals. 'Free' narrative learning is based on narrative logic, which is different from the rational logic of traditional school learning (Fisher 1984). In traditional schools, children seldom have an opportunity to select their own problems and assignments. In play learning, the challenges are not defined in advance and no exact criteria of truth exist. Children may reveal their own individual understanding without fearing mistakes. There is an essential difference of motivation between narrative and factual learning. Play is described as demonstrating intrinsic motivation because no concrete products are produced (Leont'ev 1995).

Story form is a type of generalization, which is not based on realistic facts. My research team supports the idea that children's play has a story form (Hakkarainen and Bredikyte 2014). Stories have a central role in long-term peer play in this case study.

2.3 The Unit of Pretend Play

One of the basic tenets of Vygotsky's cultural -historical approach was the claim that human development can only be studied by analyzing it into units. The unit is essential in the study of pretend play and general psychological development as well. A criterion of a unit is a system, in which all essential elements and their relations are included. Vygotsky's example was properties of water (H_2O). On a molecular level, water extinguishes fire. But on an atomic level both elements oxygen and hydrogen stimulate fire. On the level of elements, development is lost (Vygotsky 1997). He characterized development as a chain of qualitative changes of psychological systems. An additional aspect in Vygotsky's analysis was multi-disciplinary. He was developing his ideas in 'pedological' multidisciplinary frame and e.g. his general genetic law has sociological – psychological character.

Vygotsky claimed that pretend play creates the zone of proximal development only when ideas start to guide children's play actions instead of their visual field (Vygotsky 1966). He supported Köhler's conclusions about differences in apes and human child development: "the ape is the slave of its own visual field." (Vygotsky 1999, p. 85). Vygotsky's own analysis produced three differences between apes and human child: (1) greater flexibility of the child by breaking the direct line between the actor and goal. Planning and tool crafting can be separated from problem solving and (play) actions on this basis, (2) inner motivation and postponed intentions guide a child's actions, and (3) children acquire the capacity of being both subjects and objects of their own behavior (Vygotsky 1978, p. 28).

Another precondition for pretend social role-play[1] is indicated in the analysis of self-development of the child as a result of the crisis at three years. According to Vygotsky the crisis 'me-self' creates potential subject of (play) activity. The child starts to separate their own and others' actions, see consequences of own actions, and follow rules in actions. These are essential in role interaction of play.

A problem in the analysis of development is that the whole process is not visible and observable. We can observe tendencies or prerequisites and conditions, but not direct facts of development. We cannot use the classic causality. Facts are a result of interpretation. Slobodcikov and Isayev (2000) proposes that we should use four types of determination in the construction of the object of development: causal, goal-oriented, value-oriented and sense-oriented. Different types of determination as a system form the genuine causality of development.

2.4 Case Study of Long-Term Peer Play

2.4.1 Research Problems

An unexpected long-term peer play, started from buying bunny puppets for the three girls Caroline, Eve and Hazel who were already used to playing together. The two older girls started bunny peer play at five and half years and continued to eleven and half. Their play continued for about six years transforming all the time. It was really children's own activity. Traditional research approaches were impossible because children did not like videotaping. In this study, observations had to be made from a distance. Due to play settings in two families and children's independent play elaboration, adults could not systematically observe and follow all play sessions. At all meetings of the three children the bunny play was launched over six years' time. But the character and type of play changed radically in those years. Tension between "the three adult bunnies" and bunny kids was created in several play themes. The last two year's (10–11 years) play themes can be characterized as "experimentation with identity" (e.g. "rock star" -play, writing "yellow paper stories") ("Play with self-picture" in Kravtsovs' terms).

Problems are mostly descriptive and explanations intuitive rather than fact-based. But, as examples earlier demonstrate, often used causality models are not adequate any more. The following questions guided the work:

1. What was thematic trajectory and play types over six years?
2. What was the prehistory of long-term peer play?
3. Are there long-term potential developmental effects of peer play?

[1] El'konin (2005) separated theme and content of play from each other. "Hospital" could be pretend role-play, but moral quality of role relations was the content of play. Content (understood as moral quality of role relations) was essential in the analysis of developmental potential of play in cultural-historical approach.

2.4.2 Method

A serious methodological problem in today's play research is cross section study of different age samples of subjects and combining development from data of samples. This kind of trajectory does not describe real proceeding of development. For example, Howes reported eight studies from different contexts of joint pretend construction with different children (Howes and Matheson 1992a, b). Real developmental continuity of the same children is lost. Real psychological processes and their transitions cannot be explained.

Reported long-term peer play might be an example of naturalistic setting of pretend play (Lillard et al. 2013a) or natural experiment (El'konin 1960). The long-term peer play reported in this chapter is not a typical cause – effect study. Reported play episodes are a compilation of memories of several people – the girls, parents and some relatives. Crafted props used in plays supported memorizing. (Caroline's mother systematically collected them). Systematic crosschecking was used in group interviews by asking the girls what they remember about play themes and events an 'outsider' observed and from 'outsiders', if they observed events, which ones the children remembered. Hazel commented that reported play periods are probably the most successful and this is why they are best remembered.

From the point of view of experimental research tradition all the rules are turned upside down in this peer play. There are no experimenters. Children are experimenting with possibilities of life in story mode (ideas dominate). There are no correct solutions or results, and play events are constructed using narrative logic. The use of narrative logic means that play themes are nonlinear constructs because each turn of role interaction may change proceeding with an unexpected story line.

The participants were recalling play events taking place 15–20 years ago in interviews. Group interviews were problem guided and non-structured. Each participant added one's own memories about play themes.

2.4.3 Participants

Three girls from two families participated in long-term peer play: Caroline, Eve and Hazel. Caroline and Eve were sisters and Hazel their friend. Three parents have educational professions (special teacher, day care educator, and university researcher) and the fourth was an electrician. The two families lived in their own houses about 12 km apart in a small Finnish commune. The parents had participated in a voluntary program of birth education for future parents. Parents decided to continue regular meetings after the birth of the first child and Caroline and Hazel became close friends. Eve joined them when quite young. Age difference of Caroline and Hazel was 2 days and the girls learned to move and communicate from each

other during visits. “Bunnies” play started at the age of 5 years and 4 months. The young sister (Eve) was then 2 years 6 months. The “Bunnies” play continued until the two oldest were 11 years old. During meetings of the whole parent group more children participated in joint play.

Regular contact between the older girls was broken at the age of 2.5 years when Hazel moved to California for one year with her parents. She visited a local day care center on the University campus and started to play in English. Moving back home revealed to Hazel a cultural difference of adult relations toward children between California and Finland, which might have influence on play later. She asked: “Why are people not talking to me here?”

2.4.4 Hazel’s Story Mode Experience

Cultural-historical play research has adopted the idea that child’s life world is the source of play. Special focus is directed to joint experiences with adults called [so–bytie]. This is affective-emotionally meaningful and exceptional shared experience, which is often transformed to play. Such experiences are planned and realized in ‘Golden Key’ play program (Kravtsov and Kravtsova 2017). Some story experiences probably can be connected to Hazel’s play.

Hazel visited local day care unit after returning from California. She remembers even now, a picture about horses moving she drew with a provider and told a story while working. The day care unit had the rule that children must spend at least 20 minutes in bed during mid-day nap. Before nap time Hazel drew five faces on her finger tips and each day developed a story with these figures under the blanket. Day care providers complained that Hazel does not play in day care. At the same time the three girls often played eight to ten hours on week-ends. This was connected with composition of day care group. About 20–30% of the children were placed to day care due to heavy behavioral problems (aggressions, crude language, ADHD etc.). Hazel preferred to hide behind the sofa with story books in order to avoid violent conflicts with these children.

The picture of moving horses was placed on a wall at home. Her grandfather was a professional artist and was taken in the act of copying the child’s drawing explaining that its ‘story’ is nice and dynamic [He was sure that this story could be his best work if he remakes it with his professional skills]. Hazel participated in story crafting in day care at four. Her story was sent and awarded in a children’s national story competition. Later she denied watching the first ‘Harry Potter’ film explaining that she does not want to change her images she created from my reading the book. At school she took part in drama club, visited voluntary literary art club in the city, published her first poems and studied mother tongue and literature at the university in master’s degree program.

All the girls visited children’s dance school lessons in the capital of the region. They combined dancing with imaginary story crafting.

2.5 Long-Term Peer Play "Bunnies of Cabbage Hill"

2.5.1 Prior History of Joint Play

Caroline and Hazel dominated attempts to construct role actions imitating domestic roles after Hazel's return to Finland. An interesting characteristic of the girls' play before "bunny" play, was the selection of space. At Hazel's home a new playhouse was available in the middle of the yard, but children seldom played in this house. Instead, they selected closed spaces separated from adult daily activities. The preparatory play stage lasted about three years and the following sites were used at Hazel's home.

1. Play in the firewood shed was a typical parallel play with objects**.** From time to time individual children took the role of mother. Play indicated how objects make sense to each individual child – adult garbage is a treasure for a child (Osorina 1999).
2. Attic closet provided a small cozy play space for each girl's individual play. Shelves divided the space into small compartments. Measures of the space were as if made for children.
3. A two square meter opening was ideal play-space behind the sauna-house. It was totally surrounded with small thick fir trees, which formed a boundary between play and outside world.
4. The children found an old tar - burning pit in the hillside of nearby forest, which was all covered over with soft moss. The slopes of the pit were gentle and the bottom even. Moss on the slopes stimulated the children to see small fairies and elves quickly moving and hiding in the moss. Rhymes and songs from early childhood transformed imaginary beings into concrete perceptions. These beings were included in play themes as 'real' participants of joint play.

2.6 Bunnies of the Cabbage Hill

2.6.1 The Bunnies

The bunny play started after a joint trip of the two families to an Outlet Mall in a neighboring city. Each girl got a soft bunny puppet. These three bunnies formed the core family (see Fig. 2.1). Caroline was playing in all situations with father bunny "Aatu", Hazel's puppet was mother bunny "Omena" and Eve's the second mother "Annukka". Caroline and Eve were sisters living in the same family, but they did not play bunny play without the third family member "Omena". When bunny parents met, a new joint play could start. A whole bunny clan was created over six years. Part of the new clan members were sometimes new puppet bunnies and sometimes they were just names. New members to the family tree were usually added so that

Fig. 2.1 Bunnies of Cabbage Hill- parents (Aatu, Annukka and Omena) and nine Bunny children

each parent got at least one baby bunny. At the end stage the number of members of the family tree was over 70 and it was drawn on to a large sheet of paper (see Fig. 2.4).

The girls wanted to give their own finish to bunny puppets and started to crochet garments and props for the puppets. They produced crochet works that weighed nine kilograms at the end of long-term play. Both families also had living bunny pets, but they were not taken to the play.

2.6.2 Crafting Props and Roles

Inside the general setting the players constructed thematic environments and prepared play props from cartoon, paper, wood, wool, textiles, wall papers, pictures, writing, talking etc. Several times a thematic environment was built in an empty carton box and play events took place in it. Often conversations between adult bunnies and kids were carried out in 'telephone' like girls' mothers used to. Kid's voice was pitched high in conversations. A lot of letters and notes were written during bunny play. They were miniature size, especially in "bunny-mon" play. A general impression was that the roles and actions of bunny kids were most important to the girls. Some role characters were just names and not incarnated as puppets.

Bunnies play could be carried out at any place (in the car, on the lake side dock, in both homes, in forest etc.). There were no rituals for moving to play world as in university play projects. Play started immediately at all meetings and often created a "flow" experience. Csikszentmihalyi called flow "human experience of joy, creativity, the process of total involvement with life" (Csikszentmihalyi 1991, p. 9). (I

remember an answer to my proposal to have a lunch break after 8 h of play: “No, we have just started!”). ‘Adult’ bunny puppets helped girls step into an imaginary world. Parents do not remember any quarrels between the girls about play themes or events. In the group interview the girls remembered the impossibility of knowing at the start of joint play session if it would be successful or not.

2.6.3 Attractive Play Themes and Events

The play process was genuinely children’s own activity selected, planned and carried out as a joint enterprise. Children’s bunny play proceeds through the stages of cultural-historical play theory summarized in a previous publication (Hakkarainen and Bredikyte 2018). Play events in the bunny world were connected to children’s life in adult world and at school. Often the themes exaggerated real phenomena. A factor reflected in play construction of the three girls, was daily reading of children’s books in both families. Tales and stories were discussed and sometimes led to unusual children’s demands like ‘can’t you read more wrongly?’, not ‘you did not read correctly’. This might be interpreted as experimentation with imaginary alternatives.

Parents observed a clear difference between play themes that were quite ordinary like “the family”, “weddings”, “funerals”, “school” etc. The three girls often selected themes from daily conflict between parents and children. Pupils’ piercings at school was an example. Bunny parents were severely scolding their kids for piercing. Another source of play was children’s literature, which offered many attractive themes for play. Such themes as war and pirates came from literature. Bunnies were fighting a war with squirrels and children’s pirate captain was a bunny called “cruel Maria” (Fig. 2.2).

2.7 Tension Between “Adult” and “Child” Bunny Roles

The “adult” bunnies represented absolute power of real adults in the society. They regularly used physical punishment with bunny children. They were punished by hitting with a rod on paws, with harsh language and corporal punishment used. A. B. Orlov (1995) analyzed the unbalanced relationship between adults’ and children’s worlds. His list presents dominating features of the adult world:

1. Subordination and domination by adults
2. Monologist communication between the worlds (e.g. teacher-pupil relation)
3. Children’s world is defenseless and unprotected,
4. Total control over children’s world as part of education,
5. Adult planned child development through ages,
6. Preparation of children to move to the “better” adult world,
7. Adult world always deforms children’s world.

Fig. 2.2 The cabin of cruel pirate captain "Cruel-Maria"

The tension between bunny role characters was hidden from parents because children were aware of their exaggeration in play. The girls demonstrated on video to the parents what it is like in the school. Caroline commented: "But our teacher is not like that". Bergström (1997) called naughty plays "black" in contrast to accepted "white" plays. Hazel said: "Sure we were cursing and playing forbidden themes in our bunny play, sometimes".

2.7.1 TV-Series Adapted to Bunny World

The children followed weekly 'Pokémon' TV – series. At that time early childhood educators worried about 'Pokemon' fans in their classes and asked: "what can we do with them?" I recommended the introduction of pauses, which could slow down the tempo of play events in order to give children time to reflect on consequences of aggressive play actions. The girls changed the character of play. Trainers (bunny kids) instructed fighting skills to fantasy creatures (students). But creatures were crafted from wool thread. 'Bunny-mons' was more "girlish" play. Boys' direct imitation of seen actions were changed because "students" were knitted giving them a 'soft' fantasy form. All skills and actions were not repeated in bunny-mon play. All industrially produced and advertised Pokemon props were changed to self-made Bunny-mon play props (miniature books, cards, balls, role characters etc.).

Fig. 2.3 Bunny-mon "student characters"

Preparation of props took time after watching the TV- show and girls simply forgot some events. Another mediating factor was that bunny puppets were "subjects" and girls directors. Inter-relations complicated their "Bunny – mon" play (Fig. 2.3) and slowed down the tempo of TV – show. There were three kinds of interacting characters: girls, bunny- kids, and "Bunny-mon" student characters.

2.7.2 Bunnies as "Rock Stars"

A couple of years before the end of six year play the girls introduced typical themes of teen-agers. A fascinating theme was rock stars and their fame. Most aspects of the life of rockers were transformed to bunny play except playing live music. The girls were talking and writing letters and notes all the time as bunny characters. In rocker bunny play they started to develop "yellow" papers writing gossip and scandals about rockers. This play period constructed the experience of feeling the fragile balance between fame and its crash in scandals. The selection of emphasis on playing with social position showed that there were no professional ambitions of becoming a better musician, but instead, emotionally feeling the social position.

2.8 Play Types over Six Years

Play over six years can be divided into theoretically derived categories of cultural-historical approach. I have called the first play period "preparatory role play". The six year period started with role play using bunny puppets as role support. The girls adopted bunny roles and play themes varied. Appearance of bunny kids at school brought to the play tension between them and "adult" bunnies. In cultural-historical play theory this stage is called "director's play", during which children are not totally immersed into roles, but direct bunnies play action and create storylines through play events. The last two years I called "self-oriented identity play". In the following I shortly describe the types of play. The given age limits are flexible.

2.8.1 Preparatory Role Play (3.5–5.5 Years)

Above I have described environments, in which this play took place. The children choose well known roles like "mother", "papa", "day care providers", etc. and their actions for role models. Fantasy characters like trolls and gnomes came from a children's song book and tales. There was no or minimal role interaction between the girls. Play is parallel role play. Role interaction started in elementary form when the two older girls were near five years. An interesting characteristic was how adult's garbage (e.g. broken cups, metal sheets, electric waste etc.) was transformed into precious play props at this stage (Osorina 1999).

2.8.2 Role Play with Bunny Puppets (5–7 Years)

Puppet bunnies "Aatu", "Omena" and "Annukka" were the main characters in plays before school start of the two oldest girls. The themes of these role plays came from children's daily experiences and books read to them. Several weddings and funerals took place on the dock on lake shore at Hazel's home. Different themes were played at Caroline's and Eve's home.

2.8.3 Tension Between Role Characters (Director's Play 7–9.5 Years)

School start of Caroline and Hazel changed the character of children's play. Order and adult controlled discipline revealed real social positions of children. This relation was brought to bunny world: original bunny puppets were transformed to controlling adults. During their first term children drew each pupil's family tree. The idea of drawing family tree of the bunnies originated from this school task (Fig. 2.4). Adult power position might not have been emotionally pleasant to identify with and

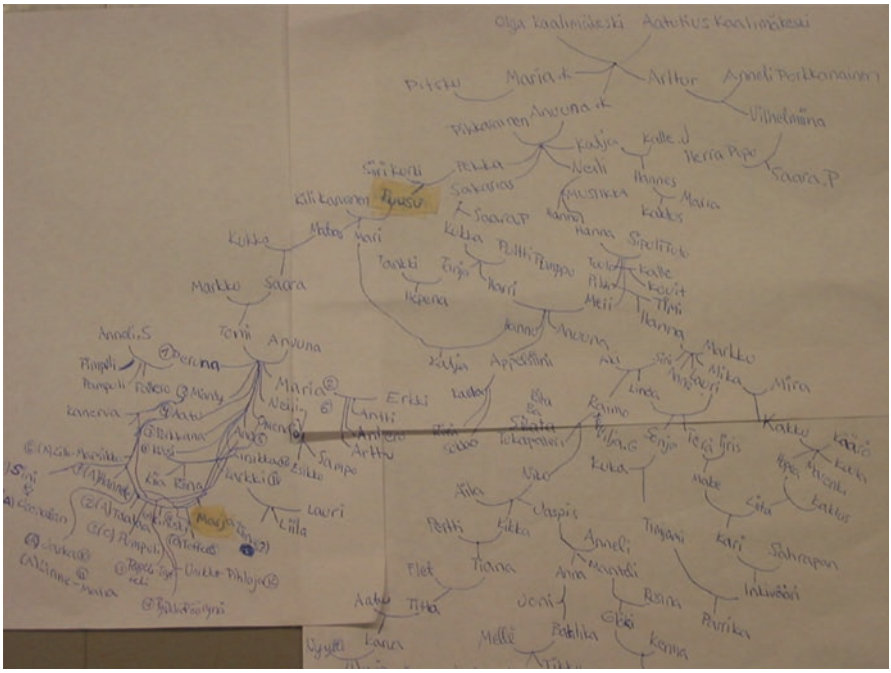

Fig. 2.4 Family tree of Bunnies of Cabbage Hill

director play suited the girls better. In cultural-historical play theory this is called "storyline roleplay" because "director" creates a storyline while inventing a chain of play events, role characters and social relations.

2.8.4 Self-Oriented Identity Play (Advanced Director's Play (9.5–11.5 Years))

Rock star bunnies play and writing connected with it, focused on emotional identification of social positions. If previous stages focused more on mutual relations between individuals this kind of play can be seen as experimentation with positions. This might be called search for answer to the questions: How it feels to be famous and how it feels when fame disappears?

2.9 Conclusion

What kind of results did long-term peer play in bunny world have? Exact identification is impossible because internal psychological processes are not visible and directly measurable. Vygotsky (1966) explained that sense making in play is

substantially different from daily sense making of the child. Generalization of results of three girl's "sample" even to same age girl population is impossible. It is only possible to claim that described phenomena are possible. They can be repeated, but it is hard to know when and in which situations. Play results as potentials that can be evaluated in principle after play age, but recognition of some psychological phenomenon as a result of play may be methodologically impossible. Explanations on causality between pretend play and development can be collected only indirectly. They are hypothetical and can offer a starting point for the study on causal relations.

Long-term peer play history of the three girls demonstrates a trajectory of how their play developed and what might be causal explanations for psychological development in general. The first conclusion is that adult mediation can be separated from pretend play situations. Children constructed the zone of proximal development in play alone without adult participation. There were two more advanced and competent players and the younger sister. At group interview the older girls revealed that they proposed easier roles and tasks for the younger one on purpose. A second point is that the girls showed amazing initiatives and creative experimentation in play situations without adults' immediate support.

I agree that the most important task of adults for preschool age is to support children's initiatives and development, which is not a linear process as Zuckerman (2007) proposes. Flow experience in many sessions of bunny play demonstrates successful integration of affective and cognitive elements. The girls' deep involvement in play did not disturb understanding the difference between real facts and bunny world events. Bunny world was used as a test case or interpretation of phenomena the girls observed in reality.

Joint play actions are preconditions of collaborative play in my mind. The girls' understanding of each other can be compared to social relations between identical twins. They emphasized in joint interview that long explanation was not necessary in role interplay, which made e.g. storyline crafting of play fluent. I would like to argue that the girls formed a collaborative unit of play in which individual participation is subsumed. Research, evaluation and guidance of play should focus on collaborative units instead of individual play skills only.

The majority of play researchers suggest results of play are potentials and abilities, invisible and impossible to be measured directly. Perhaps the idea of causality and effective causes has to be changed. There will be systems of causes and interactive nonlinear causality. This means that play is not the only causal factor for development.

Some traces from original peer play can be seen in some decisions and orientations 15 years after bunny play stopped. The girls developed from intensive play interaction circles of school mates, who still regularly meet. Effects of long-term peer play could be seen in professional orientation of the girls at the threshold of adult life. All the girls selected humanistic professional orientations. Hazel has been fond of books and stories and is now working as a children's librarian. Caroline is a dance teacher and mother of a baby girl, and Eve a freelance mask maker and make-up consultant. Caroline's interaction with her baby seems to have the same character as the three girls' collaborative play. She is able to 'read' inner states of the baby.

If development of consciousness and personality start from play as cultural-historical play theory supposes, effects of play should be analyzed from a longer period of life.

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Chapter 3
Toddler and Older Peer Play: Agentic Imagination and Joyful Learning

Avis Ridgway, Liang Li, and Gloria Quiñones

3.1 Introduction

Further research extending Monash University pilot project: CF14/2789 – 2014001543 *Studying babies and toddlers: Cultural worlds and transitory relationships*, Li Quinones and Ridgway (2014) reveals the complexity and speed of transitory relationships in toddlers' activity in long day care and home settings. We ask *How does agentic imagination in peer play enable joyful learning*? Ridgway et al. (2015) define agentic imagination as occurring when 'the child has actively connected their real life and imagined world' (p. 13). This happens in the moment of unification of toddler's motives and imagination. An example of researcher, cousins Em and toddler Luci, is videoed and analysed to illustrate the presence of agentic imagination in joyful learning.

Toddler relationships in play are characterised by fleeting exchanges that involve imaginative meanings of objects and roles (Elwick et al. 2014). Researchers of babies and toddlers however, are not necessarily writing about joyful imaginative relationships, or how they are expressed in outdoor settings, and for this reason, the presence of agentic imagination is brought to closer attention. The video taken by researcher captures older peer/educator Em simultaneously and imaginatively following and leading joyful play activity with toddler Luci. Video analysis provides evidence of agentic imagination and joyful learning between older peer and toddler. In shared relational moments, captured in screen shot images, shifts of attention, ideas, feelings and transformation of meanings of objects and roles, are evident. Video transcription reflects player's positions, exchanges, communications and shifts in play activity. A visual narrative methodology is developed by researchers,

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by juxtaposing transcription with screen shot moments. The resultant visual narrative builds awareness of transformation of objects and roles in play and the presence of agentic imagination.

3.1.1 Growing Awareness

The field of early childhood education and care (ECEC) in Australia, aims to build awareness of cultural meaning and personal joy. The current curriculum framework (VEYLDF 2016) specifically acknowledges that 'spirit refers to human exploration of being and knowing, a sense of awe and wonder, a search for purpose and meaning within a range of human experiences' (2016, p. 7). Visual methods are used to raise awareness in support of the written word (Pink 2001; Fleer and Ridgway 2014). In this chapter visual methods enable capture of shared moments amongst older peer, toddler and researcher. These reflect qualities of wonder, joy and purpose; qualities that might otherwise go unnoticed because of their transitory nature in everyday social interaction.

3.1.2 Joyful Learning

In his pioneering work expressed so eloquently by Rinaldi (2000) and Barsotti (2004), Loris Malaguzzi's (1993) words 'Nothing Without Joy', resonate worldwide. For those who use play-based curriculum with young children, there is continued encouragement to keep cultural meanings, joy and imagination alive (Rinaldi 2013). The notion of 'nothing without joy' in early childhood, is a powerful reminder that wellbeing and joyful learning occur within social interaction. Spiritual writer Neale Donald Walsch (2016), expressed this thought about interaction: 'Release the joy that is inside of another, and you release the joy that is inside of you.' Reciprocal interaction is endorsed in current play-based curriculum.

3.1.3 Looking Closely

This research looks closely at what, why, how, and where meaningful relationships and joyful learning occur for a toddler. Cultural historical concepts of social relations, situated context and imagination support theoretical discussion (Veresov 2015). When toddler's imagination is co-constructed, it becomes 'agentic' imagination, and forms in the space where joy is expressed in shared play activity. Agentic imagination arises in toddler play activity where affective reciprocal relationships grow with support of older peer/adult. This implies educators (e.g. an older peer) create desirable imaginative pedagogical relationships with toddlers for mutual

wellbeing and joyful learning. Agentic imagination can arise in a toddler's relationship with a same age peer, however in this research, toddler and older age peer brought their own agency and imaginative thoughts into relational play.

3.2 Theoretical Considerations

A cultural-historical theoretical approach frames the initial research question *How does agentic imagination in peer play enable joyful learning?* and supports conceptualisation of the moments of joyful attunement in toddler and older peer play.

Concepts of social relations, situated context and shared feelings are at the heart of children's development of agentic imagination and joyful learning. Cultural-historical theory acknowledges social and contextual factors, in particular, home and family values and knowledge, and participants' relationships and intentions.

Toddler research in education excites debate, imagination and exploration of 'new pathways for conceptualisation of agency' (Duhn 2014, p. 1). Children's 'commitment to sharing their world with peers begins early in life' according to Johansson (2017, p. 13). In Finland, Hakkarainen and Hannikainen (1996), Hakkarainen et al. (2013) examine why play has a positive role in young children's development and point to the fact that a single child cannot determine flow of play, nor interpret a next action of others. Vygotsky (1966/2015, p. 5) argued that in play, 'affective incentives' exist. These can be realised and resolved when time, relationships and space, lead to dynamic involvement in imaginary situations. In play with others (e.g. older) peers, Kravtsova (2014) suggests that 'children encounter a model for further learning activity' (p. 24). In addition, joint action in play according to Elkonin and Vygotsky (2001, p. 4), involves a 'concerted action' that may or may not have been modelled. Concerted action involves internal reorientation. In peers' social exchange, this would mean an orientation of one's own activities to another's. Research into how transitory moments in toddler's play can re-orient infant toddler learning and development, are brought to attention by Ridgway et al. (2016). Transitory moments occur when 'the child's needs, inclinations, incentives and motives' come together to bring active change; a re-orientation of participants' imaginative thought (2016, p. 2). Transitory moments are theorised by Quinones et al. (2017, p. 175) as 'affective moments of action' in a case example where harmonious responsive and respectful play allows toddlers to share both real and imagined meanings. In other research, Singer and de Haan (2007a) and Singer (2013) found peers and adults who are emotionally available for playful activity, are highly significant for toddlers' wellbeing, belonging and learning. Such relationships are an important characteristic of quality pedagogical practice for toddlers (Singer and de Haan 2007b). Cultural-historical theory supports better understanding of how toddlers learn through social engagement.

Represented in Vygotsky's (1994) term 'perezhivanie' is a connection between the way environment is embodied through awareness and how an individual relates to socially situated experience. Perezhivanie is a widely interpreted Russian term

with no English equivalent. Often understood as lived experience it names the embedded relationships, that exist between an individual and their surrounding world as both phenomena and concept (Fleer 2016).

Lindqvist (2003) noted: **'**Vygotsky sees no opposition between reality and imagination, but regards play as a creative interpretation process where imagination is both a prerequisite for and a result of the play action' (p. 55). Lindqvist claims the more experience a child has, the better their imagination is.

In earlier research, authors found shared play between a toddler and older peer connected real and imagined lives in active experience, where 'agentic imagination' develops (Ridgway et al. 2015, p. 95).

3.2.1 Initiating a Socially Situated Experience

From a cultural-historical perspective, agency has been thought of as an individual's subjective awareness of their initiation or execution of actions (de Vignemont and Fourneret 2004). Stetsenko (2008) proposes nuanced and subtle social relations in play activity, is where individual agency is most fully expressed.

Social learning theory suggests play is a 'creative reworking' of a child/toddler's impression of an experience (Vygotsky 2004, p. 16). If this is so, examining play from a toddler's perspective has pedagogical implications. Social relations in joint play (peer play) involve bringing imagination and personal interpretation to interactions with others. For learning to occur, this requires caring reciprocal exchanges. Identifying such exchanges is given later in the case example.

3.2.2 Social Relations and Learning Process

Vygotskian scholar Veresov (2015) elaborates learning processes in social relations where he notes, Vygotsky considered 'new complex wholes' can emerge. These 'new psychological systems are the result of development, a path along which the social becomes the individual' (Vygotsky 1997, p. 198). Social interactions for participants in joint peer play are 'a source of development of Higher Mental Functions' (Vygotsky 1997, p. 203).

Veresov clarifies Vygotsky's idea in relation to social learning:

> First, higher mental functions do not appear IN social relations, but AS social relations; every higher mental function was external because it was social before it became an internal strictly mental function; it was formerly a social relation (Vygotsky 1997, p. 105).

The quote suggests feelings and thoughts expressed in social relations are a source of higher mental functions. Veresov (2015) points to the learning process

where an individual's feelings in playful activity can change a social situation into one of a social situation of development.

3.2.3 Agentic Imagination in Social Situation

The term agentic imagination refers to a unity that becomes evident when peer play is framed by shared intentions. This unity occurs when young children's real life and imagined worlds become actively connected. 'The concept of agentic imagination involves young children's ability to freely express and act in play through imagining different roles and rules while playing and creating imaginary spaces' (Ridgway et al. 2015, p. 181). Real and imagined play connections are motivated by shared feelings, intentions, mutual respect and understanding between players (Gonzalez-Rey 2014). Agentic imagination grows when affective relations, freedom of expression and rich reciprocal experiences are present in the social situation.

In various social situations, agency and intentionality are distributed amongst players (Barad 2007). Social situations may include availability of peers (or caregivers) interested in sharing players' intentions. The importance of peers' emotional availability and intention is emphasised by Emde et al. (1991, p. 251). They discuss 'dual origins of early self, present in biologically prepared motives and interactions with people who are emotionally available'. Sensitivities in a situated context form part of a new complex whole in peer play activity. A complex whole includes significant relationships between participants. Within joint play, personal influences, motives, feelings, space, and interest in materials, exist tacitly and explicitly (see Hakkaranien Chap. 2 this volume). We extend an understanding of a 'complex whole' as it exists in emotionally available peer presence.

3.2.4 Relationships, Feelings and Situated Context

Research by Taguchi (2010) offers thoughtful comment on what she thinks is taking place between a child and play materials (e.g. sand/water). Taguchi finds no clear borders between child and materials, as to her, each appears to be informing the other. Taguchi discusses momentary shifts exchanged between child and play material resonate in transformed relationships in a situated context. In the case example to come, the situated context of toddler and older peer involves engagement in water play. Momentary exchanges in their situated context create shifts in roles and object meanings. A closer look at these, builds awareness of the complexity of a situated context.

A cultural historical theoretical research approach supports analysis of small moments (see Li and Yu Chap. 12). It allows finely detailed investigation from many

perspectives that include social interactions between participants, materials and the whole situated context. Acknowledgement of feelings in peers' emotional availability and awareness of transitory relationships, bring together real and imagined fields of experience through children's agentic imagination.

3.3 Methodological Considerations

Outdoor water play activity is videoed in a home setting by researcher. Video screen shot capture technique is used for the case example. Subtle movements and nuanced perspectives of transitory relationships between toddler and older peer are stabilized through this technique of video screen shot capture. The affective nature of awareness and attuned support of a significant peer in the toddler's life, can be closely examined. The case example video and transcript show older peers' (in this case positioned as educators') capacity to enjoy transitory relationships that stimulate imagination, concentrate action, engage warm feelings and share agentic imagination (thoughts in action).

This methodological approach fits with cultural-historical theory, as by rethinking and reviewing the finer detail in social relations, greater awareness of learning in joint play becomes possible. Visual narrative methodology holds the capacity to narrate how older peer and toddler affectively transform play objects and shift roles in a cultural context of joint water play activity. The video made spontaneously by researcher illustrates the warm relationships at the core of a joyful exchange. Video provides screen shot capture images for a visual narrative presentation to readers. Visual narrative methodology uses juxtaposition of image with textual data to illustrate cultural attunement. This offers finer detail of the relationships in play activity of toddler, caring older peer and researcher.

3.3.1 Ethical Considerations

The data reported involves one focus child, 18 months old, Luci (pseudonyms used) in playful activity with her nine year old cousin, older peer Em, and researcher. Whilst the wider study focused on studying babies' and toddlers' cultural worlds and transitory relationships to find out how they develop and learn through their everyday cultural life, this chapter explores how educator/older peer can extend shared moments through entering imaginary play activity, to achieve joyful, affective learning. Informed consent was obtained from Luci's parents and those of older peer Em. Participants' names are kept anonymous. Ethical approval for the project was granted by Monash University Human Research Ethics Committee (MUHREC). Video data is stored safely at the University for up to 10 years. Data comprise a short video clip of one focus child (Luci) and older peer Em with researcher, in

home setting. The family participants willingly shared the playful time together and enjoyed reviewing video of their activity.

Next, transformations of materials and ideas are identified in the case example.

3.4 Visual Narrative Case Example: Toddler and Older Peer Water Play

Cousins Luci (18 months) and Em (9 years) play outdoors. Researcher video captures spontaneous playful moments of engagement, curious about how agentic imagination and joyful learning might be expressed.

3.4.1 Situated Context

Em (9 years) and Luci (18 months) have a laundry tub partly filled with fresh water and a set of submerged coloured nesting cups. A lemon, water pourer and blue drinking cup are beside the tub. Researcher videos water play activity.

3.4.2 Visual Narrative

Luci (L) selects small blue nesting cup (Fig. 3.1). Em, older cousin looks at researcher (R) quizzically (imagining tub water may not be healthy for Luci to drink). Luci drinks from the small blue nesting cup.

Researcher points to fresh water in big blue cup and reassures Em tub water is fresh.

Fig. 3.1 Luci scoops up water to drink

Fig. 3.2 Em hands big blue cup to Luci

R: *It's ordinary water in there* (the big blue cup) *though…*
Em: *Could be bit dirty*

Em expresses concern about tub water quality and chooses to hand Luci the big blue cup of clean water (Fig. 3.2).

Em: *Luci drink out of this cup. Should I pour this in there?*

She asks researcher who nods yes, acting as Em's social reference whilst filming.

Em: *More water, more water, What have you got there? It's a cup.*

Em directs conversation to Luci and researcher, asking if pouring big blue cup water into tub is okay. Em pours explaining in a teacherly manner to Luci *…more water, more water*. Em asks Luci a question she already knows the answer to *what have you got there*, then names the object- *it's a cup*. When Luci is offered big blue cup by Em, she ignores it. Em responds by placing big blue cup, now empty, on adjacent seat.

Researcher, eager to see more, anticipates a playful idea of filling up big blue cup again. She says playfully and poetically to cousins Em and Luci:

R. *Little cup, scoop it up*

At this moment shared intention is achieved in the group. The playful game of scooping water together into big blue cup on the seat holds imagined promise for ongoing interaction. The smile on Em's face encourages Luci (Fig. 3.3). Through Em's concerted gestures and actions, and Luci's agentic imagination, Luci begins to fill the big blue cup with a little blue scoop. Em is joyfully watching and smiling, indicating sensitive appreciation of Luci's responses and shared understanding. Em uses verbal interaction and careful observation. Her imagination draws on movements, suggestions, and smiles, that fully engage her in experimental water play with cousin Luci.

Researcher provokes imaginative play by making a request to both girls *'cup of tea please?'*

Fig. 3.3 Em smiles as Luci scoops water into big blue cup

Fig. 3.4 Cup of 'tea' offered by Luci

R. *Cup of tea please?*

It is toddler Luci who immediately responds. She promptly offers an imaginary cup of tea in her little blue scoop to researcher (Fig. 3.4). Em's face shows surprise and delight in Luci's immediate capacity to respond imaginatively to something that Em may have interpreted literally. Luci's actions are accompanied by a joyful sound *mmmmmmmmmmmm*.

Luci. *mmmmmmmmmmmmmm*
Em. *Shall I put it back in?*

Em now pours water from big blue cup into tub.

Em. *What's happening?*

Luci puts empty blue cup on seat behind her. Em wants to know why, seeking to follow Luci's own imaginative narrative and enquires. Researcher provides Em with one possible explanation.

R. *You poured it out so she's putting it back.*
Luci. mmmmmmmmmmmm

Fig. 3.5 Em demonstrates pouring

Em. *Good job Luci, Very clever girl Luci, Good job*

Luci scoops water from tub to pour into big blue cup now located on seat (Fig. 3.5).

Em takes the role of encourager commenting to Luci with words like *good job, very clever girl…*

Luci. *Hah*

Em. *Fill it up. You can fill it up- good job you are doing a very good job.*

It seems to researcher that Em sets a goal which toddler Luci has already imagined. Their shared intentions have grown through warm and caring interactive exchanges.

Em. *Do you want me to help? I'll put some more in. okay…I'll fill your little cup*

Luci and Em are immersed in active joint play. Em remains eager to participate and offer support. The awareness and response from both Em and Luci are in harmonic flow. These are conditions for deep level learning and agentic imagination.

Luci. *mmmm Mmmm, mmmm, mmmm*,

Each time Luci pours water into big blue cup she makes harmonious mmmm sounds.

Luci. *mmmm, that,*

Em. *There's a lot of water in there, a lot, how about I put this down, I'll put it down there. Make it easier?*

Em places an almost filled big blue cup on the ground. She imagines doing this will make it easier for Luci to pour into. Luci immediately responds to Em's move and squats down to continue pouring water into the big blue cup. Luci

Fig. 3.6 Em. introduces lemon to cup

however, finds it harder to pour from that position and promptly decides to move big blue cup back up on to seat.

R. *She likes it there* (said to Em.)
Luci. *mmmmmm*

Researcher shows support for toddler's choice and in the spirit of continued harmony Em personally responds with a new suggestion. It is very clear from this exchange that Luci is also 'reading' the conversations, the looks exchanged, and the caring support for her activity. Em socially references researcher, who reads her look as a question when she replies *'she likes it there'* and Luci appears to agree by vocalizing with an expressive *'mmmmmm'*. In this exchange the presence of agentic imagination is found.

Em. *How about if I do this, put that one in*

Em now uses a practical initiative. She shares her idea clearly with Luci however she is also now very aware that Luci has her own ideas and can express them. Em floats a lemon in big blue cup. Use of words '*how about'* suggests Em's understanding of the need to pre-empt a new challenge for Luci. Em is always interested in Luci's active imaginative responses. Their joint agreement is sustained as they continue to play.

Luci. *Ehhh*
Luci uses a new sound when she responds with *ehhhh*, rather than *mmmmm.*

Em shows Luci how to float a lemon in the big blue cup (Fig. 3.6).
Luci responds quickly and follows Em's idea.
She takes one from tub and puts it into big blue cup too.

Luci. *mmmmmmm*

Luci produces the harmonious sound again.
Imitating Em's action with lemon she independently produces her own action (Fig. 3.7).

Fig. 3.7 Luci imitates Em

Em. *Very good job Luci, very good*

Older peer Em takes dual roles of support and lead in the play.
She also gives Luci direct encouragement and acknowledgement.

L. *mmmmmmmm*

Luci tries to fill the empty pourer as it has no water or lemon in it.
As seen by response below, this was not at all in Em's mind.
Researcher notes that whilst still in joint play, the children hold different ideas.

Em. *No, no, try that one, try this one here?*

Caring older peer Em anticipates it may be hard for toddler Luci to fill pourer so she places it on seat.

Em. *Shall I put it here?*

The subtle movement of Em shifting pourer comes from her earlier observation of Luci placing big blue cup onto seat. By doing this, Em demonstrates sensitive and respectful support for Luci. Em directs her question to Luci for permission and also for maintenance of joint play relations. Her actions reflect a keen sense of otherness in shared play activity and special affection for toddler Luci.

Luci. *mmmmmmmm*
Em. *Oh you want to put the water in the pourer?*

Luci teases and starts to fill the pourer held out by Em but quickly moves her blue scoop past pourer towards big blue cup (Fig. 3.8). With pourer and big blue cup both full she loses interest and play stops. Video ends at this point.
Older peer Em and toddler Luci move off together into garden.

Fig. 3.8 A new challenge offered by Em

3.5 Discussion of Case Example Findings

It is through a detailed examination of social relations, situated context, and shared feelings in the case example, that we can illustrate how agentic imagination in peer play relations enables and, at least, encourages joyful learning.

The situated context and shared feelings come together as a complex whole in the social relations narrated. Small joyful moments visible in water play narrative indicate Em Luci and researcher share feelings in a harmonious situated context. Analysis of play relations reveals imagination is an element of social cohesion amongst them. Em as older peer, shows her attunement with Luci and sustains responsive awareness to her in shared water play. Luci indicates her interest in Em's suggestions through joyful actions, vocalizations, gestures and movements. Researcher plays roles of social reference and provocateur. Affective reciprocity in social relations is exhibited (See Quiñones, Ridgway and Li, Chap. 6). Right at the outset Em shows concern for toddler Luci's well-being if she drinks dirty water. This motivates Em's swift action of offering Luci a big blue cup of fresh water. Fleeting unspoken moments of exchange show up in detail through use of visual narrative methodology within socio-cultural context.

Moments occur in the learning process where an individual's feelings in playful activity, change the social situation into a social situation of development (Veresov 2015). Values of wellbeing expressed strongly in play exchange amongst three participants reflect shared care, minding of one another, and interest (Parker-Rees 2017). Luci has space, freedom and conditions for imaginative ideas to flourish. Imagination is central to the way toddler Luci and older peer Em experience one another and the objects/materials they shape and transform (water, scoops, roles). Small details of how their learning is transformed through joyful interaction, indicate how agentic imagination is created when happiness and belonging is shared by all participants.

The role of researcher as a social reference and observer, brings another perspective to social relations and situated context of play activity. Curious to know more about agentic imagination, the authors as researchers, review video together to discuss the process of how and when Em and Luci jointly form shared intentions. We notice for example when Luci, highly attuned to colours, chooses a small blue cup for scooping up water. The colour matches Em's big blue cup exactly. This points to the tendency by Em and Luci for joint acknowledgement. They engage in harmonious rhythmic attunement to one another's ideas, preferences (colour blue) and moves and also in their verbal exchanges *mmmmmm eeeehhhhh, good girl, clever girl*.

The oral discourse *mmmmmmm, ehhhh* is used as a mechanism to share joyful movements and understandings with older peer. Toddler Luci chooses semiotic means to express herself (Trevarthen 2011; Wertsch 2007) and her capacity to do this, is significant for joyful learning experienced in the situated context. Older peer awareness of attuned relationships that create desirable imaginative pedagogical practices for wellbeing and happiness, are considered fundamental to infant/toddlers' learning and development (Taguchi 2010; VEYLDF 2016).

Smiles and close positioning around seat and tub of water, frame and contain spaces for play. Secure relationships with trusted and affectionate others, build feelings of joy. A moment of teasing by Luci when pourer is placed on seat by Em and Luci playfully by-passes it, is met by Em's considered response: *No no try this one here,* but Luci moves straight to big blue cup and pours into that showing her agency and will. A big smile emanates from Em as she realises Luci's playful teasing reflects their different personal intentions. Em shares joy in Luci's playfulness. In small detailed moments of water play we find two important points about agentic imagination: it involves children in free expression of joy and having space to act on their own ideas. Em and Luci create a shared, magical imagined world in which they both feel happy, safe and valued. The ritualised interactions and patterns of movements motivate them to take initiatives and create variations, that further support their formation of agentic imagination (Singer 2013).

Pedagogical awareness by older peer Em nurtures agentic imagination and joyful learning. Affective peer play stimulates toddler's imaginative thinking (cup of tea please) resulting in shared moments of joyful learning. Older peer awareness of harmoniously coordinated interactive movements with toddler is highly significant for wellbeing. The particular qualities of more experienced social partner Em and researcher, include capacity to imagine possibilities of the play space and materials, and an ability to sensitively read toddler's interests through semiotic expressions: verbal, non-verbal, gestural (Veena and Bellur 2015), visual and auditory. By responsively entering and developing dynamic shared play activity with an intention and awareness of connecting the real and imagined world, agentic imagination builds opportunities for joyful learning exchanges.

3.6 Conclusion

Detailed visual narrative shows an older peer/educator relationship does hold strong pedagogical and playful opportunities to enhance toddlers' joyful learning experiences. Moments of joyful learning and use of agentic imagination revealed in data, form part of the toddler's cultural life. The implication is that momentary relationships are significant in a toddler's daily life. The cultural expressions (e.g. cup of tea), the confidence to try new things (lemons float) and make decisions (use only blue scoop) indicate significance of fleeting transitory exchanges. The appearance of pedagogical perspectives worthy of inclusion in repertoires of practice for those who share the lives of toddlers, include having capacity for mutual reciprocity and an affectionate attitude.

The reality of experiencing an imaginary situation with warm social relations provides the feeling of 'nothing without joy' (Malaguzzi 1993). This represents a simultaneous joyful recognition of the young child/toddler's learning and becomes a shared value. The warm and repetitive *mmmm's* of Luci's exchanges as she scoops up water and pours it into the big blue cup, were created in response to wholehearted encouragement of those with her.

The most important finding in this research is that when participants in toddler play relationships are fully aware through attunement and interest in experimentation with materials from the toddler's perspective, meaningful exchanges of joyful learning can occur.

In relation to pedagogical implications for engaging with toddlers, questions are raised. Do we need to look more closely into those fleeting and transitory moments where exciting and joyful relational exchanges occur? How can one look more carefully at relationships amongst players? Where do praise, (good girl) compliments (clever girl Luci) and challenges (how about I put the cup here?) recorded in detail in this chapter, fit into educator/peer role in toddler play? How do peer/educators engage with toddlers to ensure their experience involves mutually joyful learning? Hakkarainen et al. (2013) emphasise that a flow of mutual experience is the highest level that play involvement can reach (Also see Chap. 2, this volume).

The original purpose of this chapter was to capture detail of joyful learning in a toddler's home context. Inhabited by family who care: an older peer, adult (researcher) and cultural objects, invites relevant questions in relation to current imperatives for more detailed research into wellbeing and joyful learning in toddlers' home settings.

Details in case example show the significant role of caring for one another's interests. In a mutually caring role, the older peer and adult supported the wellbeing and happiness of all play participants. The shared love, interest and safe relationships give freedom and full reign to joyful expression. The toddler makes choices and imagines what to do in the play situation. Agentic imagination is created through

affective, reciprocal relationships when time and space are given, and older peer and adult involvement occurs in toddler play activity. This implies the educators' role (e.g. an older peer) creates desirable imaginative pedagogical relationships with toddlers for mutual wellbeing and joyful learning.

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Chapter 4
Digital Peer Play: Meta-imaginary Play Embedded in Early Childhood Play-Based Settings

Marilyn Fleer

4.1 Introduction

Longstanding research into the nature of children's play has contributed enormously to how play is conceptualised and how teachers support the play practices of children in early childhood settings. However, digital play has not yet received the same amount of research attention, particularly in relation to peer play with animation apps. What is known has come primarily from studies in families (Danby et al. 2018) and critiques of new media (Nuttall et al. 2013), with more recent research examining the nature of digital play in early childhood settings (Arnott 2017). What appears to be central to this research, is a theorisation of what is digital play in relation to what it is not (Marsh et al. 2016), what apps afford for children's learning and social development (Theobald et al. 2016), and researching how children interact with devices and apps to initiate social pretend play (Verenikina et al. 2016). These conceptualisations of digital play, place the research lens on children and their interactions with digital devices. In contrast, the study reported in this chapter examines the broader context of children's play. The aim is to understand the development of digital peer play with animation apps over time and within the overall activities of the setting.

To achieve the aim of this chapter, a cultural-historical theoretical approach has been adopted in order to gain a holistic conception of the study context. The key theoretical concepts used are discussed in relation to the relevant literature in the first part of this chapter. This is followed by details of the study design. A model is presented to capture the findings. A discussion of the key drivers for the systematic development of digital peer play in early childhood settings is elaborated. Examples of peer play as illustrative of the findings are presented throughout.

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4.2 Theoretical Foundations

Play is theorized in this chapter from a cultural-historical perspective, where children (and adults) create an imaginary situation, in which they change the meaning of actions and objects to give them a new sense. In this reading of play, complexity develops within the imaginary situation and the associated narrative, and this in turn develops the child (Vygotsky 1966).

Play has been well documented in the literature, but with different foci (Fleer 2014). A range of approaches to studying peer play has featured (Brooker et al. 2014). Of significance, is how play has been conceptualized in relation to learning in Australia, the context in which this study took place. In the mandatory curriculum that informed the participants of the study reported in this chapter, play is described in relation to practice as, "Combined or integrated child-directed play and learning, guided play and learning, and adult-led learning" (Department of Education and Training 2016, p. 14). In the curriculum document play is modelled in relation to adults and children as shown below.

This conceptualization draws upon longstanding research from the UK that has shown the importance of sustained and shared interactions (Siraj-Blatchford 2007). In the curriculum context of Australia, particular kinds of interactions are foregrounded. For instance, "Effective early childhood practices use integrated teaching and learning approaches to support sustained and shared interactions with children" (Department of Education and Training 2016, p. 14). As will be shown later, this conceptualizing of interactions in play-based programs informs how teachers plan and organize child initiated play periods in centres. This approach to planning for play is relatively new and has promoted new ways of engaging in practice (see Brooker et al. 2014). Consequently, examining peer play when a handheld digital device is introduced into children's play in an Australian early childhood context, potentially offers insights into the nature of digital peer play in relation to the curriculum model advocated. However, as will become evident, the model shown in Fig. 4.1 does not capture all of the key drivers for supporting the development of digital peer play.

In order to achieve the aim of this study, a more comprehensive theoretical frame was needed. Consequently, *subject positioning* was drawn upon (Kravtsova 2009; Kravtsov and Kravtova 2010) to understand and advance the concept of digital peer play. Subject positioning is conceptualized as how teachers and children position

Fig. 4.1 Dominant theoretical model of teaching and learning in early childhood settings in parts of Australia (Department of Education and Training 2016 p. 15)

themselves in relation to the activity setting, to each other, and to the dominant practices within the activity setting. Kravtsova (2009) has noted that this concept captures how teachers in dialectical pairs take particular pedagogical positions in relation to each other. Also included are children and how they are positioned in relation to each other and their teachers. Examining how teachers and peers relate to each other in play, offers a productive approach to conceptualising the dynamic context of play-based settings, where digital play tools are introduced, and as such, gives the possibility of revealing insights into the nature and development of this form of peer play.

The positions that are theorized in Kravtsov and Kravtova's (2010) and Kravsova's (2009) model are, 'above the child/teacher', 'equal with the child/teacher', 'below the child/teacher', and the 'primordial we'. The practices are operationalized through pairs of teachers acting in complementary ways, such as when one teacher is equal with the children, and the other teacher is above the children or even below the children, asking for help. Children can also be in different subject positions; above, equal or below. The position of 'primordial we' is defined as a teacher or child actively modelling to another a certain practice in the context of its enactment. For example, this may be seen when an adult places an infant on their lap, whilst using a digital device, and narrating to the infant the adult's actions. This positioning is thought to allow the child to be in the activity setting, whilst being swept along with the dominant motives and demands inherent within the practice traditions (Hedegaard 2014), but not necessarily understanding or participating. Subject positioning in the context of a cultural-historical conception of play, informed the study and guided the analysis of the data.

4.3 Study Design

Peer play is always in motion. To study the dynamics of digital peer play within a holistic context, demands a theoretical framing that can capture in motion, the practices and interactions that support play development. A cultural-historical approach was used to document the dynamics of the local curriculum practices and teacher imperatives for implementing a play-based program. A holistic conception of research pioneered by Hedegaard (2008) and further developed through the use of digital video observations (Hedegaard and Fleer 2008; Fleer and Ridgway 2014) framed the study design.

4.3.1 Study Context

The study took place in a middle class inner city early childhood setting. Families and staff were mostly of European heritage background. The teachers were either four year degree or two year technical and further education qualified. The teachers

participated in an after hours professional development session where they learned about the focus of the study. They were given support in using the digital tools, and brainstormed with the research team a play inquiry to support children's learning of curriculum concepts. When gathering data, ongoing technical assistance was provided by the research team with the digital handheld device and the *My Create* app. This app allows the user to simply photograph a particular scene, to bring all the still images together into a moving picture scene, and record a narrative or music onto the animation (see Fig. 4.4). The teachers chose the fairytale of *The Three Little Pigs* to read, tell, role-play and to produce an animation. Further, they planned during the professional development session, to include house construction with a focus on materials, to explore with the children the associated concept of force, as is featured in building construction, strength of design, and blowing down the houses in the story.

4.3.2 Activity Setting

The dynamics of the free play period were examined by following the intentions of the children and the teachers over seven weeks. A total of 20 visits were made to the setting. The demands and motives (Hedegaard 2014) of the staff and children were noted in the context of digital peer play, as they negotiated their roles within the activity setting of children's play.

4.3.3 Data Gathering

Three cameras were used to document the play sessions that took place in the centre. Two cameras followed two focus children, whilst a third camera was positioned on a tripod to capture most of the play area. A home visit to each family was undertaken for approximately an hour. One extended semi-structured interview took place with the director of the centre. The details of the data and data gathering process are summarized in Table 4.1.

Table 4.1 Study details

	Data gathering period	Preschool digital video observational data	Photo documentation	Family digital video observational data	Teachers	Children
MT 2014	7 weeks	23.5 h	348	2 h	N = 10	N = 27 (1.6–5.3 years; mean age 3.5 years)

4.4 Findings

The overall finding of the study was that the complexity of digital peer play had to be understood as a collective activity over time, rather than as single moments of children playing together with a digital device and animation app (also see Sulaymani et al. Chap. 8 this volume). In taking a holistic view of peer play over time, it was possible to notice how peer play developed within groups and across time (as noted by Hakkaranien Chap. 2). It was found that there were six key drivers for digital play development, and these were all embedded within the holistic play practices of the centre. The drivers were:

- peer-initiated play,
- adult-initiated play-inquiry,
- adult in the imaginary play situation – in role or as the narrator,
- digital placeholders to support imaginary digital play,
- virtual pivots to support imaginary digital play,
- meta-imaginary play – peers in role or as the narrators of the digital play.

Figure 4.2 below captures these drivers as cogs in a system that came together to drive the development of digital peer play. This dynamic conception of digital peer play as a key outcome of this study is discussed in this section in relation to the cogs that make up the holistic system of peer play. This is a different conceptualisation of digital play to that which has been previously discussed in the literature (see Danby et al. 2018), where the focus of attention has been primarily on what is digital play and what is not digital play (Marsh et al. 2016).

4.4.1 Holistic Conception of Digital Play Practices

This section begins with an overview of the peer play context (peer-initiated play) in the early childhood setting where a handheld digital device had been introduced to the children for the first time. The device was used for making a digital animation of the fairytale, *The Three Little Pigs*. This device sat within a program in which the children and teachers supported role-play, play inquiries for constructing different types of homes for the pigs (straw, sticks and bricks), and child initiated play during free play time in the centre. The key drivers are discussed in turn, in relation to examples of data illustrative of the findings.

4.4.2 Peer-Initiated Play

Typically, children in this early childhood setting could draw upon the staff as a resource to support peer-initiated play during free play time. For instance, the Director of the centre during the interview stated that,

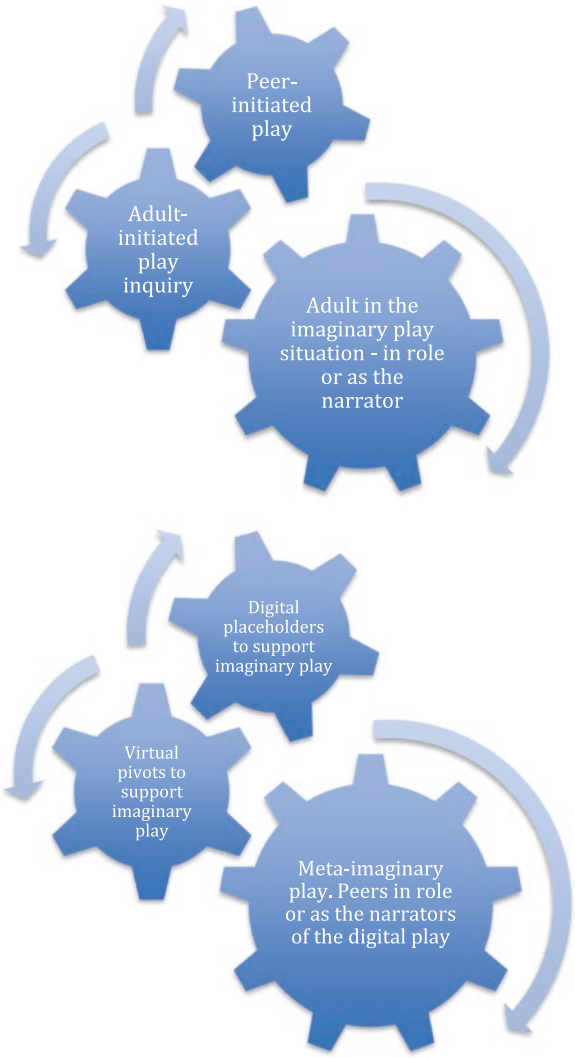

Fig. 4.2 Key drivers for the systematic development of digital peer play in early childhood settings

> *Our program is a play-based program. How that works, is that it's got child initiated, teacher initiated, and intentional teaching…it's basically extending what they are doing at the moment. So, if children are wanting to do a certain drawing, we will help them with different utensils and media to use; to express themselves… just to watch and listen* (MT17C5).

The philosophy of the centre, exemplified in this quotation, is directly related to the curriculum model in Fig. 4.1. The approach was enacted in practice, as was evident across the data set. For instance, when children asked for resources to support their play (e.g., "I need something to put over the pig's house. For straw"), or when directed to 'help themselves' to resources during an enactment of a play plot

or when preparing for this (e.g., "Just go and get the sticky tape from the office"), or when self-directed by taking objects and changing their meaning to give them a new sense, as the following example shows:

> *Being mummy pigs eating breakfast:* Ellen and Lucy each have a piglet mask in their hand. They have crawled under the three little pigs' table and are huddled up in a sleeping position. Ellen says to Lucy in a bright and cheerful way, "It's the morning". Lucy responds by wriggling and rising as though she is about to leave her bed. Ellen cries out and giggles, saying "Worms. Worms are getting me. It's the morning!". Lucy says, "Let's go to bed again". This suggestion is accepted, and Ellen curls up into a sleeping position. Both grasp their masks tightly. Then they both rise, saying "Mummy?"; "Mummy pig. Cupcake?". Lucy says, "Oh yeah. I made some coffee". Ellen responds by getting out from under the table saying, "I've got lovely cupcakes with ponies on top, I will get the cupcakes". Ellen moves across the kindergarten and retrieves a plastic cylinder and a pop stick from the shelf to use in her play as a cupcake. She says to Lucy, "Mummy pig come on. Two cupcakes". Lucy rejects her objects, "I don't want. I don't have cupcake". Ellen says, "I will get you one". Both children go over to another shelf, and Ellen finds an object (Fig. 4.3) and offers it to Lucy, "It's a tangle one". This is accepted and the pair continue to play being Mummy pigs eating breakfast (MT17C1).

Ellen and Lucy negotiate which objects best represent the cupcakes in their imaginary play of being mummy pigs – as only certain objects can faithfully represent something else; it is not a random selection (Vygotsky 1966). Both children hold on to their masks, signalling their role in the expansion of the fairytale of *The Three Little Pigs*. Using the three little pigs' table as their bedroom and potentially as the first part of the fairytale (where the mummy pig is growing up her pigs), requires more resources than were provided on the table. Ellen, by finding an object to use within the centre, is in keeping with the curriculum supported child-initiated play and learning approach advocated (Department of Education and Training 2016). It is also in keeping with the watch and listen approach of the staff observed during role play (MT17C58.4), and as discussed by the Director, "*I really like standing back and watching children, even their role-play, even what they use, say a banana is a telephone…you can get a lot of understanding from where they are at and where their development is at in role-play"* (MT17C1). Importantly, this example illustrates how the theme of peer play was strongly influenced by the common narrative collectively available to all, through the teachers having read and re-told the fairytale of *The Three Little Pigs*.

Fig. 4.3 "It's the tangle one" cupcake for Mummy pig

4.4.3 Adult-Initiated Play-Inquiry

Also found in the study was how staff actively modelled and supported the process of changing the meaning of actions and objects to give them a new sense (Vygotsky 1966). A play-inquiry was introduced to expand the children's learning experiences and extend their role-play. The staff introduced the children to the idea of designing and making homes for the three little pigs from different materials. The teachers actively encouraged the children to find materials in their environment that could be used in the role-play with peers, as the following example shows:

> *Making the houses for the three little pigs*: Six children are seated on the floor with Belinda their teacher, and two others are at a table close by. They are looking and feeling the materials that are in the centre of the group (pop sticks, sticky tape, masking tape, paper, straws, pencils) as the teacher asks, "How are we going to make a house? What type of house are we going to make first?". Without pausing, Alex says, "What about…arrr". The teacher asks, "What could be the strongest?". Ellen responds decisively, "Bricks". Another child lifts some pop sticks and says, "These could be bricks". Some of the children close by begin to observe what they are going, and some children from the group walk to the shelves looking at materials. Later the children go outside, searching for objects they feel would be suitable for the house made of sticks and the house made straw (MT09C4.23).

A key pedagogical point observed in this study was the establishment of play-inquiries that fitted with the narrative. The teacher created an extended narrative as part of the play-inquiry, and the children's engagement became evident when the children went searching for materials to be used for their indoor and outdoor role-play of *The Three Little Pigs*. This acted as a meta-imaginary situation that gave the children a collective play purpose. It made explicit the story structure of the role-play, the nature of the materials, the changing of the meaning of objects to give them a new sense (e.g., materials for the three little pigs' homes), and supported a social collective for the play activity, as is shown in the following example.

> *Outdoor scene setting*: The children are outside with another teacher Alice. The teacher is holding Lacy's hand. They are walking together across the outdoor play area whilst the teacher tells the story of, *The Three Little Pigs*. Lacy is in role as the first little pig. Most of the older children are following what is going on, even though they are in different parts of the outdoor area. The teacher says to the collective in a projected voice, "Her house is made out of straw". She points to a piece of equipment (A-frame with lattice), and then taps the red lattice that is leaning against the A-frame, signalling that it could represent straw and therefore be the straw house. As she does this, she says to the collective, "We are finding a straw house for Miss Lacy." One child calls out, "There is a wolf in the straw house", confirming acceptance of the A-frame and lattice representing a straw house. The narrative continues, and the children are collectively supported by the teacher at identifying which of the objects in the environment become different scenes and props in the re-enacting of, *The Three Little Pigs* in the indoor area (MT13C5).

The adult-initiated play-inquiry was collectively supported through the narrative introduced to the children prior to the play-inquiry (i.e., reading the story, re-telling the story many times, role-playing the story). The play-inquiry had a purpose – to find suitable materials for the homes of the three little pigs, but it also supported the

development of peer play. The teacher modelled changing the meaning of objects to give them a new sense (Vygotsky 1966). It was also observed when the teacher discussed the materials (strength and construction shape, triangular shapes for structural strength), for the purpose of the particular design brief for the story plot – could or could not be easily blown down. The reciprocity between developing the imaginary play and developing concepts was being enacted in this one play-inquiry. Repetition was common place, and the children and staff continued the play-inquiry over the course of the research period of seven weeks.

4.4.4 Adult in the Imaginary Play Situation – In Role or as the Narrator

Different from previous research (Fleer 2015), was the way the adults positioned themselves in relation to the imaginary play of *The Three Little Pigs*. Two different approaches emerged. The common approach was for the adults to act as narrators, as though directing a play, where they are positioned outside of the play scene. The second less common approach, was for the teachers to be inside the imaginary play taking a role in support of the peer play. But as is shown in the example below, the teachers seamlessly moved between these two roles in relation to what was required to support and develop peer play.

> *Teacher as wolf*: On the carpet are three discrete piles of materials, each representing one of the little pig's homes. The materials are all found objects. The children with the teacher have collected the materials and made the homes on the carpet. At each home, is one of the children who is holding a mask to signify their character in the play. They begin the role-play. The teacher Alice is at different times both the narrator and the wolf. She has a dual role. She positions herself outside of the area of the three homes and says, "One day (pausing)…who comes along"?. Sally responds by saying, "Wolf". The teacher continues, "The big bad wolf. And he comes across (pointing to the house) the first little pig's house, which is made of? (pausing again) … What's it made of (now kneeling down at the house)?". All the children together the teacher call out "Straw!". The teacher raises the mask of the wolf up to her face, completely covering her face, and says, "And the wolf says, 'Little pig, little pig, let me come in"… The teacher continues in role. The children in character respond to the teacher as the wolf. (MT13C45.20).

Previous research has found that teachers find it challenging to be a part of children's play (Lewis et al. 2019). Yet, this study has shown how important it was for peer play when the adults supported the children's play through being in role, and through the narrative they provided to help keep the whole play structure together to deepen the children's play. There were many examples of children actively inviting the teachers into peer play (e.g. "Can you tell it?"). Contrary to popular belief (Nilsson et al. 2017), the findings of this study support the view that children do want adults to be a part of their peer play.

4.4.5 *Digital Placeholders and Virtual Pivots to Support Imaginary Play Within Digital Meta-imaginary Situations*

With the backdrop of other forms of peer play discussed above, it is now possible to understand the nature of digital peer play that was taking place in the early childhood setting. In the examples below, the range of ways that peers drew upon the digital device to capture the role-play they had been enacting are shown. In particular, the first example is illustrative of how peers interact together when meeting the digital device for the first time, and learn how to use the app to produce an animation of *The Three Little Pigs*. The second example illustrates the way the peers engage with each other and with the app, where some show others how to use the device to capture an animation of their role-play with the felt objects/figures. The examples are illustrative of the dominant learning motive in the context of children's play motive (Hedegaard 2014), where both playing with objects and role playing are needed for successful peer play with the digital device.

Example 1 – Virtual placeholders and digital pivots for the role-play of The Three Little Pigs:

There are two children seated at small table, and three children standing behind observing closely. On the table is a felt board and felt pieces for the fairytale of, *The Three Little Pigs* (see Fig. 4.4). This activity setting has been available to the children since the commencement of the play inquiry. Today the children are introduced to the digital handheld device which has on it the *MyCreate* app. The teacher Alice holds this device to support the process of learning how to make a slowmation.

The teacher says, "We have to take lots of pictures because when the movie plays, it plays very quickly". The teacher moves one of the felt objects into place, and asks, "So what happens when the little pig builds a straw house? Sally answers, "The wolf comes along". Sally removes the felt tree to make room for the new piece. The teacher says, "Where is the wolf?" Sally finds and places the wolf felt piece on the board in the space she just created. The teacher says, "And we will take a few photos of the wolf and the little pig first". Sally moves the pig into place next to the house. The teacher supports the child's action by saying, "Good idea, put the little pig in the house". Do you want to take five photos Sally? Sally says "No, I don't have…" as she searches through all the felt pieces on the table, to which the teacher says, "You have to find the wind". Sally says, "Yes". The teacher

Fig. 4.4 Creating an animation of fairytale, *The Three Little Pigs*

helps Sally by looking through all the pieces. Another child joins in at first observing what is going on, but then participates by joining in with the search. Eventually after a lot of searching the piece is found. Sally then takes five photos of the scene, counting each time she clicks on the camera button on the digital device. The teacher holds the device steady as she does this. The other children are keenly observing this process. The teacher then invites Sally to change the scene ready for photographing, "Then what does he do then? No, no, no not by the hair on my chiny-chin-chin" (small interruption). The teacher draws the children back to making the animation by saying, "So what does the wolf do now?" and answers her own question, "He blows", as Sally moves another piece onto the felt board. Ellen has been observing closely. The teacher invites Ellen to take the photos, saying, "Ellen can you take five photos for me now?". Ellen presses the camera five times, and Sally adjust the pieces, as the teacher says, "So what happens to the house Sally?". This questioning dialogue and active participation of the Sally and Ellen continues until the full animation of the fairytale is compete. The children and the teacher re-tell the story as they view the digital images on screen, recording the narration. The 'movie' of their object directed role-play is now complete (MT13C38).

In this first example, the children have chosen to participate in the making of an animation of *The Three Little Pigs*. The story has already been role-played many times using masks, told to the children with a picture book, but also the children have on many occasions told the story to each other using the felt pieces. What is different here, is that the children are digitally recording the story they have previously embodied and told to each other using felt figures/objects. The device acts as a digital placeholder of their story – something that is new and appears to be of great interest for the children. What is being conceptually introduced to the children is that their fairytale can also be documented digitally, that they can create the scenes as photographic images, acting as directors of the play to produce an animation of the role-play. The device and what is recorded, also acts as a virtual pivot for new action, such as when they participate in the process of manipulating the app to produce the animation, to record their narration, and to set the speed of the image presentation. In this way, children are engaging in a new form of activity that can support their development in new ways – peer play includes the use of digital placeholders and digital pivots in digital imaginary situations (see also Fleer 2014). How children begin to appropriate this new activity, is the focus of Example 2.

Example 2 – Peer narrators in meta-imaginary situations:

The teacher Belinda invites Jason to sit in the chair and hold the digital device, saying "Jason come over here. You sit in the chair, and the ladies [research assistants] will tell you what do to". She moves Jason's hand to the device saying, "You can touch it. You need to take photos. The other children will change the scene (pointing to the felt board), and you have to press that button. OK?". The teacher leaves. Sally points to the camera button and says to Jason, "That one, the camera button". Jason places his finger on the button, and Sally says, "Yeah that one." Sally instructs Jason on taking the photos whilst the other children look closely. Jason says, "Now what?". He observes Sally as she takes the felt piece from the pile, and says, "The stick house. No, the wolf comes along". Sally looks into the bag of felt pieces, and says "All you have to do is get grandma's house, there…" as she places the felt house on to the felt board. She pats it down and then looks into the bag saying, "OK wait" [before taking a photograph] as she finds the grandma and places that next to the house, saying "There!". Jason looks on as she sets up the scene placing all the Three little pigs onto the felt board before he presses the camera button. Jason with some initial

Fig. 4.5 Digital peer play in action – reciprocity between learning and playing

support from the research assistant to steady the device and to hold it still, takes several more photographs after each scene change. The scene change is signalled by Sally saying, "Now the next part". Jason also removes the pieces from the felt board and helps set up the next scene (MT 17 C32).

These examples of practices within the play activity setting, supported the children to stream in and out of the imaginary play, and this in turn actively supported their meta-imaginary peer play – as captured in Example 2 and Fig. 4.5 Children are both learning and playing in the process of using the digital device to capture the action as digital placeholders of the scenes. The app allows the images to act as pivots in their play, as they manipulate the scenes to turn them into an animation, and finally together the children create their meta-imaginary peer play of *The Three Little Pigs*. This was only possible because the digital peer learning and play, took place within the broader context of an embodied experience of peer role-play and through hearing the fairytale read and narrated. That is, the peer play and storytelling with the felt board, laid the conceptual foundations that made it easy to engage in the process of learning to use the app and digital device for re-telling the story as an animation. Locating digital play within the broader system of play practices has not been previously discussed in the literature on the use of apps for producing animations.

4.5 Conclusion

Digital everydayness is now part of most European and European heritage children's experiences (Danby et al. 2018). Using handheld digital devices with multiple choices from a proliferation of apps (Arnott 2017), are normalised practices in many homes, and increasingly so in early childhood settings. Examining what this means for how peers play together in early childhood settings is important for better understanding what these devices and apps afford for children. In order to explore this problem, this chapter followed a group of young children and their teachers during the development of a range of imaginary peer play situations focused around the fairytale of *The Three Little Pigs*.

The outcomes of this study were informed by a dialectical conception of digital play (Fleer 2014), rather than theorising digital play within a dichotomous relationship with other forms of peer play – conceptions which appear to have inadvertently arisen as researchers grapple with how to explain the nature of digital play. In this cultural-historical study, digital peer play emerged and was understood within all the play practices operating in the centre.

A key finding of this study, was that peer play was enriched when teachers were part of the meta-imaginary situations in all the forms this took in the centre. Teachers provided the narrative glue that held the story line together for the children, allowing peers to continue to play within the fairytale narrative frame, whilst the adults selectively supported the play through filling in textual and action gaps. Further, it was found that the adults initially changed the meaning of actions and objects in both the material and digital play settings, and this expanded the narrative and developed the complexity of the play in all its forms. The play-inquiries initiated by the teachers supported this process. The teachers focused the children's attention on the materials and collectively modelled and engaged children in consciously changing the meaning of objects to give them a new sense relevant to the story line. The children also appeared to initiate play scripts that were complementary to the collective story line, as the example of the Mummy pigs showed. This example showed the negotiation of a selection of particular materials to support the play. In addition, this example showed how the children appropriated the known characters, using these to create their own drama within the collective play. What is theorised, is how the meta-imaginary situations of peers appear to take place through both the embodied experience of role-playing and the digital capturing of the imaginary situation in the fairytale.

In sum, key drivers for the development of *digital peer play* in early childhood settings appear as a streaming between the various play practices of: peer-initiated play, adult-initiated play-inquiry, adults in the meta-imaginary play situation (digital placeholders, virtual pivots), and peers in roles as the directors of digital meta-imaginary play situations. These drivers are conceptualised holistically as a systematic model of *digital peer play* (Fig. 4.2). The dynamic nature of *digital peer play* and how it evolves over time through a common narrative, must be theorised within a holistic system of a variety of forms of play practices. The study outcomes contribute to scholarly understandings of the expansive nature of play and the key role the adult has in developing *digital peer play*, going beyond the existing play and learning strands (Fig. 4.1) found within the curriculum model adopted in Australia.

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Chapter 5
Engineering Peer Play: A New Perspective on Science, Technology, Engineering, and Mathematics (STEM) Early Childhood Education

Zachary S. Gold and James Elicker

5.1 Block Play, Learning, and Engineering: An Introduction

> *It has taken me a lifetime of learning from children to know these things: how to stop the waste, how to channel the precious forces of children.* (Caroline Pratt 1948)

Young children have always playfully and creatively built with materials available, testing and expanding their ideas about the physical and social world (Hanline et al. 2001). Not surprisingly, young children's play with blocks and other loose parts constructive materials has been an important aspect of early childhood education since its inception. Froebel's Gifts and Occupations curriculum for kindergarten prominently featured both adult-guided play and children's free play with blocks (Froebel [1826] 1887). In the early 1900s Maria Montessori's innovative educational materials developed for the *Casa dei Bambini* in Rome included a variety of blocks designed to spark self-directed learning, increasing children's understanding of mathematical and geometric concepts through hands-on manipulation of objects (Montessori [1917] 1971).

These early uses of blocks in educational programs for young children focused mostly on aspects of cognitive development. However, subsequent developments in the early childhood curriculum by pioneer educators broadened the focus of block play to include facilitation of social relations among children and their peers. In the United States, Patty Smith Hill of Teachers College-Columbia University in New York was a passionate proponent of a developmental, play-based approach to

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early education, inspired by Froebel's kindergarten and the child study movement led by G Stanley Hall and John Dewey. Hill believed constructive play was a rich context for both cognitive and social development. Among Hill's many contributions to early years education were "Patty Smith Hill Blocks," a system of large wooden planks and joints that both enabled and required children to work together to build houses or other large structures that they could play inside or upon (Fowlkes 1984). Caroline Pratt, founder and director of the City and Country School in Greenwich Village and a contemporary of Hill, was another passionate proponent of play within the progressive education movement. She invented hardwood unit blocks as a free play material (Pratt [1948] 2014). Pratt conceived of children's play with unit blocks as "an experiment in cooperation that was the foundation for the social relations and ethics that were democracy" (Hendry 2008, p. 7). Unit blocks are still commonly found in preschool classrooms, and we employed them in research described in this chapter.

Block building as a prime arena for developing social language and cooperative peer relations was recognized long ago by American early educators including Hill, Pratt, Dewey, Harriet Johnson, and Lucy Sprague Mitchell. More recently, scholars have emphasized peer interaction and social skills as children negotiate, plan, and cooperate to solve problems in block building contexts (Hanline et al. 2001). In fact, much of the block play literature has been focused in theory (e.g. Piaget 1967) and practice (e.g. Hanline et al. 2001; Verdine et al. 2014a, b) on social and constructivist principles of early learning and development; on the notions that young children actively explore the properties of blocks, and through engagement with materials and social interaction with peers, construct knowledge about blocks, the building process, related areas of learning, and social relationships (e.g. Piaget 1967; Verdine et al. 2014a, b). However, little systematic research has focused on children's specific language use and social interaction processes while playing with blocks. Rogers (1985) observed that preschool peers played in social groups most often when using larger vs. smaller blocks, and that little or no negative social behavior was observed during peer block play. More recently Cohen and her colleagues (Cohen and Emmons 2017; Cohen and Uhry 2007, 2011) conducted a series of studies in which they observed peers' language interactions as they played with unit blocks. They found that children use complex social language with peers, frequent spatial language, and a variety of representational forms when they are engaged in peer play with blocks, in both free play and adult-guided play, compared to solitary play. While such studies provide preliminary evidence for multimodal learning in social block play, it is clear that additional research could illuminate developmental change in block play with peers and the linkages between block play and several areas of social and cognitive learning (e.g. mathematics, spatial skills, executive function; Clements and Sarama 2007; Verdine et al. 2014a, b). Additionally, innovative peer play education perspectives may inform educators' framing of social-constructive peer play in classroom contexts.

There are fascinating parallels between the world of young children's block play and the world of adult professional engineers. Children's imaginative and creative constructive play can be seen as a form of problem-focused design, much like the

work processes adult engineers use every day. Engineering design typically involves the statement of a goal or problem that needs to be solved by building objects, making plans or prototypes, evaluating results of the initial design, trial-and-error evaluation of built objects, and communication with others about ideas, strategies, the building process, and results (Moore and Tank 2014). Engineering is inherently a social-constructive process, dependent on effective social communication to construct the best version a planned physical structure (Petre 2004). Expert engineering teams, those that produce the most innovative and effective solutions to problems, typically foster innovation by encouraging differing viewpoints and ideas, valuing the discourse involved in sorting out differences, trying different approaches, and comparing alternative solutions (Petre 2004). While much more complex and organized than the discourse in children's peer play, there are striking parallels between processes documented within engineering teams and the language interactions observed among peers in young children's block building (Cohen 2015). In this chapter, we explore the theoretical utility of applying this engineering design conceptual framework to children's social construction in peer play. We ask three research questions:

1. How do young children's peer play processes during block building parallel the design process of adult engineers?
2. How can we observe 'engineering peer play' during young children's typical block play activities?
3. How can we use the 'engineering peer play' education framework to better understand young children's development and apply that understanding in classroom peer play contexts?

5.2 Peer Play and Engineering Design

How do children's peer play processes parallel adult engineering?

At its core, the engineering design process functions much like the scientific method, where scientists ask research questions, make hypotheses and predictions about their questions, test their hypotheses in experiments, and evaluate the experimental results. Fig. 5.1 depicts a standard version of the engineering design process model used in engineering educational programs and research (Moore and Tank 2014). A design problem or goal is identified and *defined*. Peers then discuss, *learn,* and agree upon a constructive approach. They *plan* their building approach, implement and *try* their plan, *test* and evaluate the effectiveness of the plan, and *decide* if changes are needed to meet construction goals. However, unlike the scientific method, the engineering design process is not wholly linear. Success in engineering depends on a flexible design approach involving reflective thought and the possibility that early building ideas and plans will fail. Of paramount importance in this process is the exploration of creative thought to produce innovative solutions to design problems as they arise (Howard et al. 2008) and likewise, the ability to incorporate the design process into

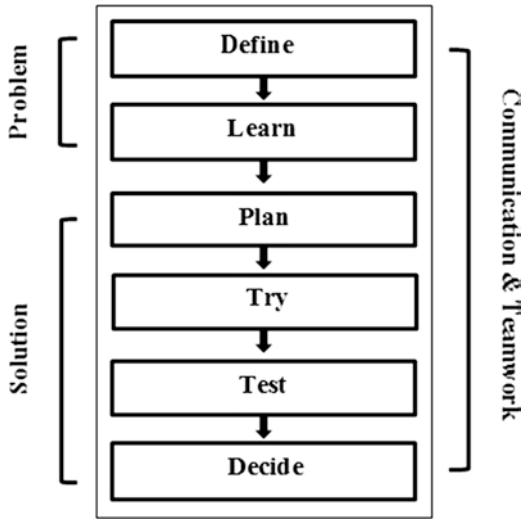


Fig. 5.1 Engineering design process, PictureSTEM, Moore and Tank (2014)

creative thought. This is achieved through iterative cycles of communication and teamwork used to test and evaluate the effectiveness of built structural components, reflecting on and discussing previous design ideas, modifying, adapting, and producing new versions of engineered structures until construction goals are achieved.

In theory, preschool and elementary school-aged children engage in a parallel process with peers during social-constructive play with blocks (Bairaktarova et al. 2011; Gold et al. 2015, 2020a). Figure 5.2 depicts a hypothetical example of children's employment of the engineering design process steps during constructive play. Children *define* their construction goal, to build a castle with two floors and a tower. They discuss and together *learn* that the castle must be tall in order to include the two floors and tower. The children organize a *plan,* where one child will build the floor while the other begins constructing the outside walls. They *try* their plan, building the floor and walls as tall as they can. However, they are met with a construction problem that calls for evaluation and a *test.* The castle is certainly tall enough for two floors and a tower, but there is no second-story floor in their prototype castle to divide the ground floor from the second level. The children *test* an alternative, removing half of the castle wall height and planking a long flat block across the top of two opposite walls. They *decide* this new idea will work, cycle back to the implementation step, and *try* lining up additional blocks parallel to their *test*-block until the first castle level is enclosed by a roof. Then the children replace the wall-blocks previously removed to finish the second floor while preserving the original castle height. The children might subsequently engage in another iteration of the engineering design process as they encounter building challenges while constructing the castle tower.

These children's engagement in the engineering design process depended on their reflective and creative approach to solving the construction problem; the absence of the second level floor. Without evaluation, creative thinking, modification of construction methods, and recognition that the original castle prototype did

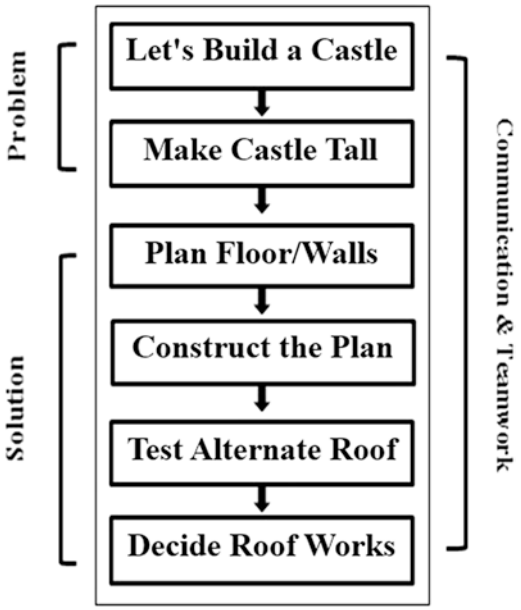


Fig. 5.2 Example of children's constructive play paralleling the engineering design process

not match their representation of the two-floored castle, the children may not have persisted to accomplish their defined building goal. Yet, these peers demonstrated a coordinated social effort to meet their defined construction plan and worked as an engineering team.

Research has confirmed that young children's peer play behaviors, viewed using the conceptual frame of engineering in several play contexts, parallel the design process used by adult professional engineers. Using direct observation methods of children's peer play with blocks and other loose parts manipulative materials, scholars have found evidence of children as young as four years expressing interest in and engaging in the engineering design process through their language and social interaction during peer play (Bagiati and Evangelou 2015, 2016; Bagiati et al. 2010; Bairaktarova et al. 2011; Brophy and Evangelou 2007; Evangelou et al. 2010; Gold et al. 2015, 2017, 2020a). Further, these findings indicate that constructive play with blocks may be a particularly rich context for observing engineering play behaviors and understanding how children employ engineering thinking during peer play.

5.3 Observing Engineering Peer Play with Blocks

What are children doing during engagement in engineering peer play?

The newest initiative in early engineering scholarship has been to systematically describe and categorize young children's engineering thinking into observable language- and action-based engineering play behaviors (Bairaktarova et al. 2011;

Table 5.1 Engineering Play Behaviors © Gold et al. 2017

Behavior	Definition	Examples
Communicates Goals	Expressing a desired end to achieve a purpose	"Let's build a castle" "I want to put this block on top"
Construction	Collecting and building actions	Stacking or placing blocks, collecting or organizing blocks
Problem Solving	Verbally identifying problems or suggesting solutions	"This will not work, it's too big" "This square block will hold it"
Creative/Innovative Action	Trying a new or innovative approach or idea	Leaning two long blocks together to make a teepee
Solution Testing/Evaluating Design	Testing and evaluating how a structure functions	Rolling a ball to test if a ramp works, saying it does not work
Explaining How Things are Built/Work	Explaining why or how something is built or works	"Let's put the block this way to hold the door on"
Following Patterns or Prototypes	Representing ideas verbally or in structural models	"This tractor is just like the one mom drives at home"
Logical or Mathematical Words	Using math vocabulary or if-then statements	Taller, near, above, square, counting, inside, around "If we use the square block, then we can close the tunnel"
Technical Vocabulary	Using specialized STEM words	Gear, balance, stability, satellite, ramp, engine, factory, robot

Note. The Engineering Play Behaviors categories and measure are copyrighted by Zachary S. Gold, Ph.D. © 2017, Purdue University, West Lafayette, Indiana, and cannot be reproduced, disseminated, published and/or used for any purpose, including research or teaching, without the expressed written consent of Zachary S. Gold.

Gold et al. 2015, 2017, 2020a). Various observational and statistical methods have been used to explore, define, and group engineering peer play behaviors. We hope to use these seminal measurement studies to establish a foundational understanding of behavioral processes reflecting the way young children employ engineering and related STEM skills during peer play. Bairaktarova and her colleagues (2011) observed preschool children's spontaneously occurring classroom peer play with a variety of open-ended materials. These observations were used to develop an emergent observational scheme, identifying five types of preschoolers' engineering play behaviors. Gold et al. (2015) further developed this engineering play framework into nine observable play behaviors and refined the categories to provide clear operational definitions and examples of each behavior for use in observational coding. Table 5.1 describes the nine engineering play behaviors with examples (Gold et al. 2017). In the current research, we employ our understanding of how peers engage in engineering play and illustrate observed examples for readers.

5.3.1 Research Design and Participants

Peer play examples in the current chapter are drawn from our recent observational study of preschoolers' dyadic play with traditional classroom unit blocks (Gold 2017; Gold et al. 2020a). Participants included 110 preschoolers (62 male; 48 female) ranging from 49- to- 72 months-old (M = 58.47, SD = 4.46). Children were recruited from 10 preschool classrooms in five rural and suburban counties in the Midwest United States. Classrooms included six Head Start programs, two church-based nursery schools, one public prekindergarten for children with special needs, and one university laboratory preschool. The sample was 77% Caucasian (n = 85), but included children from diverse socioeconomic backgrounds (42% of parents' highest level of education was a high school equivalency) and 27 children with identified disabilities (e.g. speech-language delay, autism spectrum disorder, attention deficit and hyperactivity disorder).

Research assistants visited participating child care classrooms to video-record children engaged in same-sex dyadic block play. Children were filmed in separate observation areas, quiet and removed from regular classroom activities (M = 14:53 minutes of observation). Dyads included only peers from the same classroom. Children were asked to produce and agree to a building plan (e.g., castle, rocket ship, gymnasium), after which they were given a box of 110 unit blocks and filmed in a large open space as they worked together to accomplish their construction plan. Three research assistants then coded children for frequency of engagement in each engineering play behavior (Cohen's K = .86).

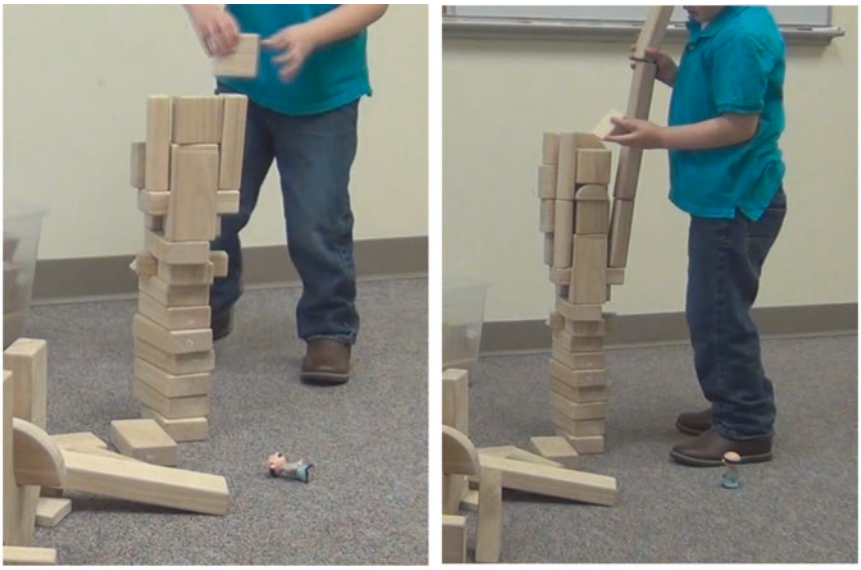
5.3.2 Case Examples

To illustrate how peers engage in these engineering play behaviors and the engineering design process, both socially and constructively, we present exemplars drawn from several engineering peer play dyads. Vignettes include both quotations and descriptions as a contextual reference:

Vignette 1
"Look at my huge tower!"

This engineering design example illustrates the elaborate construction of a tall tower and Child 1's attempt to add blocks while maintaining structural stability. As Child 2 observes just off-camera, Child 1 engages in a problem solving and evaluation sequence that becomes increasingly difficult as blocks are added, with variability in the shape and size of added-blocks creating an imbalance in the structural foundation of the tower. Several steps in the engineering design process occur (e.g. try, plan, test, decide), and several engineering play behaviors are used during this process (e.g. mathematical words ["more pieces", "one more square"]; communicates goals ["I'm going to get one more piece"]; explaining how things are built/work ["I'm going to keep building it so it will be nice and steady"]; solution testing/

evaluating design [“You don’t have to build it so tall”; rebuilding the structure differently after collapse]; problem solving [“See it keeps falling! I told you it’s too tall”]). It is evident in this example that observed engineering play behaviors were utilized as part of the design process to accomplish construction of Child 1’s tower. Equally important are Child 2’s observations and evaluations as key components of the problem-solving sequence, as well as Child 1’s persistence in rebuilding the tower after a failed construction attempt. This vignette represents a social-cognitive peer evaluation process in which one child leads and another observes and evaluates to achieve the construction goal (Fig. 5.3).



Child 1:	“It needs more pieces. I just need one square.”
	“Okay aha! Now look at this new work house.”
	“Hmm. Yes I’m going to get one more piece.”
	[Tower falls] “Uh oh! I’ll try building it again!”
Child 2:	“You don’t have to build it so tall.”
Child 1:	“Yes I do.’ [Tower falls again].
Child 2:	“See it keeps falling! I told you it’s too tall.”
Child 1:	“I’m going to keep building it so it will be nice and steady.”

Fig. 5.3 The engineering design process and behaviors depicted as children build a tower and exchange construction ideas

Vignette 2
"You need a windshield for your car!"

This engineering design example exemplifies a social constructive process in which one child recognizes a pattern in her partner's building and subsequently influences the constructive process and peers' co-learning. Child 1's structure is clearly organized, but it is not evident Child 1 knows what she is building as she adds new blocks and the evolving structure takes shape. Off-camera Child 2 contributes as an analytic observer, recognizing a car-prototype based on the figurine's apparent placement in the driver's seat of a car-shaped block configuration. Child 2's suggestion to add a windshield causes Child 1 to recognize the prototype and use her square block as the windshield her figurine needs. Child 2 then provides additional social encouragement as well as constructive guidance regarding how to place the windshield-block. Child 2 also observes Child 1 leaning over her structure while placing the windshield, and gently suggests caution so she does not inadvertently collapse her house. Several steps in the engineering design process occur (e.g. define, try, plan, test), and several engineering play behaviors are used during this process (e.g. mathematical words ["this is big", "right up", "fall down"]; technical vocabulary ["windshield"]; communicates goals/following patterns or prototypes ["You need a windshield"]; explaining how things are built/work ["Just stand that right up"]; creative/innovative action [using the square block as a windshield]). It is evident in this example that observed engineering play behaviors were utilized as part of the design process during the social constructive verbal exchange between the children. Significantly, Child 2's imaginative perspective-taking and communication fostered the development of Child 1's construction, the social-pretend story associated with her construction, and her understanding of how to physically accomplish the construction goal. This vignette depicts an engineering design process in which the effects of shared peer play experiences help children co-construct knowledge and form ideas about representational forms in their play (Fig. 5.4).

These are just two examples representing the kinds of reciprocal language and behavioral interactions that occur during young children's engagement in engineering play with blocks. Myriad examples of engineering peer play have been observed revealing the kinds of creative, imaginative, and process-oriented thinking strategies peers use to solve construction problems. However, beyond understanding how peers engage in engineering play, there are larger implications of the engineering peer play perspective within preschool education as a practice. How might researchers and educators use examples, like those described, to inform our understanding of early childhood development and learning, and apply that understanding through meaningful classroom teaching practices?

Child 1:	"This is big!" [Refers to rectangular block as she removes it from the box]
Child 2:	"You need a windshield for your car"
Child 1:	"Oh, I've got a car! [Places square block in front of figurine as windshield]
Child 2:	"You just stand that [block] right up"
Child 2:	"I hope your house doesn't fall down" [Child 1 leans over house].

Fig. 5.4 The engineering design process and behaviors illustrated during pattern recognition and co-learning

5.4 Implications of Engineering Peer Play in Research and Early Education

How can we understand and use 'engineering peer play?'

Observing and understanding how children engage in engineering peer play is applicable in research and practice for several reasons. First, constructive play with blocks is a potentially rich context to observe young children's 'co-learning' engineering with peers and their engagement in social-constructive peer play processes. For example, Gold et al. (2015) described the frequency of preschoolers' engagement in each of the nine engineering play behaviors within several play contexts offering varying opportunities for constructive play. Peers were observed in free play on the traditional fixed structure playground, in the classroom dramatic play

area, and both indoors and outdoors with Imagination Playground™ Big Blue Blocks, oversized light-weight foam blocks and attachable pieces designed to foster active exploration and creativity during social-constructive and pretend play. Results revealed that peers engaged in significantly more engineering play in the large foam blocks context, but that children also engaged in high frequencies of engineering play during dramatic play with peers.

As Hanline and colleagues suggest, "Representational play is supported as children take on pretend roles when they play with toy figures and vehicles, along with blocks" (Hanline et al. 2001, p. 224). Play contexts that allow peers to integrate representational objects support creativity and peers' feelings of social competence (Hanline et al. 2001). Consideration of how peers represent various block forms (e.g., following patterns or prototypes, Table 5.1) and integrate pretend play storylines during engineering play, reaffirms that early engineering is both a constructive and social process. Pan, Sun, and Chen (Chap. 10, this volume) also suggest block play promotes high levels of critical thinking. Therefore, we cannot understate the potential value of framing peer block building toward engineering as a method of understanding how children co-construct knowledge of social relationships, peer negotiation strategies, representational forms, and areas of early cognition and learning.

Further, research has demonstrated that engineering peer play is related to many early learning areas and may be inherently valuable in the systematic exploration of early cognitive processes. Gold (2017) and Gold et al. (2020a) found that preschool peers' frequency of engagement in engineering play with unit blocks was associated with mathematical ability, spatial ability, executive function, and planning skills (Gold 2017; Gold et al. 2020a). Applying engineering skills in practice naturally relies on obtained skills in mathematics, spatial reasoning, planning, and children's ability to communicate these skills through social interaction (e.g., verbal engineering play behaviors, Table 5.1). These learning areas have been studied extensively in the early years (e.g., mathematical knowledge, Clements and Sarama 2007; mathematical language, Purpura et al. 2017; spatial ability, Levine et al. 1999). There is optimism that young children's engagement in engineering play in constructive peer play contexts has the potential to influence cognitive development and learning. Moreover, because peers' engineering play is related to a variety of early skills, there are practical implications of engineering play as an early childhood perspective that can be meaningfully applied in classroom peer play contexts.

Therefore, another key implication of engineering peer play is its practical utility in classroom settings. Encouraging teachers' recognition and facilitation of STEM behaviors in peer play environments during the early formation of peer relationships could improve children's engineering skills, other related areas of learning (e.g. mathematics, spatial ability; Gold 2017; Gold et al. 2020a), and foster children's early interest in science, technology, engineering, and mathematics (STEM) as a future career. In a study involving 10 classroom teachers, Gold et al. (2020b) implemented and evaluated a feasibility intervention to field test engineering play as a teaching tool for the first time. The intervention facilitated teachers' understanding of: (1) the engineering design process; (2) how to identify engineering processes in

children's peer play; and (3) how to facilitate children's engineering play behaviors during constructive peer play with blocks. Results revealed that teachers were engaged and motivated to implement engineering skills with students and effectively supported and facilitated engineering peer play (e.g. noticing and supporting children's engineering behaviors, back-and-forth conversation, building with a child, encouraging children's block-building conversations). We also found preliminary evidence that when interesting building play materials are introduced into the classroom and teachers participate in training about early engineering play, preschool children's peer play is enhanced, increasing their engagement in planning, design, construction, and engineering thinking.

Therefore, scholars and educators might utilize the engineering peer play perspective as: (1) a method of understanding peer social constructive play processes; (2) a potentially valuable peer play context in which to improve children's development in several learning areas; and (3) a tool to frame children's interest and engagement in STEM processes in the early years.

5.5 Conclusions

Since the 1980s, opportunities for unstructured and semi-structured play in schools in the United States have been steadily reduced in favor of increased efforts to meet state standards focused on discrete academic skills, and this trend toward less time for play has recently extended downward into the pre-kindergarten years (Miller and Almon 2009). Some scholars argue there is a need to revisit the potential associations between play-based education in early childhood classrooms and aspects of children's learning and development (Nicolopoulou 2010). Scholars have suggested that because play provides young children with opportunities for enthusiastic engagement and challenges across multiple developmental areas (Gold 2017; Gold et al. 2020a), it is pertinent to develop early childhood educational perspectives that identify learning processes occurring during peer play, especially play in STEM. Direct observation of children's peer play using these perspectives will allow researchers and educators to further understand the behavioral processes that can influence young children's social development and school readiness (Bairaktarova et al. 2011; Gold et al. 2015; Gold 2017).

Research on engineering play as a framework for peer play and development is limited. In their recent review, Lippard et al. (2017) identified only 27 studies related to 'engineering thinking' in preschool. The majority of these studies either measured a construct theoretically related to engineering, without direct measurement of engineering, or assessed engineering thinking in less-traditional play contexts such as robotics. As we develop valid and reliable ways to observe engineering-related thinking and play, particularly with young children, scholars have been observing and gaining understanding of early engineering skills in facilitative peer play contexts, such as constructive play with blocks (Gold 2017).

The early research has indicated that the engineering peer play perspective may be useful in understanding young children's learning and development (Gold et al. 2015, 2020a; Gold 2017). Some play contexts may motivate young children to interact, experiment, and actively practice engineering skills in ways that foster STEM learning and encourage use of previously developed STEM skills (Brophy and Evangelou 2007). Framing and focusing on children's engineering-like behavior during peer play could be efficacious in encouraging children's early interest in STEM and motivation to engage in STEM learning outside of traditional early STEM instructional contexts.

Engineering play as a framework for peer social learning and collaboration is still in the early stages of research, but there is an abundance of potential knowledge to be gleaned about early engineering thinking and application in educational contexts. Although more measurement research is needed, including refinement of the existing engineering peer play measure and examination of other potentially important related factors, such as children's language ability, the field has taken an important first step in exploring potential use of the engineering play framework in early education constructive peer play contexts.

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Chapter 6
Holding Hands: Toddlers' Imaginary Peer Play

Gloria Quiñones, Avis Ridgway, and Liang Li

6.1 Introduction

> *The child has the enthusiasm and persistence to imitate and practice technique, and is supported in his/her interest by appreciative parents and peers.* (Trevarthen and Malloch 2018, p. 32)

This chapter aims to explore a case example of a group of toddlers' enthusiastic and joyful dance. The toddlers playfully enter into each other's imaginary and creative play. Recent research has demonstrated that children in free play are able to develop their engagement in play; through sharing initiatives and collaborating (Anderson 2018). Toddlers' collaborative play involves sharing imaginary worlds, planning and problem solving (Anderson 2018). Participating in higher levels of collaborative play has been shown to have a direct positive effect on children's cognitive and social competence (Schaik et al. 2018). Alcock (2013) refers to the complexity of toddlers' connection to others as an 'ontological connection of we-ness, with others' (p. 188). It is important for educators to pay attention to the environment, ensuring that it facilitates children playfully relaxing and experimenting with their bodies and actions when communicating with peers (Alcock 2013). Infants and toddlers share reciprocal interactions and collaborative learning through sharing interests with each other, and they develop cooperative attention by engaging in sustained interactions (Degotardi 2017).

Some researchers have explored dance and musicality in toddlers (Custodero 2010). According to Trevarthen and Malloch (2018, p. 26), dance relates to 'human bodies moving with grace and drama', and is a form of communication. As young children learn and develop, they become more fully aware of others' intentions, and

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use dramatic actions to express meaning and musical creativity (Trevarthen and Malloch 2018).

Toddlers use their own bodies and joyful repetitions to communicate that they are interested in each other's play (Løkken 2009). According to Fleer (2015), imaginary play involves improvisation and extending stories. In play, toddlers who cooperate more with others are able to align better their play (Pursi 2019).

Two-year olds value affectionate friendships and communicate joyfully with peers through imitation, meaning making and creative expression (Trevarthen 2018). In young children, early peer relations and distinctive peer interactions are formed in response to familiar peers (Hay et al. 2018). Further, young children who are members of peer groups are able to show abilities such as cooperation and coordination of goals that emerge in toddlerhood (Hay et al. 2018).

Through peer interaction, toddlers are able to explore early non-verbal communication such as pointing, gesturing, and expressing empathy and cooperation (Quinones et al. 2017).Toddlers use pointing gestures to communicate, for example, to indicate where a toy is hidden (Kachel et al. 2018). However, researchers have found that peers do not value all forms of social expectations such as those expressed through the pointing gesture (Kachel et al. 2018).

In seeking to understand toddlers' ways of participating and engaging with each other, the visual data presented in this chapter in narrative form invites the exploration of toddlers' imaginary play dance. Cheeseman and Sumsion (2016, p. 276) suggest we can view infants' and toddlers' learning experience as an 'invitation to learning' and call on educators to give greater consideration to the possibilities of toddlers' shared play and ways of being together. This chapter extends an invitation to think more about imagination and how it develops in toddler peer play.

The following research question guides this chapter: *How do toddlers develop their imaginary play in a peer group?* The case example is analysed using a cultural–historical theoretical approach to further our understanding of the complex nature of toddlers' imagination.

6.2 Cultural–Historical Theory

Cultural–historical theory provides an approach to examining toddlers' imagination and play by accounting for human relationships. Children's imagination continues to develop throughout life, and is enacted through a very complex process (Vygotsky 2004). Imagination is a new form of consciousness in human activity (Vygotsky 1966/2016). Vygotsky's (2004) proposition of the full cycle of imagination is completed when imagination is embodied or crystallised. Imagination depends on everyday experiences, needs and interests, and is situated in time and in a specific culture and environment. Vygotsky (2004) refers to imagination as the image or 'picture we have drawn' (p. 41) to explain that the product of imagination stems from reality. Imagination transforms our personal drives and affective aspirations. It is creative and actively transforms into what is imagined (Vygotsky 2004).

In addition, Zittoun and Rosenstein (2017) suggest that the process of creating everyday experiences in a setting provides an imaginative exploration of present possibilities and even impossibilities that might occur.

Vygotsky's (1966/2016) cultural–historical theory traditionally considered the young child's world of play as being guided by imagined situations, and the creation of rules and roles that included behaviours and actions that might be acceptable to the play situation. A child's play echoes elements of previous experiences and is a 'creative reworking of the impressions [the child] has acquired. [The child] combines them and uses them to construct a new reality; one that conforms to [their] owns needs and desires' (Vygotsky 2004, pp. 5–6). Imaginary situations always have rules that are created in the course of play and the actions that are executed match the rules and roles. Play is a collective activity where children are able to be inside and outside an imaginary situation: taking two positions simultaneously (Kravtsova 2014; Kravtsov and Kravtsova 2010). For example, crying like a hospital patient (inside) and planning the hospital setting (outside). In play, the child *acts* with intentions and makes sense of their play as they perceive and experience the world (Kravtsova 2014). The child creates an imagined situation with which they are familiar in real life in play (Kravtsov and Kravtsova 2010).

In particular, in image play or imaginary play, the child establishes a role or a character that they identify as 'play for one's self' (Kravtsov and Kravtsova 2010, p. 37). The child creates their own image of something with which they are familiar and with which they are able to identify. By identifying with this image, the child makes sense of their personal position relating to who they are in reality, thereby taking a new position in play (Kravtsov and Kravtsova 2010). Imaginary play forms part of an initial point for all children's play. This is where the child is inside an imaginary situation identified by an object or character in imaginary play (Fleer 2010).

Winther-Lindqvist (2009) also notes that 'playing involves rules as well as pretence' (p. 1) and rules are important to examine the everyday life of peer-group play. Children identify each other's interests or motives in peer groups, and share a sense of belonging in their peer-group life (Winther-Lindqvist 2012). Educators are important in developing toddlers' collective knowledge, which enhances their imagined play narratives (Li et al. 2016). Toddlers are able to relate affectively with peers when they engage in imaginary situations and actions in shared play (Quinones et al. 2017).

6.2.1 Collaboration

Contemporary researchers are widely engaged in developing better understanding of the role of collaborations, intersubjectivity and shared play in early childhood learning (Anderson 2018; Edmiston 2008; Howes 2011; Trevarthen and Aitken 2001). Anderson (2018) proposes that there is great significance in understanding reciprocity when children engage with their peers by examining the choices they

make to engage or otherwise. Anderson (2018) notes that in spontaneous and/or free play, young children actively express their intentions and wishes and bring their own unique set of engagement and entering-the-play strategies. Fleer's (2015) work on play worlds suggests paying attention to imaginary situations that are based on stories and fairy tales where children and educators can engage in collective role-play.

Children's interactions are developed through collaboration and negotiation (Mejia-Arauz et al. 2018). Different cultural patterns suggest that collaboration includes 'finely tuned coordinated moves by which the participants contribute as an ensemble to the activity' (Mejia-Arauz et al. 2018, p. 119). Collaboration also involves participants building common ground and using nonverbal and verbal communication to contribute to the course of the interaction in a shared activity. Mejia-Arauz et al. (2018, p.119) also refer to 'fluid collaboration' as people engage in interaction patterns that bring synchrony and rhythm to their active behaviours.

It is also important to account for the child's perspectives in peer interactions. In our research, the examination considers children's perspectives and the creation of their cultural and living worlds (Nilsson et al. 2017). Children's wellbeing and happiness are produced when they socially interact, play and explore, and through these social relationships it is possible to examine children's agency, that is, their choices and self-chosen activities (Seland et al. 2015). A sign such as a child's hand reaching out to another child's hand may indicate an offer or gift of self-choice to join the activity. A sign such as this can organise the individual's own behaviour through another person (El'konin and Vygotsky 2001). Lave and Wenger (1991) brought early attention to the 'view that agent, activity, and the world mutually constitute each other', and a decade ago, Rogers and Evans (2008) urged a reconceptualisation of space, organisation and role-play, so that they could be 'seen from the child's perspective' (p. 118).

Using a cultural–historical approach for toddler research broadens the perspective of theoretical observation in viewing the case example. This broadening occurs when we bring the cultural dynamics of toddler relationships, imagination and use of space into a more embodied, collective and researchers' collaborative view. In the context of this research, engaging with a collaborative view increases the likelihood of creating a more flexible and expansive account of toddlers' participation in play.

6.3 Methodology

A visual narrative methodological approach involved studying toddler's everyday activities in long day care centres (Li et al. 2016). Video observations provided an important method for following focus children for long uninterrupted periods.

Visual methodology involves selecting a video clip, to allow a "closer visual examination" of infant and toddlers movements throughout their day (Ridgway et al. 2016, p. 2). Researchers can then carefully select video clips for detailed and careful analysis. Then, a visual narrative is created from video clip in the form of screen capture snapshots.

6.3.1 Sample

As part of an ethically approved research project titled "Studying Babies and Toddlers: Cultural Worlds and Transitory Relationships" aimed to investigate toddlers' cultural worlds and transitory relationships. The wider study sample was conducted in two different long day care centres and involved six focus families in Melbourne, Australia with children under the age of three. Informed consent was obtained from all families. All the participating toddler's names have been kept anonymous.

6.3.2 Data Generation and Analysis

The wider project involved 60.5 hours of video observation generated by the researchers. Seven visits were made to two focus long day care centres. Silvia was filmed three times for seven hours over a period of six-months. The focus was to tracked the focus children with a video camera for an entire day, with only one researcher filming one focus child. The case example used for this research, the video camera was focused on Silvia. The case example was selected because it reveals information about toddlers' peer play relations over a long period (30 minutes), and involves minimal supervision of the educator.

The project that aimed to critically interrogate and examine the everyday life of infants and toddlers through multiple perspectives to the analysis of the visual data. In studying peers actions, creating a methodology that can be blended with a cultural–historical theoretical frame of reference provokes and challenges the broader reading of meaning around the child's participation. Using collaborative visual narrative methodology creates a detailed, refined, dynamic and rich presentation and re-presentation of the qualitative data, the reality and authenticity of the toddler's context and activity is created through the three researchers' interobserver reliability.

The layered analysis of the visual data meant viewing, re-viewing and coming to agreement between the three researchers. The variations of perspectives through a collaborative approach enriched the data analysis. The video data were planned to provide the three researchers with a collaborative opportunity to unite their different understandings, interpretations and cultural perspectives (Quinones et al. 2017; Ridgway 2018; Ridgway et al. 2016).

The case example involves a group of toddlers, Silvia, Emma, Isla, Cynthia and Harry. All were aged two years, except Isla, who was the oldest peer at three years of age. The case example presents a synthesis of toddlers' dance play. In our research context, the educators took the role of supervising toddlers while the educators undertook preparations for Mother's Day were occurring. The following section provides details of how this dance play was initiated by the toddlers.

6.4 Case Example

The case example involves a group of peers dancing and holding hands. This was a playful dance initiated by the focus toddler (Silvia) with a group of peers. The playful dance occurs in the afternoon of a special event planned for later in that day for Mother's Day. The mothers has been invited that day for a special afternoon tea. The dance occurred before the Mother's Day preparations were made.

The educator is playing recorded Wiggles (Australian children's music group) music in the children's story-time meeting space. Wiggles music is very popular with children in Australia, and is familiar to young children. The meeting space is in the corner of the room (away from through traffic), which gives the young children an opportunity to freely dance and sing. A larger group of eight toddlers comes into the space and begins jumping, dancing and singing to the music 'Hot potato'.

Silvia initiates a jump and pretends to fall down after the jump. This physical dance movement is accompanied by Silvia's loud laughing sounds. The educator leaves the small corner space where the toddlers are jumping and dancing. Another toddler in the group named Ric starts moving his feet and Silvia tries to imitate the movement. She moves closer to her peer Ric, and the other toddlers become excited about listening to the song, whose lyrics are saying, 'Come on; let's jump'. All the group of ten toddlers are now moving freely in and out of the meeting space. They are experimenting with movement to the music and shouting, 'dance, hop, hop' (Fig. 6.1).

The small transitions in the daily life of the LDC are evident in the ways the peers danced and experimented with movement. The toddlers' relations with their world of the dancing corner, music and peers unite as they freely move in and out of the meeting corner space. Silvia appears to enjoy this space as she remains there for a long period (thirty minutes). Eventually, three minutes after, Silvia and an older toddler named Emma are on their own together in the space.

The educator asks them, 'What song would you like to hear?'

The sequential images show Emma dancing like a ballerina wearing a tutu, and Isla following Emma. The tutus were brought from home. We can imagine what wearing a tutu might mean from the toddler's perspective. That is, the tutu is a cultural artefact favoured by toddlers that adds to playing the role of a ballerina.

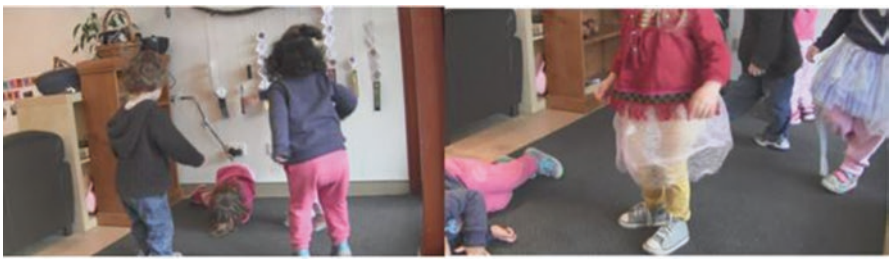

Fig. 6.1 Peer group experimenting with dance movements

Silvia is jumping excitedly. She looks carefully at Emma, who is dancing in her tutu. In an affective gesture, Emma holds her hands out to Silvia as an invitation to dance together.

Silvia happily mumbles, 'Dance with Emma!' Emma (Fig. 6.2) accepts the cheerful invitation made by Silvia to dance.

When carefully watching the video of the peer interactions that follow (Fig. 6.3), we notice that each toddler (Silvia and Emma) demonstrates a different intentions. For example, each of Silvia's movements are about speed. Silvia holds hands with Emma, who in contrast, is focusing on executing more delicate dance moves (Fig. 6.3). Silvia laughs and is smiling (Fig. 6.3). Emma is smiling back at Silvia and enjoying holding hands. Emma shows Silvia a new dance-movement technique, and uses her hands to cross over like a bridge. The educator is observing Silvia and Emma dancing, and when they cross over each other, the educator applauds and says, 'Bravo!'

Silvia and Emma continue dancing, and this time Emma pretends to fall down like Silvia did before. She then comes closer and holds hands with Silvia again while she is laying down on the floor. Silvia stands up. This time they do not hold hands but Emma starts doing pirouettes, twirling with turning around movements and Silvia follows (see Fig. 6.4).

The toddlers also start turning around in a circle with synchronised movements.

Fig. 6.2 Holding hands—Emma and Silvia

Fig. 6.3 Silvia learning new dance moves from Emma

Fig. 6.4 Peer joyful dance between Emma and Silvia

Fig. 6.5 Emma and Silvia falling down

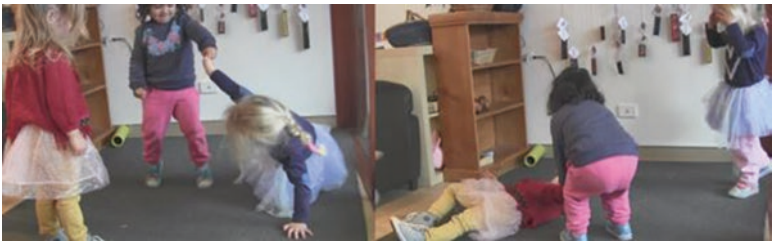

Fig. 6.6 Silvia holds hands with Emma and helps new peer Isla

Silvia tries to hold hands again with Emma; however, as the images show (Fig. 6.5), Emma avoids Silvia, and pretends to fall down. Silvia also falls down and stays on the ground for a moment. Emma then comes closer and tries to help her up. Silvia and Emma continue this dance by twirling and jumping together. Emma pretends to fall down again and Silvia holds her hand to help her stand up, as Emma had done for her (Fig. 6.5).

A new girl named Isla appears in the now dance-play area, and observes their interaction. Isla is wearing a tutu like Emma. Isla is keenly observing Silvia helping Emma (who is on the floor), and then Isla pretends to fall down (Fig. 6.6), and looks towards Silvia for help. Emma also tries to help; however, Isla gets up by herself. The three begin to twirl around—Silvia smiles and laughs. She observes Isla and Emma twirling too.

Fig. 6.7 Peers Emma, Silvia and Isla in synchronised group dance and movement

Fig. 6.8 Peer group helping new member Cynthia

Isla enters the dancing game that includes holding hands, moving, twirling and falling down. Isla is now helping Silvia and Emma to get up when they pretend to fall down (Fig. 6.7).

Another girl named Cynthia joins in, and also pretends to fall down; both Emma and Silvia helps Cynthia to get up by holding hands. Isla then joins in Silvia and Emma to help Cynthia stand up for the second time. As they help Cynthia, this creates the opportunity for the entire peer group to hold hands together (Fig. 6.8).

A toddler named Harry also joins the group; however, he participates and enters first by observing and noticing what the other toddlers are doing. The peer group do not form a full circle. They fall together in a line. Silvia helps Emma get up and they finally form a circle. The music becomes faster. Emma, Isla and Silvia make a circle, and include Harry by pulling him in, and they holds hands with Emma (Fig. 6.9). Emma shows Harry how to fall down by falling down herself, and she shows Harry how to dance and hold hands.

Emma asks Harry: 'You want to dance?'

They are now all dancing in small groups, enjoying the experience of dancing together and laughing when they fall down. The group becomes even larger. They keep jumping and moving at a faster speed. After two minutes, Harry, Isla, Emma and Silvia become a whole group holding hands together.

Harry, Isla and Emma are holding hands together. Silvia says (Fig. 6.10), 'Isla, my hand?' She looks at Isla and asks, 'Hold my hand?' Silvia then jumps, holds hands and they jump together. Silvia moves and Isla, Harry and Emma hold hands together and continue with falling down. The dance play finishes when the educator tells the toddlers it is time to pack up, and the toddlers look disappointed.

Fig. 6.9 Harry joins in with Silvia, Emma and Isla

Fig. 6.10 Group dance play

6.5 Discussion

This section presents a discussion on toddlers self-image play, entering each other's imaginary situation and the use of coordinated bodily actions to create a sense of belonging to the peer group.

6.5.1 Silvia and Emma Self-Image Play

The dance play described is an example of the complexity of toddlers trying to align their own imaginary play to joint play. Silvia and Emma bring their own familiar and real-life experiences to this dance play (Kravtsov and Kravtsova 2010). Silvia and Emma identify their imaginary play differently, and bring their own positions to the shared play. Silvia pretending to fall down and Emma dancing like a real ballerina.

Silvia identifies with the joyful actions of jumping and pretending to fall down in this dance play (see Fig. 6.5). She identifies with a familiar experience of falling down to imagine a new play action. Silvia and Emma represent their unique contribution to the imaginary play created with peers. In contrast, Emma's self-image is imagining herself as a real dancer, identifying herself in the situation by using a familiar object such as a tutu.

These familiar situations involve toddlers' everyday experience, for example, Emma attending dancing class and Silvia enjoying playing 'Ring Around The Rosie' that was later confirmed by educators. These everyday experiences might influence toddlers' shared imaginary play.

Silvia and Emma learn from each other's self-image play. For example, Emma shows new dance moves to Silvia by flipping (Fig. 6.3) and twirling (Fig. 6.4). Silvia shows Emma a dramatic movement by pretending to fall down (Fig. 6.5). Their imaginary dance becomes a shared peer play as they hold hands while dancing in a circle.

6.5.2 Peers 'Invitations' to Enter Imaginary Situations

As discussed, imagination is a new form of conscious human activity that develops through life (Vygotsky 2004). Everyday experiences provide an exploration of possibilities (Zittoun and Rosenstein 2017), and play requires the creation of an imaginary situation (Vygotsky 1966/2016). In the case example, the educator provides an opportunity for free exploration by toddlers.

The open space and music creates an atmosphere for exploration of what becomes possible. The qualities of this space provide the creation of an imaginary situation, and the freedom to create a new imagined reality by the group of toddlers. Peers begin with exploration of dance movements (e.g flipping, pirouettes, falling) by using their bodies (Fig. 6.1). Exploration provides an opportunity for peer interaction, to explore choices and create culture (Nilsson et al. 2017). Free exploration is an opportunity for imaginary play exploration.

Previous experiences are important for the realisation of imaginary play (Vygotsky 2004). As noted by Vygotsky (2004), play echoes elements of previous experiences, and the child creatively reworks these elemental impressions to construct something new according to their needs and desires. In the case example, Silvia and Emma bring their previous experiences to their joint play, and create a new imagined reality together as peers. Silvia enjoys jumping; she also invites peer Ric to jump: 'Come on; let's jump'. Emma is wearing a tutu, which transforms her into the role of a dancer, and she dances with Silvia. A toddler's invitation (e.g. holding hands) is important for the realisation of imaginary play with an interested peer. Silvia observes and learns from Emma's dance movement (e.g. cross over Fig. 6.3 and pirouettes). Emma observes and learn from Silvia to fall down and helping a peer (e.g. Fig. 6.5). In an affective gesture, Emma holds Silvia's hands, and this provides an invitation to dance together (Fig. 6.2). Toddlers' invitation to enter each other's imaginary situations involves learning about each's others interest and creatively combining a new imagined reality, together.

In the case example, holding hands and pretending to fall down are part of the imaginary situation that is collectively agreed upon by peers Emma and Silvia. Imaginary situations include actions that are acceptable to the play situation (Vygotsky 1966/2016). Over the course of the game, different needs, desires and

intentions are expressed that invite toddlers to enter and be in the imaginary situation. The embodiment of actions occurs in dancing (Fig. 6.4), holding hands (Fig. 6.3) and smiling (Fig. 6.3). A group of peers forms among Emma, Silvia and Isla, and they create a synchronised joyful dance (Fig. 6.7). The joy is particularly seen in Silvia's joyful smiling (Fig. 6.3). Toddlers express what they are imagining through the embodiment of their actions, rather than by verbally expressing their intentions of how to play. This leads to a complex form of participation because peers Isla, Cynthia and Emma must keenly observe their peers Silvia and Emma to join the play and understand the rules, all while joyfully dancing. These toddlers' imaginary situations are embodied though actions and keen observation of each other's dance movements, and each new participant must acquire understanding of the leading actions and rules in the play—falling down, holding hands and helping peers as they fall down. Emma and Silvia's collaborative imagination includes creating a circle, twirling around and falling down.

This dance play also creates some implicit rules for peers helping each other and falling down to re-join the circle of dance movements. It might be possible that each peer is individually imagining; Emma is imagining being a real dancer and Silvia is imagining really falling down or flying, the movement that falling down provokes. Each individual peer comes to a shared imaginary situation by his or her synchronised movements and interactions, and collaboration in an ensemble activity (Mejia-Arauz et al. 2018).

6.5.3 Participation Through Bodily and Coordinated Actions—Entering an Imaginary Situation

Play is a collective activity where children are inside and outside the imaginary situation (Kravtsova 2014). Play is a collaborative activity in which 'fluid collaboration' is experienced (Mejia-Arauz et al. 2018). Adding to collaboration, when imagination is shared by peers, participation becomes more complex, and involves sophisticated bodily actions that allow peers to enter the imaginary situation of the group.

This imagined collaborative dance allows peers to coordinate their actions inside and outside an embodied imaginary situation. In the case example, embodied dance play is a collaborative play because peers enter into the dance play. The embodied imaginary situation includes peers being inside the dancing, then flickering outside the imaginary situation to help peers, and coordinating their actions in nonverbal ways to help each other (Mejia-Arauz et al. 2018). Peers Silvia and Emma have created a synchronised and coordinated embodied imaginary situation. This embodied imaginary situation includes creating a dance circle of movements by holding hands. Holding hands symbolises the collaborative participation of peers, a bodily action that signifies entering and being in an imagined situation. For other toddlers to enter and participate in the dance play, they first need to observe keenly by

noticing and paying attention to how the dance is played. Isla enters the dancing play initially by observing, and then pretends to fall down by helping Silvia. Isla then helps her peer Cynthia to stand up.

The peer group formed by Silvia, Emma and Isla help Cynthia as she falls down (Fig. 6.8). The act of helping not only provides an affective form of relating to each other but also symbolises the value of helping one another. Emma helps Silvia (Fig. 6.6), Silvia helps peers Isla and Emma (Fig. 6.6), and peers Silvia, Emma and Isla coordinate their actions, without being asked, to help Cynthia (Fig. 6.8). As the play develops, Harry joins in and holds hands with Emma. Emma shows Harry needs to help her when falling down (Fig. 6.9). Further, the group of peers affectively relate together as they engage in their imaginary situation by dancing joyfully (Fig. 6.10).

As the group grows and the group members become immersed in each other, verbal communication is used as a resource for coordinating and aligning their actions. Thus, Silvia asks Isla to hold her hand as a sign of reaching for help to be part of the dance circle. Peers are able to engage in interactional patterns through dance as they coordinate their actions and maintain the rhythm by dancing together. The peers create a new imagined reality by reciprocating their actions with keen interest and by entering-the-play strategies as imagined and created by Emma and Silvia. Emma and Silvia have previously established the affective actions, through which other peers can engage, collaborate and create a sense of belonging with the peer group. As explained by Winther-Lindqvist (2012), this sense of belonging is established when the members of the peer group identify each other's interests or motives. This new imagined reality is realised by freely entering a dance of holding hands that brings "we-ness" and greater unity to the peer group.

6.6 Conclusion

This chapter examined toddlers' spontaneous dance play in detail, both contextually and conceptually. When peers play together, their imagination is enriched. The context of the corner space of the LDC room provides an encouraging setting for the toddlers' imaginary peer play. The corner space is light filled and has soft floor coverings and a CD player; this encourages the toddlers bring together their imagination and capacity to express themselves through affective interaction and bodily movement. Holding hands and reaching out to peers are familiar early experiences of being together with others (Singer and de Haan 2007).

The conceptualisation of imaginary peer play (using the case example of holding hands and dancing) holds many important interpretative possibilities, and reveals the theoretical opportunity of building further concepts to extend understanding of how knowledge from the toddlers' perspective can be embraced in moments of cultural, social, collective and individual interactivity.

Understanding the complex nature of participation in play has implications for educators. First, it is an important for toddlers to be given time to notice, observe

and keenly pay attention to what others are doing as part of their learning experience. Secondly, toddlers' everyday worlds provide a space for exploration in the LDC centre. Such experiences are seen through Emma dancing with cultural affordances such as the tutu and the Wiggles song. Finally, toddlers' play includes a unique fluid collaboration where coordinated imaginary play is embodied in body movements, nonverbal and verbal communication, and the creation of an imaginary situation. From the toddlers' perspective, imaginary peer play involves an appreciation of, and enthusiasm for, being together that creates a sense of belonging to the group. Playing in a group involves being fully aware of the other group members' intentions as discussed by Trevarthen and Malloch (2018).

Implications for educators show the important role of non-verbal communication and imaginary actions. This research strongly shows that toddlers are gifted in learning through non-verbal means (e.g. pointing, gesturing, and bodily) with peers. Educators can keenly observe toddlers play and the complex imaginary situations they create together. Then, educators can plan for more exploration of peer play and value imaginary play dance as part of their curriculum.

This research has demonstrated how musicality and a small corner space in the room help peers to experiment with dance play. More research is necessary to understand the complex imaginary play situations that are generated spontaneously by toddlers, and how educators can support toddlers further in creating complex and elaborate peer imaginary situations. The idea of toddlers' imaginary peer play is an invitation for educators to respect toddlers' perspectives, including their playful body actions and musical dance creativity.

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Chapter 7
Creating and Maintaining Play Connection in a Toddler Peer Group

Annukka Pursi and Lasse Lipponen

7.1 Introduction

Peer relations and joint play in toddler peer groups are well acknowledged, described and valued in recent early childhood education (ECE) research (Harrison and Sumsion 2014; Johansson and White 2011; Li et al. 2017; Rayna and Laevers 2011; White and Dalli 2017). Empirical video-observation studies have produced detailed descriptions of joint play themes and patterns in toddler peer groups (e.g., Engdahl 2011; Ridgway et al. 2016). Studies have also informed us of the playful routines that toddlers produce and share in interaction with peers (Corsaro and Molinari 1990; Løkken 2000), and thereby constructed knowledge of toddler's own peer play culture in ECE settings.

For toddlers, attaining and sustaining joint play interaction with peers calls for a rather sophisticated use of a range of interactional resources and practices, such as focusing and sharing attention, as well as observing, emulating, repeating and co-coordinating simple movement patterns, vocalizations and gestures in concert with each other (Engdahl 2011; Farver 1992; Løkken 2000; Stambak and Verba 1986). Also, managing disputes, problem conduct (e.g. pushing, hitting, hair pulling, taking toys from others) and other interaction trouble (e.g. trouble with availability, trouble with understanding) in peer groups demands special kinds of social competences such as emotion regulation and ability to re-establish shared understanding (Kidwell 2009 2013; Singer and Hännikäinen 2002).

A large body of research has investigated the aforementioned interactional resources and practices as characterizations of toddlers' individual competences during play activities. However, considerably less attention has been given to the interactional organization of these play competences *in situ* in a multi-party context

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(Björk-Willén 2007). This kind of *sequential understanding* in multi-party play situations is important in order to learn more about when, how and in what ways toddlers use these competences. For example, (1) how they actually maintain the progression of their joint play in the moment-to-moment unfolding flow of peer interaction, (2) build togetherness in their play activity, and (3) secure solidarity in their play group (Gunnarsdottir and Bateman 2017). The present study contributes to this line of research by analyzing systematic interactional features of joint play activity among three toddlers during one full day-care day. More specifically, we attempt to answer the following research questions:

How do the three focus children create and maintain their joint play interaction?
How do the three focus children build sustained co-participation in their joint play during the day?

7.2 Context of the Study and Creation of Data Sources

The article offers an analysis of a full day-care day from the perspective of three toddlers and their joint play activity during the period. With this particular focus, our aim is to explore in detail the complexities of peer interaction and explicate the interactional strategies of the focus children in making the play situations what they become. Our primary data consist of 28 videotaped sequences of dyadic and triadic joint play between the focus children. This video corpus is part of a larger ethnographic doctoral study examining play culture, and especially adult's and children's joint play activity in a Finnish toddler classroom.[1] Table 7.1 outlines the data and the creation of data sources in more detail.

At the beginning of the study, the teacher of the group informed all the families about the proposed video-observation research and their right not to participate. In accordance with contemporary ethical guidelines at University of Helsinki (Finnish Advisory Board on Research Integrity), informed consent was sought from parents, ECE practitioners, the director of the daycare center and municipal officials. During the data collection period, the researcher was *a non-participant observer*, intending to disrupt the everyday life of the group as little as possible (Løkken 2011). As the video-observation method and long-term fieldwork raised specific ethical considerations, careful attention was paid to the situated ethics (for a more detailed description of ethical considerations, see Pursi and Lipponen 2018).

[1] This particular toddler classroom is a municipal group-care setting for 13 children under the age of three with one kindergarten teacher, two nursery nurses and one personal assistant for a child with special needs. The day-care center is located in an outer suburb of Helsinki, Finland.

Table 7.1 Creation of data sources

	Fieldwork 2015-2016	Single case analysis April 19, 2016 9:13–9:17 a.m.	Full day video-observation April 19, 2016 8:00 a.m–3:45 p.m.	Joint play activity between three toddlers April 19, 2016
Corpus of data	**150 h of video-observations** (38 days of full-day observations)	**3 min 34 s** joint play activity between three toddler peers during small-group playtime	**2 h 40 min 05 s** Video-observation	**34 min 09 s** A total of 28 joint play sequences between three toddlers. Selection of all the dyadic as well as triadic playful encounters.
Analytical questions	What is going on? Is there play in the interaction? If yes, the camera records it.	How is joint play activity created and maintained during the selected sequence?	What happened before the selected case and what followed after it between the three toddlers?	How is joint play activity created, maintained and re-established during the day between the three focus children?
Sequential approach	Sampling for this study: Sequences in which at least three toddlers are mutually engaged in joint play activity without adults involved.	Verbal descriptions, detailed transcripts and sequential analysis of joint play activity (Sequences 2, 3, 4, 5)	Sampling for the analysis: Sequences in which the three focus children are mutually engaged in joint play activity without adults involved.	Narrative descriptions, detailed transcripts and sequential analysis of joint play activity (a sub-corpus of seven sequences is analyzed in this paper)

7.3 Ethnographic Context of Peer Play Activity

The three toddlers in our study were Venla (1 year 6 months old girl), Niilo (1 year 9 months old boy) and Ella (2 years 2 months old girl).[2] During the data collection period, they had been together in the same toddler classroom for three months. When observing different kinds of play situations during the field work (joint play between peers, play alone, parallel play, play between adults and children), some weekly occurring play patterns gradually began to catch the researcher's attention. Once a week 3–4 children (typically the three youngest and sometimes one older child as well) had an opportunity to stay indoors for a longer time (20–30 min) than usual with one adult, while the others began their transition to outdoor activity. During that small-group playtime, guided play was organized by an adult (typically physical activity play involving large play objects such as ramps, tunnels, mattresses and sofas), and sometimes this small group had an opportunity to play freely without adult guidance.

[2] All the names are pseudonyms.

What made these situations (both guided play as well as free play) special was the intensity and longevity of joint play between the peers (as seen in Chap. 2). This small group had the whole classroom space to themselves and there were no competing activities in the surroundings. The selected day for the present analysis was one of these days when the three toddlers Venla, Niilo and Ella remained indoors and were able to play freely without adult guidance and without presence of the whole group.

7.4 Data Analysis

In our analysis, we drew mainly on the sequential perspective of conversation analysis (CA) and its treatment of joint activity, co-participation and play (Bateman 2015; Goodwin 2007). In CA analytical interest focuses exclusively on those aspects of play that the interactants make publicly available. The basic assumption is that play actions are lodged in the sequential organization of unfolding interaction and therefore cannot be examined in isolation from their interactional context (i.e. previous, current and following turns at talk/embodied interaction). The questions guiding our analysis concerned understanding how play actions are constructed and responded to *in situ* by relying on different verbal and non-verbal interactional resources and turn-taking practices (Bateman 2015; Goodwin 2000). We illustrate our analysis by combining verbal descriptions, frame grabs and transcriptions.

Our observations indicated that the joint play among our focus children was fragmented and organized in short segments of dyadic or triadic interaction (14 s–4 min 16 s). The observations also revealed that interruptions and re-establishments of joint play were common features of peer play among the children. Thereby, a relevant scope of our analysis was the sequences in which participants created and maintained their joint play (Sect. 7.4.1), managed to re-establish joint play after interactional problems (Sect. 7.4.2) and repeated significant play actions over and over again during the day (Sect. 7.4.3). The backbone of our analysis was one play episode during the free play time in the morning when Ella, Niilo and Venla had a chance to stay indoors for a longer period of time while the others began their transition to the outdoors. This particular play episode provided a great opportunity to elaborate on the triggering event of triadic play, progression of the sustained joint play (a total of 2 min, one of the longest sequence of the triadic play) as well as problem-remedy sequences, since these all occurred in quick succession.

In the following sequences, transcription conventions are used based on Jefferson (2004).

[	Brackets indicate overlapping talk/nonverbal actions
↑↓	Arrows indicate shifts into especially high or low pitch
:	Sound or nonverbal act before colon is stretched
WORD	Loud volume
°word°	Quiet voice relative to the surrounding talk
£	Smiley voice

(.) Micropause
(( )) Words in double brackets are descriptions of nonverbal actions.

7.4.1 *Creating and Maintaining Play Connection in the Peer Group*

Through *play signals* (Bateson 1976), players communicate their playful stance to others in order to initiate and maintain joint play activity. *Play connection* (Pursi and Lipponen 2018) occurs between participants when the recipients of the play signal display *alignment* with the play activity and *affiliation* with the player's stance. According to our use of analytical terminology, affiliation relates to the affective or action level (e.g., emotional display, play actions), and alignment to the structural level (e.g., an attentional display, body orientation, gaze direction) of joint activity (Stivers 2008). To reveal the systematic ways in which joint play activity was managed between our three focus children during the day, it was logical to initially look at how the play began. This was done by discerning the very first play signaling sequences and identifying how the focus children relied on different verbal and nonverbal interactional resources in order to (1) make play actions observable and recognizable to one another and (2) build alignment and affiliation (play connection).

7.4.1.1 Sequence 1: Dyadic Play Connection Between Ella and Niilo

The very first sequence of joint play (Table 7.2) emerged during the free play time after breakfast. At this point Ella began to move around the classroom, calling for Niilo (line 1) and the following brief moment of play connection was co-produced.

Ella initiated contact by calling for Niilo by name and in this way demonstrated her interest in interaction with Niilo in particular. Niilo's response in line 2 (approaching and smiling) displayed a positive emotional stance (affiliation) towards Ella. When Niilo got closer, his smile escalated into enthusiastic bursts of laughter. This exaggerated positive emotional stance could be interpreted as a play signal. The interpretation becomes validated in line 3 with Ella treating Niilo's response as an invitation to joint play. She aligned and affiliated with the idea of joint play by producing her own playful contribution. By smiling, turning around very fast and beginning to run in the opposite direction she was making a non-verbal suggestion of a chasing game. Niilo aligned with Ella's contribution and while running maintained the play connection with short bursts of laughter. Ella, on the other hand, maintained the play connection by checking behind her a few times while running to see if Niilo was still following her. Interruption of joint play occurs as Ella produces an explicit request for joint play with cars (line 6) and Niilo misaligns by orienting to the boy nearby. Lines 6–7 together show *a trouble with availability* (Kidwell 2013) from Ella's perspective as Niilo engages in another play frame and in this way ignores Ella's play request.

Table 7.2 Sequence 1: Dyadic play connection between Ella and Niilo

	Transcription and verbal description of interaction	Sequential analysis
1 Ella:	HEI NII:LO (.) NIILO:: *HEY NII:LO (.) NIILO:: ((runs around the classroom and looks for Niilo))*	**Attracting attention**
2 Niilo:	*((pushes a toy train and approaches Ella, smiling with mouth wide open))* [*((while getting closer starts to laugh))*	**Play signaling**
3 Ella:	[*((smiles, quickly changes direction and starts to run away from Niilo))*	**Play connection: Alignment and affiliation with Niilo's playful stance**
4 Niilo:	*((follows Ella by pushing the train and simultaneously produces short bursts of laughter))*	**Play connection: Alignment and affiliation with Ella's contribution**
5 Ella:	*((turns around and gazes at Niilo, continues running towards a smaller playroom and then throws herself onto the mattress))*	**Maintaining the play connection**
6 Ella:	Tule Niilo kultaseni (.) autoleikkiin *Come Niilo my sweetheart (.) to play with the cars*	**Verbal request for joint play**
7 Niilo:	*((approaches but then turns around and produces longer burst of laughter next to the mattress by facing towards the door where another boy is approaching and pushing a toy truck. Follows the other boy and leaves the playroom))*	**Misalignment: Interruption of joint play between Ella and Niilo**

7.4.1.2 Sequence 2: Triadic Play Connection Between Ella, Niilo and Venla

Re-establishment of joint play emerged 14 min after the first moment of play connection. At this point Venla also became part of the joint activity. Sequence 2 (Table 7.3 and Fig. 7.1) began to develop as Ella, Niilo and Venla met in a larger playroom. Ella was approaching the play area where Niilo was playing alone with a doll carriage into which he was gathering small balls and Venla was standing next to a half-open window looking outside and rubbing the window glass. While approaching, Ella first observed Niilo and then Venla. Play connection between participants was established by producing reciprocal smiles, short bursts of laughter and simple body movements.

Sequence 2 illustrates how the toddlers were competent in using gestures, simple body movements, smiley vocalizations and laughter to create and maintain play connection. Triadic play connection was constituted by delicately timed play signals (short bursts of laughter, lines 1 and 3) and aligning and affiliating responses (mutual gaze and smiling/smiling vocalizations, lines 2 and 4) and maintained with co-coordinated gaze shifts and joyful repetition of gestures (laughter, smiling, vocalizations) and simple body movements. What followed was a sustained shared play interaction in which the moving toddlers' bodies were the main creators and objects of the joint play. These observations are in line with prior research

Table 7.3 Sequence 2: Triadic play connection between Ella, Niilo and Venla

	Transcription and verbal description of the interaction	Sequential analysis
1 Ella:	*Haha ((pushes doll carriage and approaches Venla))*	**Play signaling**
2 Venla:	*((turns towards Ella and smiles, then continues rubbing the window glass while still facing Ella))*	**Play connection: Alignment and affiliation with Ella's playful stance (Fig. 7.1a)**
3 Ella:	*Haha ((starts to turn the carriage towards Niilo))*	**Play signaling**
4 Niilo:	*£A:::h ((gazes at and approaches Ella))* *[£ha:::h ((mutual gaze with Ella))*	**Play connection: Alignment and Affiliation with Ella's playful stance**
5 Ella:	*[Hahhahhuhhah ((gazes at Niilo with a grin))*	**Heightened moment of play connection between Ella and Niilo (Fig. 7.1b)**
6 Venla:	*[((intensively observes others with a smiling face and keeping a finger inside her mouth))*	
7 Ella & Niilo:	*((Ella and Niilo start to jump at the same time))* *[((while jumping they continue to produce short bursts of laughter))*	**Maintaining play connection**
8 Venla:	*[((picks up a rattle from the floor and then approaches others))* *[((jumps and shakes the rattle strongly with a smiling face))*	**Alignment and affiliation with Ella's and Niilo's playful stance**
9 Ella & Niilo:	*[((stop their movement and observe Venla))*	**Joint attention shift**
10 Venla, Ella & Niilo:	*((smiling, laughing and jumping together))* *((The triadic jumping is sustained for 10 s, then Venla throws her rattle away and shifts her attention to a baby doll on the floor and sits down, Ella and Niilo observe Venla's activity shift and then return to their joint jumping and laughing again))*	**Heightened moment of triadic play connection (Fig. 7.1c)**

describing how co-coordinated body movements and gestures are the core feature of playfulness during toddlerhood (*the playful quality of toddling style*, Løkken 2000).

If we look more closely how Ella's, Niilo's and Venla's joint actions were organized, we can see that their body movements were highly reciprocal and even synchronous (jumping in line 7), indicating embodied *attunement* and *heightened co-participation* (Sidnell 2009). With attuned and heightened moments of co-participation we mean intensive interactional sequences in which participants are displaying their shared playful stance in overlap (lines 7 and 10). Although these synchronous and reciprocal chains of triadic play actions were very brief (10 s) they can be seen as highly complex interactional accomplishments and meaningful signs of togetherness, sharing and friendship in peer group. These intensive moments constitute what Trevarthen and Delafield-Butt (2017) call a *non-verbal narrative,* the very first form of sustained joint play interaction with shared meaning and inter-subjective understanding among pre-verbal children in a multi-party interactional context.

Fig. 7.1 (**a**) Play connection between Venla (the girl next to the window) and Ella (the girl in the middle), (**b**) Venla witnesses play connection between Ella and Niilo (the boy in front), (**c**) Joint laughter and jumping constitutes triadic play

Sequence 2 also reveals how children with their reciprocal shifts of attention produce more subtle togetherness and *an interactional space* (Mondada 2009) for multi-party engagements. This interactional space is created by using coordinated gaze shifts as interactional resources. This is evident e.g. in line 9 with Ella and Niilo stopping their movement at the same time and shifting their gaze toward approaching Venla. This same pattern was repeated in line 10 when Venla threw her rattle away and shifted her attention to a baby doll on the floor and Niilo's and Ella's attention followed. It seems that through these joint attention shifts Ella, Niilo and Venla were attuning to each other's actions and in this way produced togetherness and sharing. By creating an interactional space for Venla to first participate in the ongoing play and then leaving it for other activities, Ella and Niilo demonstrated that they were engaging in joint play with Venla and not just between themselves.

If we compare the interactional organization in sequences 1 and 2 we can see that Ella was the initiator of the contact in both sequences. It is interesting to compare Ella's use of different interactional resources. In sequence 2, Ella was non-verbal with her play signaling. She was not producing verbal requests or proposals for collaboration as in sequence 1. Rather, she created a play connection *by simply beginning the activity* (Stivers and Sidnell 2016). This strategy seemed to be an effective way to engage Niilo and Venla into joint play. A wider corpus of empirical interaction studies supports these observations. Engagement in joint play is typically established and maintained between pre-verbal and verbal toddlers (Björk-Willén 2007) or between pre-verbal toddlers and adults (Bateman 2015; Pursi and Lipponen 2018) by "*doing play"* actions and participation, not by "*talking about play"* and participation. Whereas older children more often begin and maintain their joint play by talking about play and by using requests (e.g., Can you X?) or proposals (e.g., Let's X; How about X; Should we X) for activity collaboration (Stivers and Sidnell 2016).

7.4.2 *Problem-Remedy Sequences in Joint Play*

In this subsection we describe how Ella, Venla and Niilo managed to re-establish play connection after different kinds of interactional problems during the day. In our analysis we provide three examples of problem-remedy sequences (3, 4 and 5) and one example of a sequence in which interactional problems remained unsolved (sequence 6).

7.4.2.1 Sequence 3: Progression of Joint Play after Trouble with Availability

Sequence 3 (Table 7.4 and Fig. 7.2) is a continuation of the heightened moment of triadic play connection described above. After moment of shared jumping the progression of joint play was suspended with Niilo shifting his attention to the handle of his doll carriage, Venla sitting down on the floor next to a baby doll and toy washtub, and Ella starting to push her doll carriage. Re-establishment of joint play connection began to develop as Ella tried to contribute to the joint play by shifting her body and gaze towards Niilo and making 'funny' sound with her mouth (line 1, Fig. 7.2a). What followed was *trouble with availability* (Kidwell, 2013) as Niilo

Table 7.4 Sequence 3: Progression of joint play after trouble with availability

	Transcription and verbal description of interaction	Sequential analysis
1 Ella:	[*((turns her body and gaze towards Niilo and makes explosive and 'funny' sound by forcing air out of her mouth with tongue between lips))*	**Contribution to the joint play and attraction of other's attention (Fig. 7.2a)**
2 Niilo:	[*((briefly glances at Ella and then shifts his gaze back to the handle of his carriage))*	**Trouble with availability: Niilo misaligns with Ella's playful stance and play contribution**
3 Ella:	*((repeats the funny sound by increasing its force and duration))*	**First attempt to re-establish play connection by repeating and upgrading the same play action**
4 Niilo:	*((shifts her gaze to Ella, takes a deep breath and then produces a slow and deep exhalation without any sound))*	**Alignment with minimal affiliation**
5 Ella:	*Hah↑hah↑hah ((gazes at Niilo))* *↑Aijaijaijaijai ((closes her eyes and turns her face up to the ceiling))* *[°hahah↓° ((returns her gaze towards Niilo))*	**Second attempt to re-establish play connection by modulating the play action (Fig. 7.2b)**
6 Niilo:	[*((begins to jump))*	**Alignment and affiliation with Ella's playful stance**
7 Ella & Niilo:	*((shared jumping))*	**Progression of joint play activity**

Fig. 7.2 (**a**) Ella's contribution to joint play, (**b**) Escalated laughter as means to re-establish play connection

remained occupied with the handle of his carriage, only glancing quickly towards Ella before shifting his gaze back to the handle (line 2)

As we can see in lines 1 and 2, Ella's first attempt to contribute to the joint play did not re-establish the play connection with Niilo. In line 3 Ella increases the force and duration of her play action (blowing air out of her mouth more forcefully to produce a louder and longer sound). By *repeating* and *upgrading* the same play action she was trying to re-establish play connection (also see, Kidwell, 2013) and finally succeeded in attracting Niilo's undivided attention (line 4). Although Niilo aligned with Ella in line 4 by sharing a mutual gaze, he was not able to produce firm affiliation with Ella's play action (only a deep breath without a sound) and therefore the progression of joint play remained suspended. In line 5 (Fig. 7.2b), Ella produced a second attempt to re-establish play connection by returning to laughter, one of the significant gestures of Ella's and Niilo's previous joint play. This time Niilo instantly responded by jumping (line 6), another significant gesture of their previous joint play. As a consequence, the play connection was successfully re-established and the progression of the joint play secured (line 7).

If we elaborate on this sequence more closely from the perspective of remedial work, we can see that it took multiple turns and demanded a lot of interactional work from Ella to re-establish the play connection with Niilo. This complex chain of actions: (1) new play contribution, (2) misalignment (3) repetition of the play contribution, (4) alignment with minimal affiliation, (5) modulation of play actions, and (6) firm alignment and affiliation, demonstrates that Ella was not producing these funny sounds *to* Niilo in order to secure interactional alignment but rather wanted to produce them *with* Niilo as joint play actions and was therefore building sustained co-participation and sharing (alignment and affiliation). As Niilo did not respond by actually engaging in these play actions (perhaps because the production of these funny sounds was quite challenging from the perspective of motor control

for the somewhat younger Niilo), Ella redesigned her play actions so that Niilo would be able to actively participate.

Studies have demonstrated that adults also use this kind of *interactional calibration* in order to build sustained co-participation with toddlers in joint play (Pursi et al. 2018). The core features of interactional calibration in play seems to be the flexible and situational modulation of one's participation between stance leading (new play contributions), stance following (careful alignment and affiliation with others' play actions) and leading by following (building on others' play actions). Ella was flexible with these different entities, not restricting to one of them alone. She constructed and modulated her participation turn by turn in its interactional context in order to produce heightened co-participation with Niilo.

7.4.2.2 Sequences 4 and 5: Progression of Play after Problem Conducts

As our focus children's joint activity unfolded further we could observe another interruption of play connection in the form of problem conduct. Typically in toddler classrooms these problem-remedy sequences have to do with adults having children alter their problem conduct (e.g. pushing, hitting, hair pulling, taking toys from others) (Kidwell 2013). In these situations, adults undertake quite extensive work to secure and maintain solidarity in the group and to guarantee the progression of interaction. Our observations show how the children in our study managed these situations in their peer group. Sequence 4 (Table 7.5 and Fig. 7.3) demonstrates how Venla's problem conduct suspended the progression of play between all participants (lines 3-8).

Lines 3–8 reveal that trouble emerges in the interaction between Venla and Niilo, as Niilo at first resisted Venla's approach by vocalizing stressfully (line 4) and then repeated and upgraded his negative emotional stance display in line 8 when Venla took two balls from his carriage (line 7, Fig. 7.3b). Ella observed the development of this situation by shifting from laughing to a more serious emotional stance (Fig. 7.3a → Fig. 7.3b), by putting a finger into her mouth (Fig. 7.3b) and by frowning during Niilo's stressful vocalizations (lines 5, 9, Fig. 7.3c). Ella's responses to the situation indicate emotional stance shift from playful joy to empathic concern. Sequence 5 (Table 7.6 and Fig. 7.4) reveals how this problem conduct was managed by the participants.

Lines 1–7 reveal how Ella was able to produce successful solution to the interactional problem. Ella worked to re-establish play connection by producing small bursts of laughter while simultaneously approaching Venla. With these actions Ella was maintaining communicative concord and securing solidarity in the peer group, as she was marking Venla as a play companion regardless of the problematic conduct. A moment of remedy emerged as Venla cooperated and gave the balls to Ella (line 10) and Niilo found another activity (lines 9, 11) and in this way managed to overcome the disappointment that Vela's actions had caused. It seems that this problem conduct was small enough for our focus children to manage by themselves. Therefore, it provided an important training ground for how to manage interactional

Table 7.5 Sequence 4: Problem conduct during the play

	Transcription and verbal description of interaction	Sequential analysis
1 Venla:	[*((shifts her gaze to Niilo and approaches Niilo's doll carriage))*	**Activity shift**
2 Ella:	[hahhah hahhah ähah hah *((jumping and producing short burst of laughter, sustaining her gaze towards Niilo and Venla))*	**Attempt to re-establish play connection with Venla and Niilo**
3 Venla & Niilo:	*((both Niilo and Venla are now grabbing the inside of Niilo's doll carriage))*	**First trouble conduct (Fig. 7.3a)**
4 Niilo:	[*a::::::((stressful vocalization))*	
5 Ella:	[*((stops laughing, observes Venla and Niilo and puts a finger into her mouth with a slightly concerned facial expression))*	**Aligning and affiliating with Niilo's emotional stance display**
6 Venla:	*((picks up two balls from Niilo's carriage))*	**Second trouble conduct (Fig. 7.3b)**
7 Venla:	[*((begins to run away with the balls in her hands))*	
8 Niilo:	[A::::::::::::*((repeats and upgrades the display of stressful vocalization and simultaneously shifts his gaze to Venla))*	
9 Ella:	[*((gazes at Niilo with empathetic concern on her face, then shifts her gaze to Venla))*	**Ella's empathetic concern (Fig. 7.3c)**

Fig. 7.3 (**a**) First problem conduct, (**b**) Second problem conduct, (**c**) Ella's empathetic concern

problems and re-establish play connection in a peer group. However, this does not mean that these children were competent enough to solve all of their conflicts. The situation would have been very different if e.g. Niilo would have searched for an adult with his gaze or escalated his negative emotional display (e.g. by crying), therefore showing that he would not have been able to manage the situation by himself (c.f. Kidwell 2009 2013). In this kind of situation, Ella's and Venla's interaction would probably also have unfolded differently.

Table 7.6 Sequence 5: Progression of play after problem conducts

	Transcription and verbal description of interaction	Sequential analysis
1 Venla:	*((climbs onto the sofa with balls in her hand))*	**Problem conduct continues**
2 Ella:	[hah hah *((approaches Venla))*	**First attempt to re-establish play connection**
3 Niilo:	[*((observes Venla and Ella))*	**Alignment with Venla's and Ella's actions**
4 Ella:	↑hah↑hah (.)↑hah↑hah *((while getting closer, extends her hands towards the balls))* [°hah hah° *((tries to take the balls from Venla))*	**Second attempt to re-establish play connection**
5 Venla:	[*((smiles and pulls her hands back))*	**Alignment and affiliation with Ella's playful stance but misalignment with other actions**
6 Niilo:	[*((observes the situation))*	**Alignment with Venla's and Ella's actions**
7 Ella:	*((extends her face closer to Venla's face))* [*hihihihhahaijaijai*	**Third attempt to re-establish play connection (Fig. 7.4a)**
8 Venla:	[*((smiles with her mouth wide open))*	**Alignment and affiliation with Ella's playful stance (Fig. 7.4a)**
9 Niilo:	[*((shifts his attention to the carriage, grabs the inside of the carriage))*	**Misalignment and activity shift**
10 Venla & Ella:	*((Venla smiles and hands the balls to Ella; Ella receives the balls and turns away))*	**Moment of remedy (Fig. 7.4b)**
11 Niilo, Venla, Ella:	*((Niilo finds a plate from the carriage, approaches the home play corner and begins to make food. Venla returns to her previous activity next to the window. Ella begins play with the balls by tapping them together and walking around the room.))*	**Playing alone (Fig. 7.4c)**

7.4.2.3 Sequence 6: Interactional Problems Remain Unsolved

Sequence 6 (Table 7.7 and Fig. 7.5) reveals how efforts at remedial work sometimes fail. In this sequence joint play turned into trouble with availability and finally into wistful longing during afternoon free playtime

The sequential organization of Niilo's actions reveal that he was using multiple interactional strategies to signal to Venla that he was willing to continue joint play in a multi-party context. Niilo's first attempt to re-establish play connection was a combination of vocalization ("Ah::"), pointing and a sustained gaze toward Venla. As Venla misaligned by shifting her gaze toward other children nearby, Niilo then produced a second attempt by combining the vocalization ("Eh::"), pointing gesture and gaze shift from Venla to Ella (Fig. 7.5 b), as if to say: "Hey, our joint play is over here." As Venla was not responding, Niilo began to walk towards Ella, then stopped

Fig. 7.4 (**a**) Ella's remedial work, (**b**) Moment of remedy, (**c**) Progression of play

Table 7.7 Sequence 6: Interactional problems remain unsolved

	Transcription and verbal description of interaction	Sequential analysis
1:	*((Venla, Niilo and Ella playing with toy cars side by side))*	**Joint and parallel play (Fig 7.5a)**
2 Venla:	*((distances herself from the others))*	**Misalignment**
3 Niilo:	*((shifts his gaze towards Venla))* Ah:: *((points and sustains gaze toward Venla for several seconds))*	**First attempt to re-establish play connection**
4 Venla:	*((first gazes at Niilo and then shifts her gaze toward other children nearby))*	**Misalignment**
5 Niilo:	Eh:: *((sustains his gaze towards Venla, then points towards Ella and shifts his gaze from Venla to Ella))*	**Second attempt to re-establish play connection (Fig. 7.5b)**
6 Venla:	*((walks towards the other children))*	**Misalignment**
7 Niilo:	*((walks toward Ella, then turns around and sustains his gaze towards Venla for several seconds with face slowly tilting down))*	**Third attempt to re-establish play connection (Fig.7.5c)**

and oriented his body towards Venla again and sustained his gaze firmly at Venla for several seconds. This was Niilo's third attempt to re-establish play connection. After several seconds of sustained gaze towards Venla, Niilo's intensive and demanding gaze began to shift into wistful longing (Fig. 7.5c).

This sequence revealed how complex and demanding the re-establishment of joint play can be for pre-verbal children in a natural group-care setting where multiple competing activities are occurring simultaneously. From Niilo's perspective, the multiple efforts to re-establish play connection indicate that for him the progression of triadic joint play would have been very important. The wistful longing was further evidence of it. This sequence also reveals that toddlers are more and less competent play companions in their peer group and that their competence is always related to the situational organization of interaction (Kalliala 2014).

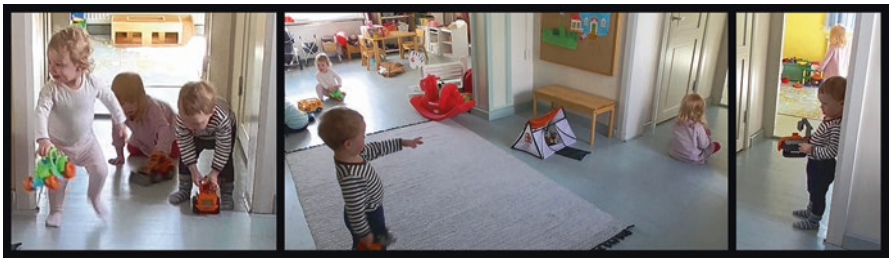

Fig. 7.5 (**a**) Joint and parallel play, (**b**) Attempt to re-establish play connection, (**c**) Attempt to re-establish play connection turns into wistful longing

7.4.3 Accumulation of Play Signals During the Day

In this section, we draw together our observations from the perspective of our second research question: How do the three focus children build sustained co-participation in their joint play during the day? Although Ella, Niilo and Venla were not able to build long-lasting storylines in their joint play, they co-constructed meaningful play signals that became significant gestures of their joint play. They also used these same significant play signals in new situations and accumulated different play signals together (e.g. by integrating jumping, requesting, laughing and coordinated gaze shifts into their play signaling turns). The first shared interactional resources for the joint play were smiling, laughing, co-coordinated gaze shifts and jumping. These play actions became significant gestures of the joint play between all three participants. Some interactional resources, e.g. verbal requests ("come Niilo"), were used only by Ella. Interestingly, Ella's verbal play proposals and requests were not so effective in the establishment of play connections in the peer group.

7.4.3.1 Sequence 7: Accumulating Significant Play Signals during the Day

To give an example of the accumulation of play signals, we provide sequence 7 (Table 7.8) which describes a dyadic encounter between Ella and Niilo during the morning free playtime after multiple dyadic and triadic joint play episodes with shared smiling, laughter, jumping. Ella's play signalling in lines 4 and 6 demonstrates the accumulative use of significant play signals as she integrates jumping, requesting, laughing and coordinated gaze shifts into her playful communication.

Another relevant aspect of building sustained co-participation in peer play was the way children were able to re-establish play connection after interruptions and interactional problems. As we mentioned before joint play among our focus children was fragmented and organized into short segments (14 s–4 min 16 s) during the day. Especially Niilo's and Venla's attention was shifting from one activity to another and sometimes quite extensive interactional work (by Ella) was needed to

Table 7.8 Sequence 7: Accumulating significant play signals during the day

	Transcription and verbal description of interaction	Sequential analysis
1 Ella & Niilo:	*((parallel play with blocs; both children are sitting on the floor side by side but engaging in their own doings without sharing looks or co-coordinated actions etc.))*	**Incongruent alignment and affiliation**
2 Ella:	*((Ella stands up from the floor and then gazes at Niilo))* [Tule Niilo [*Come Niilo*	**Attracting attention and requesting for collaboration**
3 Niilo:	[*((shifts his gaze towards Ella))*	**Alignment without affiliation**
4 Ella:	*((turns her back and begins to jump, then turns around and gazes at Niilo again))* [Tule Niilo (.) hyppimään [*Come now Niilo (.) let's jump ((bends and extends her knees rhythmically as if to demonstrate the jumping movement))*	**Play signalling and request for collaboration**
5 Niilo:	[*((sustains his gaze towards Ella))*	**Alignment without affiliation**
6 Ella:	*((turns around, begins to jump and produces escalated laughter))*	**Second attempt to establish play connection**
7 Niilo:	*((stands up, follows Ella and produces bursts of laughter))*	**Play connection: Alignment and affiliation with Ella's play signals**

re-establish the play connection and ensure the progression of the joint play. Short bursts of laughter and co-coordinated gaze shifts seemed to be the most frequent interactional practices that our focus children used to maintain and re-establish their play connection in different situations. In addition, laughter was effective interactional resource for settling both troubles with availability as well as problem conducts. Overall, it seems that both re-establishments of play connection and accumulation of significant play signals were important practices for toddlers to constitute social organization and sustained co-participation in their peer group. When these significant play signals were repeated and integrated together during the day in different situations, *sustained non-verbal narratives* emerged between participants (Trevarthen and Delafield-Butt 2017).

7.5 Conclusion

The present in-depth analysis of young children's joint play activities in a multiparty context during one full day-care day contributes to further understanding how very young children are able to organize their action in concert with each other in order to build shared understanding and sustained co-participation in their peer groups. On the one hand, the analysis revealed how emerging social competence is put into practice, and on the other, how very young children despite these social

competences need support and guidance in their peer play. The findings have profound implications for early childhood education practice, as they strengthen our understanding of very young children as both more and less competent play companions in their peer groups (Kalliala 2014). In educational research and pedagogical practice, we cannot emphasize the more competent and ignore the less competent interactional features of the toddling style. Rather, we need to develop theoretical, methodological as well as pedagogical frameworks that consider both aspects at the same time in their situational contexts.

From the pedagogical perspective, this study opened up a set of interactional themes and questions that could guide adults' practice in relation to peer play. In order to facilitate and enhance toddlers' peer play in group care settings, it is important for adults to understand when, how and in what ways children: (1) make play signals to each other, (2) establish heightened moments of play connection, (3) re-establish play connection after interruptions and interactional problems and (4) accumulate meaningful play signals together in different situations during the day. We strongly think that, when adults are able to observe and identify these phenomena from the flow of interaction (such as Chap. 6, this volume), they are also more skillful to provide delicately timed and designed guidance and support for the children when needed.

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Chapter 8
A Cultural-Historical Study of Digital Devices Supporting Peer Collaboration in Early Years Learning Setting in One Saudi School

Omar Sulaymani, Marilyn Fleer, and Denise Chapman

8.1 Introduction

The latest advancements in touch technology have resulted in a range of new digital touch screens that support learning, such as the Galaxy tablet and Apple's iPad. The development of these comparatively affordable, networkable and portable gadgets with superior features and a range of application (apps) choices, including educational applications, have enabled learning institutions to consider them as sustainable tools for learners that are compatible with the changing demands in this digital age.

For children today, the use of digital technologies is a common practice (Gray et al. 2017). The era we live in is inundated with digital technology. Children across the Arab countries, including Saudi Arabia, now have wide exposure to various interactive technologies and mass media (Wartella et al. 2016). For instance, a survey conducted by the National Center for Public Opinion Polling at the King Abdul Aziz Center for National Dialogue (2017) on Saudi children's use of smart devices and electronic games shows that approximately 91% of children in Saudi households use electronic games and smart devices.

It appears that children begin to use smart devices and electronic games at the age of five and a half years, with 79% preferring to use entertainment applications, 11% using social networking programs, *7.5% using educational applications* and 2.5% as hobby applications (Dialogue 2017). In fact, most of the literature available on the use and implementation of digital technologies in the early years learning environment concentrates on cases in the US, Australia and European heritage

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countries, with few studies addressing the application of digital technologies in the early years setting (i.e. early primary school) in the Saudi Arabian context, which is the focus of this chapter.

It has been claimed that despite digital technologies having a greater impact on learning, its advancement has not been embraced fully across the educational system in Saudi Arabia. This is attributed to the lack of understanding either by the class teachers or the decision makers of the potential impacts of digital technologies on the learning environment (Alabdulaziz and Higgins 2017; Albugami and Ahmed 2015; Almogbel et al. 2015; Alshammari 2014; Alsulami 2016).

Although some of these studies have addressed various aspects of integrating touch technology into Saudi early years classrooms, no cultural-historical study could be found in the Saudi context that explores the effect of introducing touch technologies (i.e. iPad) into Saudi Arabian classrooms from the children's perspective. In this study the children's perspective is conceptualised as following the intention of the children (Colliver and Fleer 2016). Such studies would help to understand how the children could collaborate in the classroom when using an iPad. This chapter takes up this challenge. To achieve this goal, the chapter briefly reviews the relevant literature on smart technologies and children's collaboration, followed by an overview of the theoretical concepts framing the study. The study design and findings are presented in the final section of this chapter.

8.2 Smart Technologies and Children's Collaboration

Smart technologies have increasingly found their way into the places and spaces of young children in many parts of the world. Touch devices are functioning in a more prominent role within shared activities undertaken by both children and adults in many settings (Merchant 2014). Relative to this study Gray et al. (2017) believed that the use of iPads in classrooms has the ability to enhance the children's communication skills and their level of discussion, especially when they are sharing the devices.

Several childhood organisations have drawn attention to the importance of collaboration in the early years learning setting. For example, the Association for Childhood Education International (ACEI 2007) emphasises a number of standards with regard to collaboration and instructional practices. One of the standards is "Candidates use their knowledge and understanding of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the elementary classroom" (ACEI 2007, p. 1). In addition, according to the National Association for the Education of Young Children (NAEYC) and Fred Rogers' Center Position Statement on Technology and Interactive Media in Early Childhood Programs, (2012) technology is effective as a tool for collaboration if it is active and engaging.

Although peer collaboration in early childhood development has been accelerated by technology, a deliberate plan is required to connect the curriculum and the schools' goals with student collaboration (Falloon 2017). Accordingly, early childhood curricula that require multiuser collaboration, knowledge and distributed resources, enable children to drive the instruction and discover the joy of learning (Cicconi 2014). The effects of incorporating digital technologies with learning activities of young children in an educational system have been documented in various studies. The studies focus on the value of technology, especially how it supports learning experiences when it is used in pedagogically sound contexts and integrated into the naturalistic learning environment of young children. Also, emphasis is placed on the impact of such educational technologies on the collaborative learning and engagement of young children (Falloon and Khoo 2014; Kucirkova and Falloon 2016; Kucirkova et al. 2014).

iPads are perceived as useful resources for initiating and implementing valuable collaborative skills in elementary school contexts. Kyza (2013) for example, collected data on students' reflections of their learning and found that monitoring is a form of collaboration that occurs among students when they are collectively engaged with educational technologies. Despite the existence of such evidence, more studies are needed to determine whether the use of iPads leads to better or different collaboration and learning (Falloon 2015).

Fisher et al. (2013) carried out one of the limited studies available that draw on Vygotsky's idea of "learning is inherently social and our interaction with others is central to our development as a learner" (p. 167). Their study signals specific design features that iPads require to support the collaboration of the learner. They found that there was enhanced collaboration in student-to-student conversation when "the role of a private workspace for an individual student and the role of a public workspace for sharing information, [encouraged] teaching fellow group members, and co-exploring new ideas" (Fisher et al. 2013). However, Fisher et al.'s study was conducted within the university and is based on a single subject discipline. More needs to be known about if and how digital devices create the conditions for children's collaboration in early years learning settings in Saudi schools.

8.3 Theoretical Framing of the Study

This chapter is guided by cultural-historical theory. To discuss a child's development through the lens of cultural-historical theory, the concepts of the social situation of development (Veresov and Fleer 2016; Vygotsky 1994) and perezhivanie (Veresov and Fleer 2016; Vygotsky 1994, 1998) are used to conceptualise the culturally responsive view that illustrates the child's development in regard to collaboration when using the iPads for the first time in the Saudi Arabian learning context. These concepts are used to explore whether the use of iPads improves collaboration among children in school in the free learning setting in the Saudi Arabian context.

8.3.1 The Relations Between the Social Situation, the Social Situation of Development and Perezhivanie

Vygotsky (1994) highlights the role of the concept of perezhivanie and the principle of refraction in comprehending the dialectics associated with children's development. His approach to conceptualising development supports research on how the specific social situation of the child turns into the social situation of development. Vygotsky (1994) provides an example of how three children from the one family in the same social situation interpret a situation differently because of their social situation of development. That is, each child has his or her own perezhivanie (Vygotsky 1994).

In a more contemporary context, Hedegaard and Fleer (2013) provide an example of four disadvantaged children responding to their circumstances differently where the life course events of not having food available in the morning was responded to differently by each child, positioning the eldest child to help the mother in the early morning period to be organised quickly so that they could attend the breakfast program prior to school starting. However, for the other siblings, the early morning event caused great distress, because they did not understand why no food was available to them when they were hungry. Both examples illustrate how perezhivanie as a refracting prism, brings together both the social situation of the circumstances and how the child is experiencing that situation based on their own understanding or level of development. Together the situation and how it is experienced, contribute differently to each child's social situation of development.

The new principle of refraction that has been introduced by the cultural-historical concept of perezhivanie helps to identify the content of the social situation of development. The social situation of development is considered to be the unique relationship of the child to the environment and the environment to the child, but this relationship should be occurring through perezhivanie as an indicator of its uniqueness (Veresov 2017). This concept helped the current study by providing the basis for understanding how children in the same social situation (i.e. the same classroom setting) interpret the introduction of the iPad differently, and this gives insights into how the introduction of the iPad can have an unexpected impact on the children's thinking and actions – in particular, peer collaboration.

8.4 The Research Methods

The study sought to research peer collaboration when using iPads for the first time in the classroom. The aim was to explore whether the use of iPads improves peer collaboration in school in a free learning setting in the Saudi Arabian context, and whether the children's use of the iPads promoted collaborative learning skills. The study addressed the question of how digital devices – specifically the iPad – affect the classroom practices in early years settings.

A case study approach was used to capture the children's perspectives of using the iPad. The study was conducted at the beginning of the school year and started in week one. The school is a public primary school located in the city of Makkah, Saudi Arabia. As it was a formal learning context, the teacher needed to follow the curriculum to fulfil its goals. As part of the curriculum, the teacher set aside one free learning session every day, because the children had only recently moved into the school setting and the teacher did not wish to overburden children with excessive educational content over the whole school day. At that time iPads were not used within the Saudi education curriculum. Consequently, the researchers took the opportunity to encourage the teacher to introduce the iPads into this free learning session, thereby avoiding curriculum disruption. Observations and interviews with the classroom teacher and the students were digitally recorded over an eight-week period.

8.4.1 Participants

One classroom teacher and a total of 36 children aged 5.6–6 years at the start of the study were recruited to participate in the study to capture all the classroom activities while using the iPad. There was particular focus on eight children: Amer, Khild, Moas, Saleh, Walid, Omar, Ahmed and Ali (pseudonyms).

8.4.2 Procedure

Over an eight-week period the iPads were used during the free learning sessions, which lasted an average of 45 minutes to 1 hour in each session. All the classroom activities were filmed using two digital cameras. A mobile camera (number 1) was used to capture the eight children's activities inside the classroom, while a fixed camera (number 2) captured all activities in the classroom. Interviews of students and the classroom teacher were conducted at the end of the day as a reflection of each session, and lasted an average of 10–15 minutes. After each session, field notes were sometimes taken if it had not been possible to film the classroom activities.

8.4.3 Data Analysis

Data showing the students' collaboration when the iPad was introduced were selected and analysed. All video clips that included the students' and teacher's reflections were imported into digital editing software (Filmora) as projects. The cultural-historical concepts of perezhivanie and the social situation of development were drawn upon to analyse the data. Hedegaard and Fleer (2008) three levels of

analysis were adopted for the data analysis: the common sense interpretation, the situated practice interpretation and the thematic interpretation. For the common sense interpretation, each episode was observed for signs of any peer collaboration performed when children were using the iPad, for example, when the students began to help each other. The second level of analysis, the situated practice interpretation, was applied when the data were analysed across the classroom setting for all the students. For instance, occasions where students were helping each other and explaining things in the context of using the iPad across the classroom activities, reflected situated practices around helping and explaining in each group. For the thematic level of interpretation, the third level, both the information from the data and the theoretical concepts of perezhivanie and the social situation of development were used to answer the research question. The two concepts were utilised to understand the classroom activities and the specific situated practice context (i.e. when the iPad was introduced). The concept of perezhivanie and the concept of social situation of development were intended to support an understanding of each student's different collaboration patterns, that is, every child's social situation of development that was refracted through the experience of using the digital device during moments of peer collaboration. These three levels of interpretation will be explained in turn in the findings and discussion section.

8.5 Findings

The findings of the present study are part of a larger project in which children use iPads for the first time in an early years' classroom setting in Saudi Arabia. The results highlight how iPads foster a more consistent collaborative partnership in terms of power over the classroom setting. The findings suggest that the initial introduction of the iPad is considered a dramatic moment in the students' psychological development, and the iPad invites more selected collaboration in the learning activities in the study context. Four significant collaborative practices were found: helping and explaining, initiative, sharing the work roles and monitoring. These are discussed in turn below.

8.5.1 Using the iPad for the First Time (Vignette 1)

The moment that the iPads are introduced to the students was a dramatic moment. At the beginning of the free learning sessions, the classroom teacher created a learning position in which the iPads were introduced to the students as a reward for achieving the goal of that learning position. At that moment, the students showed different refracted expressions of joy and pleasure on their faces. The students could not believe that they would be able to use the iPad inside the classroom, because they knew using the iPads at school was not previously allowed. Ali approached the

teacher to confirm the message. He said, "Will we use the iPad?" When the teacher answered "yes", he broadly smiled then giggled. Saleh moved closer to the researcher and exclaimed, "HEEYYY (an expression of excitement) we will use the iPad". Some students had a different reaction. For example, Walid said, "I will come to school every day", and the expression of joy was visible on his face, while Ahmed said to the researcher, "I love you, because you brought us the iPad". Students in the classroom shared their smiles with each other. These examples of excitement and happiness demonstrated the students' desire to use the iPads inside the classroom.

Indeed, these scenes describe the students' psychological state, which is the transmission point that represents the dramatic collision we look for in this sort of cultural-historical study. What appears here is that the students have volition to be engaged with the iPads inside the classroom, even though they know they had not been allowed to use the iPad inside the school before. This represents the idea of a dialectic interaction of the relation between the subjects and the surrounding environment.

8.5.2 Using the iPad and the Students' Collaboration Practices (Vignette 2)

The use of the iPads for the first time in a traditional learning setting is considered a dramatic moment in the students' psychological development. This section describes the four different patterns of peer collaboration observed, which are understood to be different experiences of the same material environment (i.e. iPad) in the same social situation, and are an indicator of the students' development.

8.5.2.1 Initiative, Helping and Explaining

The findings showed high levels of student engagement during peer collaboration where initiative, helping and explaining among students was evident. This was seen, for example, in Walid's group. At the beginning of one free learning session during which the iPad was being used, the classroom teacher gave the children the choice to run any learning app on the iPad in each group. Three of the six groups ran the same learning app (Lams: an Arabic learning app for teaching children the Arabic alphabet and Arabic words). The other three groups ran different learning apps. In his group, Walid ran an arithmetic learning app (Juicy Math: an app that helps children to deal with numbers and simple mathematical operations). Walid started reviewing the arithmetic games with his peers in the same group and then he played a simple addition and subtraction game (Fig. 8.1). Walid showed proficiency in dealing with subtraction operations, then he started explaining the addition and subtraction processes to his peers by showing them how the game works. The following example illustrates this:

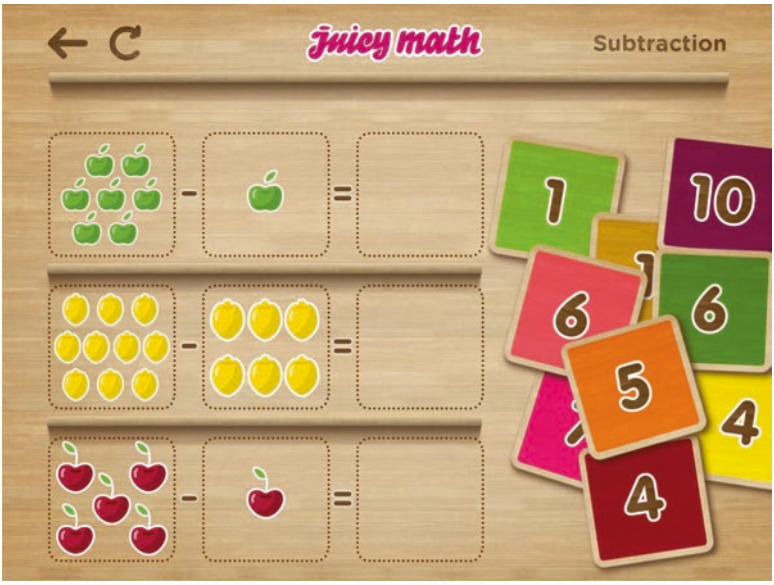

Fig. 8.1 Addition and subtraction app

Walid: There are seven apples in the first box and there is one apple in the second box; which number should we choose from the third box to get the correct result?
Ali interrupted Walid.
Ali: I know this game, and I know how to add and subtract.
Walid ignored him.
Walid: The correct answer is six.
Then Walid grabs the box with the number six and puts it in the answer field.
Walid: Did you understand?

Walid continued explaining the rules of the game to his peers. What can be seen here is that Walid took the initiative and started to explain the game to his peers. However, although Ali mentioned that he knew the game, he just said that he knew how to add and subtract without any further action. These are the sorts of patterns the study was looking for in order to understand the individual social situation of development, where the same social situation is experienced differently.

Because the teacher had asked the students to share the iPad within the group, Walid gave the iPad to his next peer. His peer continued playing with the same game without any problem, then he passed it to the next and so on, until the fourth student Omar. Omar did not know how to choose the correct answers, perhaps because he did not know how to do addition and subtraction. The student who was sitting next him, Ahmed, looked at him with a smile and enthusiasm and tried to help him by just pointing to the correct answer. In contrast, Walid intervened:

Walid: OOOH, it's very easy.
He then raised his right hand.
Walid: Look at my hand…how many fingers on this hand?
Omar: One, two, three, four, five.
Walid: Yes, correct.
Then he closed two fingers.
Walid: How many fingers now?
Omar: One, two three.
Ahmed was looking at the iPad while he nibbled his fingernails, then he grabbed the iPad from Omar's hand hastily.
Walid: YAAA nice correct (with a pleased expression on his face).
Walid then moved to look at the iPad in the hands of the next student.

During this dialogue between Walid and Omar, the child who does not know the subtraction, Ahmed took the opportunity of Omar and Walid's engagement to grab the iPad from Omar's hand as a result of his desire to use the iPad. In this scene, each student appeared to refract different responses to the same social situation. Walid intervened voluntarily and tried to help Omar by explaining the subtraction, while Ahmed just wanted to take the iPad (when he nibbled his fingernails) and did not want to miss the opportunity to use the iPad, even if it was not his turn to use it.

This scene might be seen as a spontaneous collaboration between the students; however, in fact, the teacher confirmed when he saw this clip later that this form of collaboration among students had not appeared in this manner prior to the introduction of the iPad. He said:

> During my experience, spanning more than fifteen years teaching junior grades in primary schools, it rarely happens that students show some kind of collaboration among themselves during traditional learning activities. This form of collaboration and harmony when the iPad is used is spontaneous, and has not happened before. Maybe because we miss using learning strategies such as collaborative learning.

8.5.2.2 Sharing the Work Roles and Monitoring to Foster Collaborative Learning Skills

Sharing the work roles and monitoring was found to be a kind of peer collaboration. The findings showed that fostering this collaborative pattern of sharing the work roles necessitates the appearance of a role model that may influence the others at some stage in the activities. An example follows.

On another day during the free learning session, the students were waiting for the iPads with excitement and strong desire to use them. The teacher asked the students to use a colouring app on the iPads, because he wanted the students to discover and understand colours. The children were self- organised into groups. In one group, Moas started using one of the colouring applications on the iPad. He began

colouring one of the drawings using the colour palette in the app. Moas was focusing on the colouring with an expression of happiness. This appears when he said:

Moas: I will use the iPad now.
Saleh tries to look at what is Moas doing and presses on the iPad in an involuntary movement.
Moas stops him.
Moas: This is my turn.

After his time was over, Moas passed the iPad to his next peer, Saleh. What we could see here was that Moas was happy to use the iPad alone and did not want Saleh to share the iPad with him.

Saleh began to paint a new drawing, which was a rainbow without colours. Saleh started colouring the first line of the rainbow and then he voluntarily passed the iPad to his next peer and pointed out to him that he should complete the colouring of the second line:

Saleh: It is interesting.
He smiles.
Saleh: You try it (a reference to his peer next to him), it is interesting.

Saleh transfers to his peer his enjoyment of the painting experience (colouring the rainbow) when he emphasises that the colouring task is interesting, and he wants him to try it. Interestingly, this student did the same when he finished colouring the third line of the rainbow, as he then passed the iPad to the fourth student (there were only four students in this group).

What can be seen here is one child being oriented to start and finish all the colouring individually, as Moas did when he finished all the painting. However, the other child, Saleh, starts the colouring individually but then passes the iPad to his friend and tells him he should colour the second row of the same image. This student then did the same, and passed the iPad to the next student to finish the colouring. What Saleh did as a role model was different from what Moas did and it affected the students who sat after him and finished the painting collaboratively.

Another finding from the same day, but in a different group, showed how the children were able to monitor and evaluate each other, which is another pattern for fostering peer collaborative learning skills (Kyza 2013). In this group, all the students worked independently, which meant each student worked on his task alone; however, they observed each other and commented on the colouring. When Amer noticed that his peer, Khild, was colouring outside the lines of the rainbow, he asked Khild to colour inside the lines. This dialogue happened between Amer and Khild when Khild colours outside the lines:

Amer: Hey, you have to colour inside the lines. You need to erase this.
Amer: Mine was much better than you, yours looks ugly “smiling” HHHHH.
Khlid stopped colouring and looked at his painting.
Amer: Let me show you how to erase it.
Khild: No, it is my turn to use the iPad not yours. I will do it myself.

Then Khild began to erase the colour and paint again.

Amer and Khild have different reactions. Amer was proud that his painting looked better than Khild's painting, and he wanted to guide Khild in how to paint inside the lines; however, Khild wanted to keep the iPad and was afraid that Amer would take it from him. As Khild wanted to keep the iPad, he tried to fix his painting by erasing the colours and do the colouring again. This example illustrates a different social situation of development evident in how the peer experiences are refracted differently by both Amer (proud of himself that his painting looks better than Khild's painting) and Khild (thinking Amer wanted to take the iPad from him). Also, the children liked to use the iPad in this context, as was illustrated when Khild said, "No it is my turn to use the iPad not yours. I will do it myself". The iPad has the potential to foster peer collaborative learning skills, which entails the students monitoring and evaluating their ongoing activity procedures.

8.6 Discussion

This chapter used Vygotsky's theory on child development as a basis for structuring a dialectical approach (Hedegaard 2012) for studying early learning students in particular activity settings (i.e. using the iPad in a free learning session) in one Saudi school. Analysis and discussion of the early learning students' collaboration was undertaken by using the concept of perezihvanie where the social situation acts as the source of a child's development (Veresov and Fleer 2016), and by using the concept of the social situation of development to explain the different experiences in the same material environment (i.e. using the iPads). The focus was on the children's perspectives when being introduced to iPads for the first time in a learning context.

The findings from vignette 1 showed different expressions of joy and pleasure on the students' faces, and they also expressed joy with some verbal expressions, such as "Do we really use the iPad, I love you, I will come to the school every day etc.", as a result of the initial introduction of the iPad in this learning context. The point of introduction of the iPads denoted the transmission point that represents the dramatic collision as a prism (perezhivanie) that refracts different development of each child. This understanding of perezhivanie comes from Vygotsky's (1998) illustration of perezhivanie, where he explains that it "is a prism through which the influence of the environment on child development is refracted" (p. 294).

The study found that when the iPads were initially introduced into the classroom, the structure and practices in the school created a dramatic moment (i.e. perezhivanie as a refracting prism), which impacted on the development of children's collaboration in this particular context. The examples of excitement, happiness and verbal expressions describe the students' psychological state, and demonstrate the students' volition to use the iPads, despite the fact that they know it is normally not permitted for them to use iPads inside the classroom. This can be captured through the idea of "the dialectic relation and the laws of development" between the subjects and the surrounding environment (Vygotsky 1994). Thus, in analysing "the laws of development" (Vygotsky 1994), the concept of perezhivanie helped with

understanding the influence of environment on the students' psychological development, and this concept was used in this study to understand the way the students collaborate with each other through analysing the social situation of development of each student.

Vignette 2 showed that the same situation (i.e. using the iPad inside the classroom) had been experienced in various ways. In the two examples of initiative, helping and explaining, the data revealed that both Walid and Ali showed a proficiency in dealing with addition and subtraction operations; however, the social situation of Walid's development is different from the social situation of Ali's development. What can been seen here is that Walid took the initiative of explaining the game to his peer, whereas Ali just mentioned that he knows how to add and subtract. Further, it appeared that there is a pattern of peer collaboration that foregrounds initiative emerges.

Another social situation of development appeared in the example of Walid and Ahmed. The two children's responses in their actions exhibited a different perezhivanie. Walid intervened *voluntarily* and tried to help Omar to understand the subtraction, but Ahmed was just *thinking* about grabbing the iPad (when he nibbled his fingernails he was demonstrating a desire not to miss the opportunity of using the iPad). These actions manifest how Walid and Ahmed have a different perezhivanie through which the activity was refracted (Veresov and Fleer 2016), resulting in a different social situation of development while using the iPad.

Although Falloon (2017) emphasised the importance of deliberately planning to connect the curriculum with students' collaboration, *the spontaneous collaboration* that appeared in these examples occurred as an initiative and as explaining and helping each other, perhaps, as the teacher said, because of the absence of a collaborative strategy.

The second part of vignette 2 showed how sharing the work roles and monitoring each other, foster peer collaborative learning skills. The findings suggested that fostering this collaboration pattern of sharing the work roles necessitates the appearance of *a role model* that may influence the others at some stage of the activities. This appeared when Moas was enjoying finalising the task alone, while Saleh passed the iPad to his peer and asked him to try the colouring, because Saleh was enjoying the colouring and he wanted his peer to try this enjoyable experience. Saleh said twice, "It is interesting".

What Moas and Saleh and the rest of the students after him take from the same situation (working individually or working collaboratively) was different because of their perezhivanie that refracts each child's social situation of development differently. As Vygotsky (1994) stated, "the child's perezhivanie as a prism that refracts environmental moments and determines the influence of these environmental moments on the course of child development" (pp. 339–340).

Monitoring was another pattern of fostering collaborative learning skills. This behaviour was seen in the example of Khild and Amer, both of whom have a different social situation of development. Amer's perezhivanie (the pride) that guided Khild to colour inside the lines, because colouring outside the lines looks ugly, and Khild's perezhivanie (fear of losing the iPad) was the reason why he wanted to keep

the iPad, because he thought Amer wanted to take the iPad from him to fix the painting. This is understood through utilising the idea that "the developing individual is always a part of the social situation and the relation of the individual to the environment and the environment to the individual occurs through the perezhivaniya of the individual" (Veresov and Fleer 2016, p. 5).

This sort of monitoring was different from Kyza's (2013) monitoring. Kyza (2013) illustrated monitoring as a form of collaboration among students, as seen in the students' reflections by way of self-regulation when they are engaged together in the learning settings. However, the current study suggests that the monitoring in this context could be seen as *unintentional monitoring*, without any guidance from either the curriculum or the classroom teacher.

8.7 Conclusion

In sum, this study sought to examine the role of the iPad in fostering peer collaboration skills such as initiative, helping and explaining, sharing the work roles and monitoring that occurred as a result of the dramatic moment of the initial introduction of the iPad in this particular learning context. In the sense of understanding perezhivanie in relation to how the small transitions in this particular learning context (i.e. the introduction of the iPad) could be critical moments (Hedegaard and Fleer 2013). Thus, the current study suggests that although the iPad is attractive and important for children, the way it is introduced can impact on how the children use it. Introducing an iPad and using it for the first time in a learning context where no tradition of using it exists, was the critical moment that brought about the students' different perezhivanie which refracted each student's social situation of development differently.

The findings of this study suggest there is a need to highlight the children's perspective in regard to introducing the iPad as a facilitating tool that fosters peer collaboration. The students appeared to show their readiness to engage collaboratively but in the form of *spontaneous and unintentional collaboration*. The current study acknowledges that one classroom in the Saudi context does not represent the whole Saudi context, but study brought forth some concepts that may serve useful to elementary teachers and decision makers when iPads are integrated into early years settings. The findings of this study add to the current knowledge on peer collaborations precipitated by touchscreen tablet technologies, in particular classroom settings that have not previously incorporated these digital technologies. Moreover, by drawing upon the cultural-historical concepts of perezhivanie and the social situation of development, this study offers additional ways of viewing the integration of digital handheld devices and illuminates possible opportunities they can offered to peer collaboration within early learning contexts akin to the Saudi context described.

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Chapter 9
Children's Peer Cultures and Playfulness at Mat Time

Anita Mortlock and Vanessa Green

9.1 Introduction

Teaching a large group of children on the mat (mat time) is a commonplace practice in many classrooms in Aotearoa-New Zealand, where the current study is situated. Mat time is when teachers opt to work with the children on a carpeted area of the classroom rather than, say, have them sit at their desks. In Aoteroa-New Zealand, many teachers believe that mat time is an effective practice for bringing children together as a group and fostering cohesion, getting information across to children quickly, and giving children opportunity for speaking to a large audience (Mortlock 2016). It is predominant in junior classrooms, which includes children aged 5–8 years. In fact, many children aged seven years and younger are required to attend mat time for 15–22% of their classroom time (Mortlock 2016).

It is likely that interactions at mat time comprise a dynamic system whereby teachers' and children's behaviours form a specific milieu that, at times, interrupts the learning, which the teacher anticipates. For example, many researchers have reported concerns about children's challenging behaviour as well as the degree of teacher-control that might be exerted over the children at mat time (for example see Collins 2013; Leach and Lewis 2012; Zaghlawan and Ostrosky 2011). The way in which mat time is set up by the teacher is investigated as well as how children respond to this kind of teaching and learning environment.

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Extant studies suggest that generally, some children seem inattentive and disruptive on the mat; for example, calling out of turn or withdrawing focus. Some children might even leave the mat altogether or annoy friends (Ling and Barnett 2013; Wood et al. 2009; Zaghlawan and Ostrosky 2011). Although children's behaviour at mat time is often described by researchers and teachers as disruptive or inattentive, there has been little research to explore why this might be. An obvious answer is that children might be bored; however very few children cite an active dislike of mat time (Mortlock 2016). This present chapter investigates this paradox through a peer culture perspective and symbolic interactionism, which will be described further in the chapter.

We asked, 'how do children exercise their peer and play cultures when faced with teacher-imposed rules and pedagogical structures?' In order to address this question, analyses of interviews with children and their teachers in three classrooms were undertaken Video-footage was also taken of twenty-nine mat times and written narratives were formed from key vignettes developed from the footage. We argue that the children's peer group cultures, play cultures, and individual children's understandings of these cultures have a strong part to play in disruptive and inattentive behaviours. If we are to enhance mat time pedagogies to better meet children's needs then an understanding of their peer cultures and play, and the impetus of those needs behind any disruptive or inattentive behaviour at mat time is integral. In the context of our study, we interpret disruptive behaviours to be those that are distracting, or that interfere with others' focus on the tasks facilitated by the teacher. Inattentive behaviour might not be disruptive to others; however, it describes a focus that is elsewhere other than on the teacher's set task.

9.2 Theoretical Approach: Symbolic Interactionism and Peer Culture

We identified two bodies of thought in order to help us make sense of the interviews and video footage. The first was symbolic interactionism. Interactions must be understood in relation to the specific context within which they take place; this includes the people, objects, and situations that circumscribe those interactions. One key concept in this body of thought is that interactions are comprised of symbolic actions that serve to create social order and communicate how much power and agency is afforded to groups and individuals. Implicit is the idea that there are both overt and hidden rules, norms, and structures that influence the ways that people relate to each other and wider society. Ongoing interactions with others offer individual opportunities to construct meaning from those interactions, which may then be used to understand subsequent interactions, self, and societal or group structure (Carter and Fuller 2016; Musolf 2003; Snow 2001).

We took the idea of children's peer cultures as our second orienting concept. Children develop a peer culture that is related to but different from the culture espoused by the adults, particularly with regard to the official norms, rules, and values that the adults uphold. Children construct their own values, norms, and common interests that are distinct from the adults' (Corsaro 1985, 1988, 2012). In fact

children develop their own unique rituals and modes of participation in group-life. Not only that, children sometimes imitate or use rules that adults make in order to meet their aims and needs; in other words, children might use adult's rules in ways that adults do not anticipate (Corsaro 1985; Galbraith 2011; Mary 2012). In this way, children develop their own community and social systems within the wider adult-dominated interactional context (Corsaro 2012; Eirich 2006; Galbraith 2011). Children's peer culture, independent from the adults,' is often driven by a desire for control over their own lives (Corsaro 1988; Woodrow 2006). There is rarely a single, unified peer culture within a classroom (Galbraith 2011). When a group comprises several peer cultures or sub-groups, there are likely to be some aspects that are shared amongst the peer cultures and others that create dissonance. A key ramification for teachers is how to decide which peer group's agenda takes precedence when its needs are divergent from another's.

9.2.1 New Zealand-Aotearoa Primary School Context

This chapter is based on data collected in three New Zealand-Aoteara primary classrooms in different schools as part of the first author's doctoral study (see Mortlock 2016). Our study sought children's and teachers' perspectives about the efficacy and social aspects of mat time, where the teacher brings the children to the carpeted area for discussion, instruction, or some other designated task. In New Zealand children typically start school on their fifth birthday and classes commonly comprise between twenty and thirty children and one teacher. A school day is six hours long with several breaks for children to play. Teaching is guided by *The New Zealand Curriculum Framework (NZCF)* which brings together constructivist theories of learning with prescribed levels of skill and understanding, which children are expected to achieve in a variety of subjects such as the arts and mathematics. Although academic levels and outcomes are a focus, the curriculum states that learning is embedded within socio-cultural contexts and that students' positive relationships with peers are integral to their learning and well-being (Ministry of Education 2007). Although mat time seems ideally positioned to be a forum whereby children can interact with each other, teachers often prioritise giving instruction (Mortlock 2016).

9.3 Methodology

9.3.1 Participants

Numerous schools responded to an invitation to participate in the present study, which was issued at the end of a nationally delivered survey about mat time pedagogies (Mortlock 2016). Three schools were chosen purposively based on the most points of difference to each other (group size, socioeconomic status of community, children's ethnicities). Research was undertaken in Year Two classrooms which

comprised children aged five to seven years. The first classroom was situated in an affluent area and had fewer than twenty children of European or Asian cultures. The classroom was well-resourced including electronic equipment (e.g. Vimeo whiteboards) which were utilised at mat time. Often children sat on the mat in an *en bloc,* free-seating arrangement while the teacher sat on a chair at the front. Sometimes children sat or stood in a circle, but this was less common than the *en bloc* configuration. The second classroom was the largest in the study with over thirty children descending from European, Pacific, Asian, and Middle Eastern cultures. A standard whiteboard, laptop computer, and data projector were available. Children predominantly sat on the mat in an *en bloc* configuration although sometimes the teacher asked them to sit in a circle. In either case she sat on a chair whereas the children sat on the carpet. The third classroom was midsized, accommodating twenty children from Māori and Pacifica descent. The school was situated in a low socioeconomic area. The teacher used a circle configuration for mat time and sat with the children on the carpet. The three teachers were very experienced, each with senior roles in their schools, and classroom careers spanning twenty years or more.

9.3.2 Data Gathering Strategies

The first data were obtained by placing a *GoPro* camera at a strategic location in order to film the class during mat time. Twenty-nine separate mat times were analysed, totaling 304.21 minutes of mat time footage. Each mat time was typically between four minutes and fifteen minutes in duration. The second set of data were gathered the following term though audio-recorded semi-structured interviews with the teachers (n = 3) across the three classes and many of the children (n = 49). Semi-structured interview allows a researcher to focus participants on the topic while allowing room for participants to extend on points of interest or personal importance. In other words, while they have predetermined foci, participants' are enabled to share their subjective and nuanced experiences related to those foci (Anderson 1999; Creswell 1994). An iterative approach for identifying key themes in the video recordings and interviews was adopted whereby the researcher must construct meaning from the data and identify prevalent themes (see Wiersma and Jurs 2009). A sorting and grouping technique was applied to identify data that had commonalities as well as identify data with outlying themes.

9.3.3 Ethical Considerations

The first author sought consent from children, their caregivers, each classroom teacher, and the school principals prior to data collection. Next, site visits were made to each classroom to optimise the children's feelings of safety and familiarity with the first author's presence. A second consent was sought from individual

children before being interviewed. The core principles guiding the ethical approach for the present study included the importance of minimising disruption to children's learning, protecting their emotional well-being as paramount, and protecting the anonymity of the participants. Pseudonyms were issued for each participant.

Because of the power differences between adults and children there was potential for children to say things, which they thought were pleasing to the researcher more so than presenting their viewpoint. To mitigate this, when spending time in the classrooms the first author used Corsaro's (1985) strategy of presenting as a non-adult; this meant that she avoided, as best as possible, taking on the kinds of authority typically afforded to adults in schools. For instance, where possible, she followed the same rules expected of the children. Another example was to affirm children's peer interests and humour. In addition she avoided some of the symbols in interactions that were generally associated with authority (such as the teacher's chair, or issuing the kinds of instructions that would typically be attributed to a teaching role). In the interviews, it was essential that children felt that they could be authentic in their responses and make corrections if their meaning had been misunderstood or misinterpreted.

9.4 Setting the Scene: Mat Time

The context within which research is undertaken is important in both peer culture theories and symbolic interaction (Dennis and Martin 2005) because any context holds implicit and explicit patterns that influence how individuals within that context relate to each other and behave; therefore it is useful to set the scene for our study. Each of the three teachers gave specific examples of how mat time fosters a positive class culture as well as being a time for focused work. They each wanted to incorporate the children's interests into mat time pedagogical content and make it an enjoyable time for children. The video recordings showed that while this was true, they also frequently issued controlling statements either directly or indirectly. For instance, it was common to hear, "I will choose someone who is sitting nicely," which was an indirect bid to control children's behaviour.

Eggen and Kauchak (2006) suggest that a teacher's authority is integral to the creation of orderly and safe environments for children; however, at which point does authority become dominance and control? Children report that one of the most disliked aspects of mat time is other children's disruptive behaviours (Mortlock 2016); therefore teacher-authority potentially gives mat time a structure and assists many children to stay on task. Furthermore, when that authority is sensitively attuned to the children's needs, a positive mat time climate might be fostered (Cefai et al. 2014). Notwithstanding, when authority lacks sensitivity and tends towards control, specific children might resist that control through behaving in disruptive ways (Rubenstein Reich 1994).

In order to support children's on-task focus, teachers must consider ways to minimise control and instead optimize those factors which are associated with

maximising children's engagement, such as ensuring that mat time content and activities have relevance to children's lives and interests, and that they are given some choice and autonomy (Joussement et al. 2004; Wigfield and Cambria 2010). Specific strategies for attaining the ideal balance of teacher-authority and child-autonomy are dependent on each cultural and social context; therefore, identifying how teachers might achieve this balance in this chapter is problematic. Notwithstanding, understanding children's peer culture will go some way to enabling us to identify some key factors to consider. The following sections will explore our findings about children's peer culture and their interactions at mat time in relation to teacher authority and control.

9.5 Friendships and Playmates at Mat Time

We found that friendship is a prevalent concern for children at mat time. We observed children vying for seating positions close to friends, which requires a range of strategies, including physically blocking another peer from sitting next to a desired child, and issuing bribes, threats such as "I won't be your friend anymore," or affiliative strategies such as reminding another that "we're best friends, ay?" Affiliation, threats, bribes, and blocking others are essential strategies that children use to protect their friendships and describe the difficulties that some children have in sharing preferred friends with others (Corsaro 1985, 2012). We found that one difficulty for teachers is to decide when it is appropriate to support children in protecting their friendships at mat time and when it is not. Given our symbolic interactionist stance, the repeated strategies used by children are seen as core components of power and inclusion that describe group life, as well as describing who has agency (Dennis and Martin 2005). Specifically, we wonder who is successfully able to choose who to sit with and who is thwarted? A key consideration for teachers should be when those friendship-protecting strategies exclude other children, as described below.

At times, the teachers broke the class into small groups or pairs; while the teachers' aim was to facilitate small or pair discussion, the children's culture was such that friendship concerns were the predominant focus. The project data showed that the practice of breaking children into working pairs is particularly problematic for children in triadic friendship groups. They can be heard negotiating who will be in the pair, and who will need to be left out. This sometimes requires organising their friends into a hierarchy. Equally problematic, is when teachers ask children to organise themselves into small working groups at mat time. We found that it often it is the same child who is consistently left over without a partner or group; often because they do not have a close friend to sit with. We found that some of the children referred to peers in this position as being "the left over," which we believe symbolically insinuates a kind of dismissiveness to that child's potential contributions to group life. Oftentimes, the children who were 'left over' did not publically complain; however, one such child disclosed in his interview that he experienced mat time as a series of rejections that he needed to brace himself for. This has high

relevance considering that even from its conception in the nineteenth century, symbolic interactionists have accepted the notion that our experiences of approval from others informs an individual's sense of self (Harter 1999).

9.6 Playing Around on the Mat

Data from the present project showed that although specific children behave in publically playful or humorous ways on the mat, other children's playfulness is furtive and includes only one or two additional children who sit nearby. In this section we look at the latter. We found that children were most likely to intentionally distract their friends through covert play as opposed to children they were less relationally close to. A typical playful behaviour between friends is described in the following example lifted from our observational data.

The teacher's rule is that no toys are allowed on the mat. While the teacher is talking about the day's intended work, Ella takes a small toy fish from her pocket. She holds it close to the carpet and touches Alex with her elbow. Alex looks at Ella and Ella directs her gaze to the fish in a conspiratorial manner. Alex looks at the fish for a moment and smiles. Ella smiles back and slips the toy fish back into her pocket.

This kind of furtive playfulness might serve to enhance specific children's sense of togetherness as a sub-group of the wider class, thus reproducing and consolidating a peer group identity (Galbraith 2011). This is particularly evident with children seeking to affiliate with specific friends, especially where there is a common agenda and agreed shared action (Corsaro 1985; De Haan and Singer 2001). In the above example Ella furtively shared her illicit toy with Alex, thus making Alex complicit in keeping her secret.

Some children use clandestine humour to play around. Toying with the danger of being 'caught out' is a common theme apparent in children's play cultures (Corsaro 2012) and some children appear to use humour at mat time to explore teacher-authority whilst avoiding being caught. Such practices potentially create and reproduce affiliative bonds and the humour that is utilised seems quite specific to individual peer cliques as evidenced in the following vignette we observed.

Quentin pretends to vomit into his hands and then wiped the imaginary vomit onto his friend Sefa, and later pokes Sefa in the middle of his forehead with a pencil, while smiling. Nearby, Jacob whispers to Tane to squeeze his fingers as hard as he can and then role-plays an injured hand, which causes mirth in a variety of children seated around them.

The symbols in these interactions are interesting because they deal with themes of illness or disgust, and pain. Libera et al. (2019) argued that making humour from pain (real or imagined) allows us to make sense of the uncomfortable aspects of the human experience. In this case, it could be that the children are symbolically amplifying their discomfort or boredom of mat time and representing it playfully as actual pain or illness. While potentially distracting to others in the context of mat time, we

must consider that Libera et al. (2019) describe such humour as a creative and "magical gift" (p. 235) because it alleviates our suffering of pain and discomfort.

9.6.1 Problems in Playing Around

Playful teasing at mat time was common amongst the participant children and seemed more likely to occur between friends rather than associates. In Quiñones' (2016) study about interactions between a father and his infant, loving teasing entailed symbolic thought in order to express affection and connectedness and we found that there seems to be a similar impulse in some forms of playful teasing between friends. Notwithstanding, there are considerable difficulties when teasing is one-sided. This often seems to be the case when one child wishes to focus on mat time and the other wishes to engage in playful behaviours. This is evidenced by a child in our study, Hunter , who described such an issue in the following comment: "You know my friend, this guy, he's sometimes behind me and then he starts fiddling with my back and stuff and starts tickling me or something, then I have to move, then he just moves with me."

Several theories are possible about why children might deliberately irritate their friends. Teasing in this context can be described as a symbolic ritual (see McLaren 1999); in this case, the ritual is a provocation, comprising a degree of antagonism that is used to cause tension (Keltner et al. 2001). It is possible that a child who teases might be reacting against the group nature of mat time by asserting intimacy with regard to his or her friend and asserting affiliation, thus enacting and reproducing a certain social structure within the peer group (as described by Pellegrini 1995). Teasing might also occur as an attempt to change the other's behaviour (Keltner et al. 2001). Both of these explanations are plausible given that the provocateurs of teasing in our study more often than not seem bored and expressed desire for their friend to attend to them rather than focus on the mat time content.

9.6.2 Social Support of Playmates and Peers

A child's participation in group-activity is partly dependent on his or her sense of belonging and social support, and ability to influence the group through his or her unique contributions (Sandberg and Eriksson 2008). Evidence from the current study showed that this is equally true at mat time; children's abilities to contribute meaningfully are dependent on social support of playmates and peers; therefore, it is important to consider the impact on children who experience less social support from their peers. Because of the potential disadvantages for those who experience little social peer support, teachers must take on active roles to mitigate the power differences between children.

Both peer culture studies (see Galbraith 2011) and symbolic interactionist studies (see Musolf 2003) describe complex systems of 'insiders' and 'outsiders' (in this case, those children who are accepted by the group and those who are not). This is expressed subtly in mat time interactions when insiders are given social support and outsiders are not. A symbolic view of those interactions also raises questions about participation and power, making the extent of children's social support and insider-status an issue of equity and rights (Mortlock 2016). In fact, some studies would describe those children with high social support as socially dominant (see Green and Rechis 2006; Fein 2012). In short, allowing specific children disproportionate social prominence at mat time potentially fosters a context where they may be enabled to dominate others. In our interviews with children, some of the children described their prominent peers as being more important than others and implied that they had a sense of centrality to group life that was very powerful, as described by Green and Rechis (2006). The following section describes other ways that children might explore power in their interactions with their peers.

9.6.3 Playing the Teacher and Policing the Rules

As we found, often times, the very beginning of mat time inspires policing or authoritarian kinds of behaviours in some of the children. Often these social behaviours are ones that can be typically observed in teachers; therefore it is likely that specific children who draw on those behaviours are in some way mimicking the teacher. Such behaviour was found in Jordan et al. (1995) study of children's awareness and use of rules. They state that invoking the teacher's rules enables an individual child, "to carry out the child's personal agendas, to control the behaviour of other children, and to prevent their own behaviour from being controlled" (p. 340). Indeed, symbolically such behaviours indicate an implicit culture of "who is allowed to do what to who?" in various interactions (Dennis and Martin 2005). This is a poignant question given that those children, interested in rules, did not apply their policing to everyone; they appeared to target specific peers (often not their friends). Rule policing appeared to be used at times to deliberately get someone in trouble with the teacher. It could be that such behaviours further entrench the notion of insiders, outsiders, dominance and power, that were described in the previous section.

In our study, sometimes the teachers would invite the children to take on a specific role that the children recognised as the teacher's domain. In one classroom, being chosen as someone who could use the teacher's shaker to inform people to be quiet was highly coveted. Alternatively, to be chosen as the person who held the pointer (for large books) in another class was very popular and several children exaggerated desired behaviours in order to maximise their chances of being chosen; for instance, sitting upright with pronounced straight backs or ensuring the teacher knew that they had completed all of their work to a high standard. Symbolic interactions are sometimes coupled with symbolic objects, which communicate ideas

about what kinds of status an individual has (Maloney 2000; Rietveld 2010). In the examples from our study, the objects such as the pointer and the shaker become important symbols to denote the child's status as the teacher's proxy. A symbolic interpretation would suggest that the some of the children's exaggerated behaviours (such as sitting 'nicely') in order to be chosen, shows that taking on the object and therefore the associated status, was highly desired.

Both peer culture and symbolic interactionist studies have an interest in artefacts and what they bring to interactions. Arguably when a teacher allows an individual child to use the pointer or shaker, that teacher is sanctioning the child's positional power in that moment; the shaker or pointer become artefacts to communicate the child's deputation to have authority over peers in that moment. Notwithstanding, when a child takes that authority on from his or her own volition, the other child or children must then either comply or resist the bid for authority and control (Cobb-Moore 2012). In either case, a child's feelings of agency are likely pivotal. Our data suggests that whereas specific children's engagement with the rules and desire to police them is an element arising out of their peer culture, it seems their success in enforcing those rules is potentially dependent on their status and support within in the peer group; however the exception seemed to be when the teacher had given a child a symbolic object to denote deputisation or proxy status.

This section looked at how children might use rules to meet their own aims within peer interactions. The following section examines how certain children might use teacher-facilitated games to similar ends.

9.7 Teacher-Facilitated Playfulness: Mat Time Games

Teachers use games at mat time that they feel the children enjoy (Mortlock 2016). Their predominant purpose appears to be teaching and learning games that introduce an element of fun. The plethora of circle-time games is testament to the popularity of this kind of playfulness at mat times (Mary 2012). In the study that underpins this chapter, the games often had a focus on correct and rapid responses, such as being first to accurately identify the answers to multiplication problems.

Those interested in children's peer culture assert that specific children appropriate the teachers' rules and structures to achieve outcomes that teachers' do not intend (Corsaro 1985; Galbraith 2011; Mary 2012). This was confirmed in our study where, more often than not, specific groups of children introduced a competitive element into the games, which was not always commensurate with the teachers' intent of 'having fun'. This manifested in certain children shouting answers when it was not their turn, helping their friends, and deriding other individual peers. Other sophisticated strategies were employed by some of the children such as calling for rule-enforcement and declaring that an injustice had occurred in order to defeat an opponent; for instance, one child answered incorrectly to a question about reading time but immediately changed his answer to the correct response. A peer shouted out that children were not allowed to change their answer, despite having done so

himself on a previous occasion. Some of the games seemed to be ritualised in that there were repeated behaviours and actions over time that were directed consistently at specific children and that also appeared to have the purpose of delineating the peer group into winners and others.

McLaren (1999) asks in such interactions "whose interests does the ritual ultimately serve? …Who benefits the most? Who is marginalised as a result? (p. 85)" It is perhaps no surprise that the children who seemed most enthusiastic about the competitive games were the ones that frequently win them. In addition, many children across all three classrooms made reference to reputation and status arising from effective performance in competitive games. For some children this is a source of anxiety (Mortlock 2016). Children observe the performances of peers and judge their own performance and abilities against them. Status differences might be reinforced; therefore, in highly competitive situations it means that some children might opt out. Indeed, a child's self-concept might also be impacted (Bukowski et al. 2011).

In short, even when a teacher promotes fun above competitiveness, specific children's subgroups might drive the activity into something more competitive (Svinth 2013). Even so, the majority of the children expressed a preference for games that are less prone to aggressive competition and more focused on whole-class cooperative activity (Mortlock 2016). One example includes singing together. Notwithstanding, the teachers infrequently offer such cooperative activities compared with those, which are more prone to becoming competitive (Mortlock 2016).

9.7.1 Peer Culture as an Aspect of the Interactional Milieu at Mat Time

By looking at the mat time environment through the lens of symbolic interactionism and peer culture, this chapter has considered how children are able to exercise peer concerns such as friendship and competitiveness even in the adult-controlled context of mat time. In particular we explored the symbols associated with the interactions at mat time and added a peer culture focus. For instance, certain children use illicit artefacts such as toys to attract peers' attention, and bond through subterfuge. Symbols relevant to peer humour might be used for a similar purpose. A further relevant symbol is the idea of insiders and outsiders to social cliques and the compliance to behavioural norms that might signify belonging. An example given is where a small clique of children feigned disappointment when their teacher separated them. Symbols were also used to communicate power; for instance, the teacher's shaker or pointer were artefacts that denoted a child's position of authority in that moment. Furthermore, specific children symbolically appropriated the teachers' rules, using them to inform on peers.

When these symbols are looked at with peer culture in mind, it is evident that teachers' and children's expectations for interactions are at odds with each other at times. Whereas teachers might hold goals for children's learning, the children

themselves appear to be influenced by two other specific kinds of goals, which are often observed in action within their play cultures. The first type of goals is egoistic, which Corsaro (2012) describes as meeting an individual child's desire and often results in a 'winner' and a 'loser.' This was very much the case when specific children introduced aggressive competition into mat time games in a bid to better peers. Indeed, behaviours such as calling out of turn might seem as a direct challenge to a teacher but likely have their genesis in peer culture. For instance, when a child has a strategy of calling out answers rather than wait for a turn, it does not appear to be a bid to merely disrupt the teacher. It seems more related to a desire to better those children who she or he sees as opponents or to further entrench a positive academic reputation within the peer group. A second example of egoistic behaviour could be seen when children took initiative for policing rules because this arguably relates to power and status over peers. In either case, teachers should carefully consider whether or not such egoistic goals should be supported, especially if it contributes to an inequitable peer power structure.

The second kind of goal that was evident was affiliative (Corsaro 2012) whereby children collectively appropriated the teachers' structure governing mat time interactions in order to play out relationship concerns. This was evident when the teachers described the importance of focus on the lesson whereas certain children were more concerned with sitting with their friends, and establishing a sense of we-ness amongst their sub-group (see Galbraith 2011). When children introduced subversive or furtive elements of playfulness, it was often done in conjunction with their friends. Where there was agreement about shared playfulness relational bonds might be strengthened or aspects of peer culture might be recreated (Lambert et al. 2013; Van Oers and Hännikäinen 2001). There were varying degrees of endorsement, given that some children reported that the distractions were annoying or that they did not want to be distracted but did not seem able to tell their friends. In either case, the initial impetus behind the behaviour appeared to be one of affiliation.

Even though the teachers prioritised learning, children had a strong focus on power and inclusion. Within each class, a clear social hierarchy was evident, with children experiencing a wide range of social support from friends and the wider group; in other words, some children had considerable support whereas others had little. Examples included children wanting to sit near and work with preferred peers, or either encouraging or denigrating the verbal contributions of classmates. Finally, a small group of children took on authoritative and rule-enforcing roles whereby they appeared to utilise power typically associated with teachers. Gest and Rodkin (2011) assert that teachers play a considerable role in the social ecologies of classrooms, particularly when it comes to individual children's influence and social power. Moreover, they suggest that not only do children's peer cultures challenge the rules, roles, and norms established by teachers, but that teachers, in turn, influence peer norms including those that regulate children's social behaviours. A clear example is when a teacher separated a group of girls who distracted each other, legitimising their desire to focus. However, more than this, teachers' attitudes to children's aggression, competitiveness, and social withdrawal directly impact the degree to which children's social subgroups are hierarchical. Overall, it behooves us

to consider that practices that default to aggressive competition might negatively impact a classroom's social ecology.

9.8 Implications for Teaching Practices

The differences in agenda between teachers and children suggest that teachers must critically reflect on their mat time practices in relation to the impact on peer relations. Many teaching decisions might favour specific children more so than their peers. For example, contrary to a small number of children who express enjoyment of competition, the majority of children express preference for more shared, collaborative activities (Mortlock 2016). Teachers express concerns about the overtly competitive behaviours of some of the children, including reprimanding them at times; however, given that the collaborative activities are less frequently offered than competitive activities, it seems that the teaching practices unwittingly give competitive friendship groups a disproportionate degree of agency compared with their less competitive peers (Mortlock 2016). When children demonstrate such competitive prowess, he or she might gain or maintain high status within a group (Fein 2012), which ultimately might negatively impact group cohesion (Howes 1990). It seems then, that deliberately and consistently facilitating activities that engender some form of cohesion or togetherness is important at mat time. One example might include those activities that require children to cooperate in order to achieve a shared goal, ensuring that every child has a role to play.

In addition to considering the trickle on effects of mat time pedagogies to children's behaviour and peer culture, mat time could be made more emotionally safe for certain children. One very pertinent issue is the public nature of mat time where some children experience more social support compared with specific peers. Teachers noted that the children seemed to denigrate specific peers' contributions. Coupled with this, some children will consistently find themselves without a partner or group when a teacher calls for shared work. Overall, teachers must utilise strategies that ensure that those with less social support are included and are able to make valued contributions. Furthermore, how power is expressed in the peer group needs to be considered. In this chapter we present examples where teachers gave management roles to children such as using the shaker to call for silence on the mat; arguably, this is one strategy that allows children with less support to take on a key role. Equally, however, teachers might consider and mitigate ways that children use power in other more subtle ways; for example when they exclude certain peers or use a teacher's rules as the basis for informing on classmates.

Finally, as shown in this chapter, children seek to covertly play around with rules. Although teachers might still require children to be on-task with their focus, it is useful to understand that such behaviours might have a critical role to play in children's peer-bonding and fostering "we-ness" by cooperating in subterfuge. Even so, teachers might also need to be cognisant that specific children might need support in managing such situations, either because they are one-sided (i.e. one peer wants

to play around but his or her friend wants to focus on the lesson) or because the peer group norms are such that children cannot assert their desire to focus.

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Chapter 10
Meaning Construction of Rules in Peer Play: A Case Study of Block Play

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10.1 Introduction

It is common that preschoolers complain to teachers about their peer players in everyday life, especially during peer play time. Why is that? After doing some research on what preschoolers complained about and listening to their explanation, we found it interesting that each side had reasons which he/she thought reasonable enough, however the other side would not accept it. In their negotiation, we see an exciting process in which preschoolers try to explain themselves and understand each other until they make an agreement. The Teaching Guideline for Preschool Education (2001) stresses that it is important for preschoolers to understand and follow the basic rules in everyday life. We believe that the process of negotiation of rules give preschoolers a chance to construct their understanding of themselves, peers and their world. But how does it work? We would like to understand it better in this study.

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10.1.1 Construction of Meanings Is a Prerequisite for Individuals to Shape Personal Identity

The world we live in, is a world of meanings. The construction of meanings is the process of how individuals make sense of knowledge, experience, relationships, and the self (Ignelzi 2000). From the point of view of cognition, the self is one's mental representation of his/her own personality. It is shaped through experience and thought, encoded in memory, reflected and imagined in the physical and social world (Kihlstrom et al. 1988). Some psychologists argue that personal identities a constant process of changing or becoming (Schneider et al. 2014). Meaning and identity are not separated concepts in humanities, on the contrary, they are deeply connected in social and cultural logic. Studies on meaning and identity conclude that meanings are constructed in a set of social relationships or discourses, and thus build and further the individual's self-understanding and identity development (Amuchastegui 1999). That is to say, it is in the process of meaning construction that identities are shaped.

10.1.2 Shared Meanings Are Essential in Interactions Among People Within a Particular Society and Cultural Background

As one's identity is seen as a fluid concept that is influenced by one's multiple social contexts (Gill 1994; Hartman 1994; Hoffman 1992; Miehls and Moffatt 2000), Perez-Foster believes that we need to be more willing to shape psychodynamic meaning through reciprocal interaction, especially when their worlds markedly differ from our own (Perez-Foster 1998). In this argument, reciprocal interaction means to share/exchange meanings to further identity development. Shared meanings are the most important source in the development of identities and we can all be enriched as we dialogue with each other (Miehls 2001; Shields and Duveen 1986). Meaning sharing makes identity development a co-creation of the two participants, in which each ought to be open and allow themselves to be shaped by the influence of the other (Miehls 2001). Sharing meanings does not mean to lose oneself completely or result in merging or mixing, as each one retains his/her own unity and is mutually enriched (Miehls and Moffatt 2000; Bakhtin 1986).

10.1.3 Peer Play Provides Ideal Contexts for Preschoolers to Interact and Learn from Others

Inevitably for young children to understand themselves and their world, they have to construct meanings in social interactions or discourses, where they are regarded as powerful meaning-makers who shape their social and cultural lives (Burke 2013).

Peer play is a vital part of preschoolers' lives and of the society into which they are growing. Interactive peer play experiences are universal: Preschool children from all backgrounds naturally play with one another (Zigler et al. 2004). Through interaction with peers in play, children are able to move away from egocentrism towards acknowledging realities and perspectives that are different from their own. These repeated interpersonal interactions, especially those involving prosocial behavior or aggressive encounters, are important experiences that impact children's overall cognitive and social development (Hartup 1983; Ladd Price Hart 1990). Children at play relate with their peers in a reciprocal social situation that contributes to their social growth by developing a better understanding of self and the world (Cohen 2017). However, Bakhtin's notion of dialogism has received less attention in the analysis of play (Cohen 2015). Consistent with Bakhtin's notion of "ideological becoming of a human being" (Bakhtin 1981 p. 341), children acquire a particular sense of self-understanding by hearing the voices of others and responding to them in conversational contexts. Our paper will draw upon Bakhtin's concept of dialogism to explore how children construct meanings and acquire self-understanding through interactions in peer play.

10.1.4 Rules of Peer Play Are an Arena for Young Children to Construct Meanings of Their World

Rules are everywhere in the society. As part of the society, classes are also regulated by rules. In Chinese preschool classes, rules, play an important role in class-management, child-socialization and guarantee of equality and freedom (Chen 2007; Wu 2003). Rules of play in this study include all the do's and don'ts in peer play. There are different kinds of rules and different rule sorting logic, and finally, we adopt Chen and Qiu's sorting logic to divide rules of play into four types: safety-rules, order-rules, relationship-rules, playing-rules (Hou 1999; Chen 2011; Hirata 1997; Qiu 2009). Rules of play occupy an important place in children's play in the social sense, and are derived from play, in which appropriate voice, behavior as well as order are required. Rules are not objective, they are ideally co-created by teachers and children through dialogical interactions. In the process of meaning construction of rules, children gain understanding about themselves, their relations with others and with the world. By mutual dialogical interactions on thoughts and experiences, rule-construction of play becomes the arena for young children to make meanings about self and their world.

Considering time and financial resources, not all play spaces are involved in this study. Taking all factors into account, we choose block play for the children's meaning construction context. Since unit blocks were introduced to the Chinese continent, they have been a popular material for young children. Block play provides the social activity context in which children practice social roles and learn the skills needed to be a member of the culture as a social being (Cohen and Uhry 2007).

There have been researchers finding that block play nurtures children's language as well as group work, and helps children to develop important social skills and higher levels of critical thinking (Cohen and Uhry 2007; Cohen 2015). However, there are few studies of block play that have examined the value of blocks from a Bakhtinian perspective (Cohen 2015). Children use dialogue and voicing in their social world of play. As they participate in block play, they encounter and appropriate an increasing range of voices and their associated perspectives on the world (Cohen 2015; Duncan and Tarulli 2003). Our study is aimed to acquire a comprehensive understanding of preschoolers' meaning construction of rules in the context of natural block play. In our study, Social constructivism theory and Bakhtin's dialogue theory are employed to interpret the phenomenon of meaning construction of preschoolers. We first investigated the rules that preschoolers follow in block play and divided them into four types using Chen and Qiu's sorting logic. On the basis of investigation, four typical cases of rules were collected. In these cases, we try to understand the following questions: How do preschoolers see their world and themselves? How is meaning constructed in rule-related conflicts with peers? What do they learn of themselves, peers and their world in this process?

10.2 Theoretical Framework

10.2.1 Social Construction of Meaning and Identity

This study is based on the notion that humanity and society are socially constructed, consistent with social constructionism. That is to say, meanings and identities that we discuss here are all socially constructed in a social context. Social constructionism centers on the notions that human beings rationalize their experience by creating models of the social world and share and reify these models through language (Leeds-Hurwitz 2009). We can see the words experience, create, model, share, language that give us the idea to study how meanings and identities are socially constructed.

Meanings and knowledge are not objective or discovered, they are constructed in interaction with object and thoughts (Crotty 1998). Grice suggested that meaning is intentional, which means that meaning reflects intention of the speaker and is determined by his/her intention (Grice 1989). In research on meaning construction in institutions and organizations, Weick developed the concepts of sensemaking and sense giving, which were expanded by Gioia and other researchers (Weick 1988; Weick and Bougonm 1986). Sensemaking is a process of constructing and understanding in context, which emphasizes the formation and reconstruction of meanings (Maitlis 2005). Sense giving refers to the meaning transfer and influence on others in order to make their reinterpretation conform to the influencer's expectation (Gioia 1991). These two processes of meaning construction inspire us to find a new way to identify how meanings are constructed by teachers and preschoolers.

People make their social and cultural worlds at the same time these worlds make them." (Fairhurst and Grant 2010 p.173). This means that in the social construction

of meanings, identities are reconstructed at the same time, which is vital to children's identities and their views of the world. To shape or further one's identity, a dialogical mode of interaction is emphasized (Bakhtin 1986; Bakhtin 1993). Researchers highlight the dialogical interaction of individuals in construction of meaning and identity. A study implies that the construction or development of identity can be recognized especially when dialogical interaction of multiple experiences happens (Miehls 2001).

10.2.2 Bakhtin and Dialogue

Social constructionism understands the "fundamental role of language and communication" and this understanding has "contributed to the linguistic turn" and more recently the "turn to discourse theory." (Fairhurst and Grant 2010 p.174). Further, "language does not mirror reality; rather it constitutes it." (Fairhurst and Grant 2010 p.174). Bakhtin tends to build connection between language and meanings.

Bakhtin's dialogical theory is rooted in social constructionism. According to Bakhtin, the meaning constructed in any dialogue is based upon their personal understanding of the world influenced by the socio-cultural background (Bakhtin 1986). As Gary and Kim explains, "the entire world can be viewed as polyglossic or multi-voiced since every individual possesses their own unique world view which must be taken into consideration through dialogical interaction" (p. 54). Bakhtin noted that no single exchange or utterance can be understood outside a particular context, which involves not only the particular life histories of the communicating individuals but also the situation in which the communication takes place (Bakhtin 1986). In peer play, to understand how meanings of rules are constructed, play context as well as preschoolers' different socio-cultural background and peer relations which is basic to experience must be taken into account. There are already studies applying dialogical theory to construct meanings of society and culture (Amuchastegui 1999; Bielo 2004; Miehls 2001). This provides us with a new way to understand how meanings of rules are constructed in peer play through dialogues among preschoolers.

In Bakhtin's dialogical theory, interpersonal dialogues are highlighted for the influence on each other. "Each kind of utterance is filled with various kinds of responsive reactions to other utterances of the given sphere of speech communication." (Bakhtin 1986 p.91) Dialogical interactions among preschoolers carry on during or after play, and that is when we can see rule negotiations, in which preschoolers are influenced by each other. Bakhtin respected the influences of others on the self, especially on how a person thinks and sees him or herself truthfully (Bakhtin 1929), which means a lot in shaping personal identity. He lays the foundation of the importance of the dialogical exchange in enhancing self-awareness (Bakhtin 1986, 1993; Saari 2000). That tells us that in dialogical interactions, dialogical exchanges of peers in play will influence preschoolers' self-understanding and finally influence their identity.

10.3 Research Design

10.3.1 Method

Data in this study were collected by observation and informal interview. Initially, a wide range of informal interviews were carried out to investigate the rules that preschoolers follow in block play. We interviewed both teacher and child participants. For the teacher part, teachers were asked to recall all the rules in block play and explain the meaning of rules. For the child's part, children were encouraged to recall what they could or could not do in block play and why. These data provided us with a whole understanding of the four types of rules in block play and laid the groundwork for further research.

On the basis of preliminary investigation, we conducted an in-depth study on meaning construction of rules by means of observation and interview. Twelve classes were observed and each class had an hour observation of block play. Twelve hours of peer-play data was collected in total and only clips related to rules are chosen after selection. Interviews of teachers were conducted when necessary to provide more information of preschoolers' rule-practice. Materials of observations and interviews were recorded and transcribed in text, out of which four typical cases were selected according to the four types of rules in play. We analyzed the four cases to examine how preschoolers constructed meanings of rules and what influence it has on preschoolers' self-understanding.

10.3.2 Participants

Two public kindergartens in Beijing, A and B, were selected to participate in this research. In each kindergarten, two classes were randomly selected from 3–4 year, 4–5 year, 5–6 year classes respectively. In total 12 classes of two kindergartens were selected. In the 12 classes, 36 teachers participated in this research; each class with two teachers and one nurse. In each class, four children were randomly selected for informal interview and all children in block play were involved in observations.

10.3.3 Data Analysis

Rules proposed by children and teachers were recorded and transcribed. We made inductive coding of the rules to classify them into the four types to gain a better understanding. The four typical cases out of the four types of rules were read carefully and coded using terms from materials and the theoretical analysis framework.

Based on social constructionism (meanings are socially constructed), an interpretive approach was adopted in the qualitative analysis, which was sited in a

naturalistic context—classroom. The cases were analyzed by means of discourse analysis. This analysis method has been broadly used in classrooms and other education situations to analyze how knowledge is socially constructed (Gee and Green 1998). In this research, we use discourse analysis to focus on dialogical contexts, voice intention, negotiating strategy, as well as the way preschoolers see the world. Based on this, we will try to explore how meanings are constructed in dialogues and the changes of preschoolers' world view.

10.4 Findings

10.4.1 Four Types of Rules in Block Play

All 130 rules proposed by teachers and preschoolers are divided into four types: safety-rules, order-rules, relationship-rules, playing-rules (Hou 1999; Chen 2011; Hirata 1997; Qiu 2009).

Safety-rules, which are related to life and safety of preschoolers, include 'Don't hurt anyone with blocks', 'Take both sides of blocks', 'You can't push others' etc. Order-rules, which refer to the order of collectivity, include 'Don't make noises', 'Don't rush around', 'Don't disturb others' etc. Relationship-rules, which refer to good relationship with others, include 'negotiating', 'cooperating', 'no fight', 'help others' etc. Playing-rules which refer to quality of play, include 'The number of players is limited', 'Make plans before play', 'Use what you need' etc.

10.4.2 Four Cases of Dialogues

10.4.2.1 A Safety-Rule: Don't Hurt Anyone with Blocks

This case happened in a 4–5 year class. When the block play began, there were already some buildings from yesterday. Children started to play in different areas after breakfast. "Ow! You hurt me!" We heard a scream from the block area and the teacher checked and dealt with the wood hurriedly. Afterwards, the two children were asked to explain about the incident.

Phase1 T3>C10, c11: What happened just now?
C10>T3: I want to take down one building of yesterday and build a new one, but he makes trouble with me!
C11>T3: I didn't make trouble! I want to help him!
C10>C11: You did! I don't need your help!
C10>T3: I stopped him and he hit me with a block.
T3>C11: Did you?
C11>T3: I want to play but he doesn't allow.
C10>C11: I don't want to play with you. Why don't you build your own?

Phase2T3>C11: Ok, let's make it clear. You like your friend and want to help and play with him. Did you tell him about your thought?
C11>T3: No. But he used to play with me.
T3>C11: But he wants to play alone this time, and you hurt him because of his different thought from yours. Now your friend is so sad and angry with you.
C11>C10: I'm sorry to hurt you. Will you forgive me?
Phase3C10>C11: Ok, I forgive you. But you have to ask me if you want to play next time, and never hurt me with blocks! If you promise, I will play with you.
C11>C10: I promise, let's build a parking lot together!
C10>C11: Let's do it!

This case is situated at the start of the block play, when a conflict between two boys occurs. This dialogue is divided into three phases. There are three voices including the teacher's voice in this dialogue, which makes the meaning construction of the rule much more enlightening. A strategy of initiating a discussion on the same logic is used by the teacher to solve the conflict and make the rule. We might consider that it is definitely child C11's fault, however after listening to his words, he has his reason based on his experience and thought. In phase 1, we can see child C10 blames C11 about the behavior of disturbing and hitting, while child C11 tries to defend himself by saying that he just wants to help and play with C10. They are actually expressing themselves in their own thought but not in the same logic. Then in phase 2, the teacher proposes a question, which pulls them back to the same logic. Still, child C11 defends himself because of his previous experience. The voice of the teacher here gives Child C11 a new experience and understanding of others, which is vital for child C11. He learns to feel his friend's feeling and finally admits his own fault and makes an apology. In phase 3, we find it interesting that child C10 proposed two rules based on emotional relationship to make their play friendlier. From the invitation by child C11, we can see that he has already followed the rules. By dialogical exchange among the two children, meanings are shared that other's thoughts need to be respected and to never hurt others with blocks.

10.4.2.2 An Order-Rule: Donot Rush Around

Five 5–6 year old preschoolers are involved in this case. Three of them (C12, C13, C14) built a big fortress together. As the block play continued, they started an imaginary play of war, with a block in hand as gun. When they were rushing and dodging around the block area, a tall building by two children (C15, C16) was accidentally knocked down by C12. It triggered a significant dialogue among these children.

Phase1 C15>C12, C13, C14: Hey! Stop rushing around! You knocked our building down.
C13, C14>C15: It wasn't me!
C12>C15: It was an accident.
Phase2 C16>C12: If you don't rush around, you wouldn't hit our building. I'm going to tell our teacher!
C12>C16: (He holds her arm.) Don't go. I'm sorry. I didn't mean to knock your building down.
Phase3 C15>C12: It's no use to apologize. Our building was already knocked down.

C12>C15, C16: I will help you to build another one. Please tell me how to build it. (He starts to build.)
Phase4 C15>C12: Okay, we forgive you this time. But you need to stop rushing around. What if you knock the building down again?
C12>C15: I won't.
C13, C14: Let's help together.
(after finishing the building)
Phase5 C12>C13, C14: Let's have another play without running.
C14>C12, C13: How about driving cars in the building?
C12>C13, C14: It sounds interesting.

It is interesting that in this case only children's voices are involved. They find a way to solve their conflict and make their own rule. In this case, a conflict occurs in the process of free block play, when C12 knocked down the building of the other two. Psychologically, C12 is at a disadvantage while C15 and C16 are at an advantage, as it is obviously C12's fault. We will see how psychological balance strategy is used in conflict-solving and rule-making. Before dialogue, the children have an agreement that knocking down buildings of others is not right. In the first phase, the reaction of the three children (C12, C13, C14) was to get rid of responsibility, but the other two (C15, C16) donot accept it.

In phase 2, C16 emphasizes C12's responsibility and plans to inform against him, which is intended to give him psychological stress to make him apologize. To avoid moral condemnation, C12 realizes his fault and compromises to apologize. Still not psychologically balanced, in phase 3, C15 shows a tough attitude and further emphasizes the bad influence on them for more compensation, which gives C12 more psychological stress.

To get a moral and emotional balance, C12 decides to make up for his mistake. Until now, they form a shared meaning that mistakes need to be committed and repaired. In phase 4, we can see a softer attitude of the two children (C15, C16). To make a pleasant play area, C15 proposes one more request 'Do not rush around', which regulates their play. Does this rule have the same meaning to the others? In phase 5, we see that the three (C12, C13, C14) change their play to a quieter one to obey their promise. Finally, 'Don't rush around' become their rule to follow together. In this process, multiple voices are heard in the conflict solving, and by dialogical exchange, a psychological balance strategy plays an important part in the meaning construction of the rule. Due to the influence of C15 and C16, C12 changes from avoiding mistakes to admitting and correcting them and learn to respect others' work.

10.4.2.3 A Relationship-Rule: Don't Contend for Blocks

Preschoolers in this case are in 3–4 year class. In the interview, the teacher says that when children were in the 3–4 year classes, we have made the rules: "First come, first served" which means that whoever comes first, plays first. "If anyone else wants to play, he/she has to ask for permission. Contending for blocks is common in 3–4 year children. When they are in 4–5 year classes, they have understood the

rule, and we start to encourage children to share and play with others." During observations, we saw this case at the beginning of block play.

Phase1 C8>C9: I got it (a block) first!
C9>C8:No, it's me first!
(The two children hold the block.)
C9>C8:Our teacher says we should share with others!
C8>C9:I took it first, stop fighting with me!
(Child C9 asks for teacher's help.)
Phase2 C9>T2:Miss Chen, he won't share with me!
T2>C9: Has he finished playing yet?
C8>T2:I haven't. He's just contending for it!
T>C9:You'll have to wait for him to finish before he can share it with you.
C9>T2:But I saw it first!
C8>T2:I got it first!
T2>C8,C9:Seeing it first doesn't count.
Phase3 C9>T2:But I need this block.
T2>C9:If you really want to use this block, how can you talk with him?
C9: Emm…
T2>C9:Try to talk with him and see if he can give it to you. You can start like this: I really want to use this block. Can you lend it to me?
C9>C8:I really want to use this block. Can you give it to me?
C8>C9:All right, you can play with it.

This case occurs when two children contend for one big hollow block and this dialogue is divided into three phases. In the first phase, the two children express their intention to get this block by arguing about "who is first" and "whether to share or not" from their own point of view, and both the two sides make no concessions. In phase 2, it is the involvement of the teacher that provides a strategy of experience in sharing to solve their conflict. In this part, the two children repeated their words in phase 1 to express their intention of getting the block. The difference is the teacher's words of what is sharing and what "First come, first served." means. After they understand the two perceptions of the same meaning, the two children stop their contesting, and child C9 turns the dialogue into "how to ask peers for permission?". Similarly, with the teacher's experience of sharing, child C9 learns to ask for permission and finally gets the block. In this process, the child's experience of rules and how to get what he wants is enriched. In the practice of asking permission, he gains the awareness of himself and others and learns how to respect others and deal with peer relationships in block play.

10.4.2.4 A Playing-Rule: Use What You Need

This case happened in a 4–5 year class. In the block area, a child was building a house, he tried a block, and found it inappropriate. He put it aside and tried other blocks. There were more and more blocks on the ground as time went by. At the end of play, children from other areas had all finished packing up work and were sitting and waiting for the children in the block area. They were so worried, but there were still a lot of blocks lying on the ground. The teacher came and talked with them.

T1: Why are you taking so much time to pack up?
C1>T1: C2 littered many blocks here and there.
C2>T1: There are too many blocks on the ground.
T1: Why are there so many blocks on the ground?
C1>T1: They are all from C2. He put them on the ground.
T1: Why didn't you use them to build?
C2>T1: We built together, I took blocks here and C1 used them to build.
C1>T1: I tried, they were not what I need, but he didn't take them back.

In the interview, the teacher says that after a period of observation, the phenomenon of laying blocks around is common in children's play. "It was a good time to talk about making rules to solve the problem and not to throw blocks around."

T1:The packing up in block area today has spent so much time that we all have to wait for them. They say this is because there are many blocks on the ground but nobody uses them. What if everyone took a block without using it, and just left it on the ground?
C3: There will be more and more blocks and the ground will be in a mess.
T:Then where should we put the blocks that we don't need?
C4:They should be put back.
C5:They should be taken back to the boxes.
T:So what kind of rules shall we make to ensure that everyone does not lay blocks around?
C6:Only take and use blocks that we need to build.
T:What if someone wants to take many kinds of blocks to try and see which one is appropriate?
C7:He can take many blocks to try, but if he doesn't need the blocks, he has to put them back.
T: So we have our rules: we should use blocks that we need, and if we don't need them, we should put them back.

After the talk, the teacher says that, most children follow the rule and some children need to be reminded of the rule. There are times, when one child finds that there are too many blocks on the ground, leaving him a small place to build. He will say to others, 'It's such a mess here. There is no place for building. Let's tidy them up and build together.' If someone takes a lot of blocks, others will stop him, 'There are many blocks here already, stop taking blocks and put them back.'

This dialogue is situated in an unpleasant context of anxiety and waiting as the packing up work takes too much time. A strategy of creating a dialogical situation on the same meaning by the teacher promotes construction of the rule. In the first part of dialogue, by using three "why" questions, the teacher and preschoolers share the reason that it is the useless blocks laying around that makes them spend a longer time to pack up. From the two children's voices we can see that children tend to consider more about themselves and ignore the influence on others and the whole block play area. In their worry and waiting, preschoolers are emotionally motivated to make rules to avoid the same unhappy situation. The second part of dialogue then occurs.

The teacher creates a dialogical situation to promote the rule-construction by sharing the problem with the class and proposing questions which are based on children's experience. In the interplay of multiple voices of peers, meaning of the rule is constructed by influence of perspectives on each other. We can see the world

view change of preschoolers as they start to care about their block area and how to make their play there joyful and orderly. In the following practice, most children follow the rule that they have made collectively. When a similar context appears, children may use their own language to express the rule and encourages peers to follow it.

10.5 Discussion

Like laws to society, rules play an important part in peer play. They make peer play more smooth, harmonious, orderly and joyful. Children's learning in play includes learning rules, which is an important aspect of children's socialization. This has been highlighted by Hakkarainen (see Chap. 2, in this volume) seeing the importance of the relations in peer play and Williamson, Lovatt and Hedges (see Chap. 13, in this volume) explain the playfulness and theorizing of the rules and power in peer play. In the learning of rules, children start to look at themselves, their relationship with others, the world around them, and their relationship to the world.

10.5.1 Meanings of Rules Are Constructed in Contexts of Unpleasant Experience of Play with Peers

According to Bakhtin, both personal understanding of the world influenced by preschoolers' socio-cultural background and playing context should be taken into consideration in meaning construction of rules. Take the four cases together, we see that it is the situation of conflicts or negative emotional experience with peers in play that motivates preschoolers to rethink about themselves and try to seek consensus to make their world smooth. As Bakhtin suggests, mutual voices to contexts of real-life events can lead to understanding (Bakhtin 1986).

Children from different families have different experiences and everyone has his/her own unique view. In these real situations, they try to express what they think and how they feel, which provide materials to construct meanings, and this the start of meaning construction. Based on their expression, equal and free talks are born. These dialogues are either naturally formed or created by teachers. For example, in case 4, the dialogue is initiated by the teacher through the open-ended questions which enable children to express their own ideas of the rules in the block play. Teachers can be facilitators in preschoolers' expression and communication to create conditions for the possibilities of children's learning about the importance of the rules in play.

10.5.2 Meaning Construction of Rules Are Based on Dialogues and Meaning Sharing Among Preschoolers

As we can see from the cases, in the context of peer play, meanings of rules are constructed in dialogues. In the crisis of the four cases, multiple voices which are related to preschoolers' socio-cultural background, experience and thought can be heard. These voices are meaningful to themselves but not necessarily meaningful to others. Meaning reflects intention of the speaker (Grice 1989) and lies in the continuous understanding and interpretation. To transfer meanings to others, preschoolers try to seek strategies to make others' reinterpretation conform to their expectation. As showed in the cases, strategies of self-expression, reasoning, and psychological balance are conducted to dialogue with peers and finally meanings exchange. While meaning exchanges, the unfinalized self begins to grow. In the negotiation of two or three forces, preschoolers learn to understand peers' thoughts and feelings and start to reinterpret the meanings and sometimes make compromises if necessary. Meanings are thus shared in dialogues and rules of play are made collectively.

It is worth mentioning that psychological and emotional stress seem to motivate the process of meaning sharing. Emotion gives people feedback about what is important and meaningful, and what is good or bad for them (Frijda 1986; Izard 1977) and serves as an organizing force to make one an active meaning maker (Leslie and Juan 2001). In the four cases, psychological and emotional stress motivate preschoolers in crisis to change their views and make compromises to make a better relationship or a better play area. Finally, on the basis of dialogues, meanings are shared with peers and new rules are constructed.

10.5.3 Preschoolers Disengage from Self-Centeredness in the Process of Meaning Construction of Rules

People "make their social and cultural worlds at the same time these worlds make them." (Fairhurst and Grant 2010 p.173). Preschoolers' meaning construction of rules is also construction of views of themselves, peers and their world. In this fluid process, preschoolers develop their self-identities, their relations with peers and the world.

In peer conflicts, double voices can be heard, as both sides are self-centered. They look at the world and others on their own perspective, and pay less attention to others' thoughts and feelings. In these voices, each side tries to express his/her own feelings, thoughts and needs from his/her own world view which is bound to experience. In the process of dialogues and meaning sharing preschoolers begin to listen and understand peers' feelings, thoughts and needs. For a better relationship with peers, they start to step out of themselves and learn to care about others and respect others' thoughts and feelings.

They develop from value themselves only to value relationships with others and begin to care about their impression to others. In meaning construction, preschoolers also begin to gain a public awareness. They start to learn to care about their world, such as how to make their block area orderly and make their play smooth and joyful. We see this as having access for preschoolers to disengage from self-centeredness and gain social competence to become socialized.

10.6 Conclusion

Rules play an important part in peer play. Preschoolers develop their sociality in rule learning by looking at themselves, their relationship with peers and their world in rules related conflicts. Rules related conflicts are an arena for preschoolers to construct meanings, on which they express their own thoughts and feelings, and they see peers and the world from their own perspective. Dialogues and meaning exchanges are made in self expressing strategies of both sides, and finally meanings are shared and rules are constructed. Teachers are important facilitators to make conditions for the possibilities of preschoolers' learning about the importance of the rules, and trigger dialogues for preschoolers' active construction of meanings. In this process, the unfinalized preschoolers start to disengage from self-centeredness and learn to care and respect others and their relationships. They also start to develop public awareness to care about the relationship with their world and learn to regulate their behavior in play.

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Chapter 11
Mothers' Attitudes Toward Peer Play

Milda Bredikyte and Monika Skeryte-Kazlauskiene

11.1 Introduction

After many years of researching children's play: exploring its developmental potential for children and adults, creating tools for measuring the levels of play and self-regulation (Hakkarainen and Bredikyte 2018; Hakkarainen et al. 2013; Hakkarainen and Vuorinen 2018) and as a result developing narrative play and learning approach (Bredikyte et al. 2017), recently we started a new line of inquiry. Until now, the focus of our research projects was on children, their play and development, adult support strategies and interventions. In our new project, we turned our attention to the adults' attitudes toward children's play. More specifically, we wanted to hear why some parents value children's play. The reason to do so came from our research activities on play and teaching activities with the students and professionals. During last 15 years in the research laboratory of play we have always met parents, who consider children's play as valuable activity. On the contrary, practitioners from the field are constantly telling us, that parents, bringing their children to ECEC institutions are more concerned about children's learning and school readiness than play. This situation made us to think, that we should examine more carefully opinions and arguments of different groups of parents concerning their children's play.

There is not much research in Lithuania related to children's peer play in general. Evaluation of children's play level and self-regulation (Hakkarainen et al. 2015), anthropological studies of children's play (Dambrauskas 2006), historical studies of toys (Blaževičius 2008), few studies evaluating children's play in kindergartens (Keruliene 2017; Skeryte-Kazlauskiene et al. 2017). Not a single research exploring

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peer play, parent's attitudes on children's play or learning. This is why we choose to explore parents' attitudes toward children's peer play.

11.1.1 Why Explore Parental Attitudes?

Psychological discussions have generally pointed to the importance of parental beliefs in shaping child development, but the research literature covering parents' attitudes and beliefs about play and play-based learning is scarce and of exploratory nature.

More than two decades exploring the cultural basis of children's play Roopnarine (2012) stated, that parental beliefs about the value of play and parent-child play are shaped by the culture, this idea is also supported by other researchers (Fisher et al. 2008). Respectfully, parents' beliefs about the value of play for child development and the rates at which children engage in different modes of play vary considerably across cultures (Fisher et al. 2008).

According to Qadiri and Manhas (2009), majority of parents believe that a play-based approach is the best method for imparting early childhood education, but they prefer an academic based curriculum to provide the essential skills needed to enter primary school. Similarly, another research by Shiakou (2018) reported inconsistent parent attitudes – the parents valued play over the academic training, but this was not reflected in the daily after-school routines of their children. O'Gorman's and Ailwood's (2012) study of parent's views on play in Australia also revealed that parents held varying definitions of play and complex and contradictory notions of its value. We understand that parents' attitudes are related with the attitudes of ECEC professionals. The research (Rengel 2014) on teachers' attitudes indicate that, alongside contradictory conceptualizations of play in theory, preschool teachers have contradictory attitudes towards play, and this is reflected in their practice.

When parents have a solid understanding of play and its potential, their children actually attain higher levels of play (Fogle and Mendez 2006; Hirsh-Pasek et al. 2010). According to some play researchers (Bodrova and Leong 2015; Brėdikytė 2011; Ryabkova et al. 2017) "mature" or "fully developed" forms of play are the important indicators of school readiness. Smirnova's and Gudareva's (2004) research revealed, that less and less children develop mature forms of imaginary (role-play, pretend, sociodramatic play and etc.) play before school. This means that they might not reach the sufficient level of general creativity and imagination; motivation, volition and self-regulation; social understanding and etc.

Among the research on parental attitudes towards children's play (Shiakou 2018; O'Gorman and Ailwood 2012; Little et al. 2011; Veitch et al. 2006) we did not find research focusing on mothers observations of siblings peer play. As human interactions are of vital importance for development, possibilities to have peer relations with your siblings give some advantages (Cutting and Dunn 2015). There is evidence that constructions of shared fantasy with another child depend on the quality of the relationship between the children (Cutting and Dunn 2006), not on share fact of having some peers at home. There is also evidence that play in mixed-age groups gives more

possibilities (Gray 2011) to get more role models, emotional support and practicing of leadership. There is some knowledge about siblings' life, though not so much research pay attention to siblings shared peer play. Our research project was organized to fill this existing gap. We aimed to investigate the understandings of the mothers about the importance of play activity for their children. Instead of formalized questionnaires, we decided to ask the mothers open ended questions through interviews and allow them to speak freely. We sought to get deeper insights from the mothers and to find out: *what are the most significant and valuable aspects of peer play for their children,* and *what arguments can mothers provide to justify their thinking*?

11.2 Research Design

11.2.1 Participants

In this study, we invited families to participate in our research on children's peer play. For some reason only mothers expressed willingness to participate. We have deliberately chosen a very small number of mothers (n = 6). It is a purposeful homogeneous sample and the results of our research cannot be generalized to all Lithuanian mothers. We sought mothers with two or more children, who spend significant amounts of time playing together. It was also important that the mothers have a positive attitude towards children's peer play. We expected that these mothers would be experts of children's peer play and that they could give us some valuable insights into the topic.

We invited in total six mothers from our neighborhood to participate in this study, and all of them agreed. The participants had from 2 to 4 children of various ages (from three to twelve years) and all of the children were described as "good players" by the mothers. Mothers' mean age was 39 years and all of the participants have university level education. Mothers' and children's age and gender are shown in the table below (Table 11.1 Participants).

Table 11.1 Participants

Mother's pseudonyme	Age of the mother	Age and gender of the children	Number of children
Mira	40	12-years-old boy, 10-years-old girl, 6-years-old boy	3
Ina	44	(20-years-old girl∗), 9-years-old girl, 6-years-old boy, 3-years-old girl	(4∗) 3
Indra	34	8-years-old boy, 6-years-old boy, 5-years-old boy	3
Irma	37	8-years-old boy, 7-years-old boy	2
Vilma	39	8-years-old girl, 6-years-old girl	2
Ana	40	6-years-old boy, 4-years-old girl	2

Notes: ∗the oldest child was not involved in the interview analysis

11.2.2 Method

During the semi-structured interview, we asked, where, when and what the participants' children usually play at home, what is valuable for them in children's peer play and what mothers can tell about children's relations during play.

Semi-structured interviews lasted from 25 to 50 minutes, a total of 3.5 hours audio taped six interviews. These were conducted in a quiet place at the participants home or working place. The mothers consented to participate in semi structured interviews.

11.2.3 Data Analysis

Both investigators transcribed the interview material and wrote down ideas and theme categories for the analysis. The interviews were read and re-read, reoccurring patterns extracted from the interview texts. Further, a list of potential themes and sub-themes was created. The three main themes that are relevant to children's peer play are discussed in this chapter.

11.3 Results and Discussion

The primary purpose of this study was to investigate attitudes of the mothers' concerning their children's play at home. From the interview data we wanted to single out *the most significant and valuable aspects of play activity*. A secondary purpose was to learn more about *the types of children's peer play*, *the forms of parental support* for their children's peer play and *how conflict situations are solved* in play.

In the following paragraphs, we will discuss the main findings that were extracted from the interview data in the course of the analysis. We will discuss them considering the most important theoretical ideas and recent research on children's play. We will start from the types of play and then proceed to the most significant aspects of children's peer play as described by the mothers.

11.3.1 The Meaning and Significance of Peer Play for the Children as Described by the Mothers

We singled out several important aspects of children's peer play from the interview data. These aspects highlight the significance of peer play for the children as described by their mothers: (1) peer play releases children's creative potential; (2)

peer play as a space where children develop long-lasting mutual relationships; (3) peer play as constantly changing activity.

11.3.2 Play Activity Releases Child's Creative Potential

The first very strong message that came from the interview data was mothers' claim, that play activity provides children with the opportunity to realize their creative potential.

All mothers distinguished creativity as a very important aspect of peer play activity. Play is the burst of creativity, "creativity flourishes" through play. From mothers' point of view, play is children's "real life", because only when playing children reveal their real selves. Mother Mira connects this with the freedom that children experience while playing, she believes, that play gives "real freedom" to the children. The freedom to explore those aspects of life that are important and interesting for them.

Theoretically, imaginary or pretend play fosters the development of cognitive and affective processes that are important in the creative act. Relations between play and creativity are studied widely by Russ (2003), Saracho (2002), Howard-Jones et al. (2002) and many others. The mothers' participating in our research project also captured this very important connection. Several mothers were surprised to see how creatively children "process" their everyday experiences transforming them into play actions. Mother Ana described her children's play "when playing with an imaginary stove, […] cooking […] I can see where from they took that example". The same with the cars and trains "after seeing the cars and trains in the city [the child] introduced them into the play". Mothers refer to an important peculiarity of pretend play when children transfer their real-world experiences into imaginary make-believe situation.

Some mothers noticed, that the power of creativity in play spreads like a "contagious disease". Mother Indra: "the first one [the oldest boy] starts and involves two younger brothers. And recently the second one seems got that impulse [of creative play], because he did not have much of his own." Mother Indra concludes that this must be "brother's positive influence – he is now also developing. He learned [to play], but he was not playing very creatively". This mother is convinced, that her younger son learned to play creatively from his older brother.

The mother's example is an illustration of imitative learning, which is a part of cultural learning described by many scholars starting from Vygotsky and more recently researched by Tomasello and his colleagues. Tomasello's (2016) research is revealing, that young children are really concerned to copy the exact actions of others (adults and peers), including arbitrary gestures, conventions, and rituals. Being accepted to play activity for the young children means belonging to a peer group. Interestingly that the mother is talking about playing "creatively". She is admiring not plain imitation, but the ability of the child to create his own "creative play".

The following example sheds light on how this creative play is co-constructed between the peers. Mother Mira is revealing how children become involved in joint peer play. "Usually one child starts the play, then the next joins even if he/she was not interested at the beginning, and then the third one… Every child brings something new to the play and the activity seems to grow and expand incorporating the ideas of all children". Sawyer (1997) in his analysis of children's play defined it as an improvisational activity and compared with the activity of jazz musicians. He also points out that play is important because it is *unscripted* and allows the children to practice *improvisation*. Sawyer (2001) concludes that there are reasons why play has to be random and chaotic. Mother's description of peer play captures the essence of play improvisation: the first child brings and interesting theme, the next – accepts the theme by joining play and enriches it with his idea or action, and then the third joins with his proposal. If each proposal is accepted, the play moves forward, if not, it stops.

The same mother noticed that sometimes peer play activities might last for a longer time. Such themes as "secret agents", searching for the hidden "treasure" were lasting for several weeks during summer. Mother Mira named long-lasting play activities as the "highest level" of her children's play. Several other mothers characterized such play episodes as "honey for my heart" and "peace and calmness" at home.

Bredikyte (2011) points to the continuity of play as one of the important criteria defining mature forms of play activity. Long-term play activities indicate, that children managed to capture really exciting theme and that they have developed necessary skills of co-regulation of their actions and ideas.

Mother Irma revealed that siblings are not always playing together. She described how the refusal to play by the peer becomes a stimulus to develop own play activity:

> Often, they might play in parallel imitating each other. The younger one starts playing while the older one is away. When he is back, he wants to join the play, but the younger brother says, no! and then the older boy starts creating his own play imitating the younger brother's play activity. […] usually one child starts creation of a new play activity and the other child joins if accepted, but if not, he starts building his own play imitating the brother. (Mother Irma).

The mother notices how the situation of non-acceptance does not necessarily end with the conflict or the retreat of the child. In this case, it encourages the child to look for the alternatives. This episode reveals that the child needs to "work" hard in order to uncover his creative powers. The presence of a sibling and his creative example stimulates to act. At this point, just imitation is not enough, the child needs to use his/her imagination, real-life experiences and develop own play with siblings.

The idea of "play as the root of all creativity" in humans was expressed by Vygotsky (1931/1968/2004). Mothers in their interviews underline the 'productive' aspects of creativity. They notice that children are not directly imitating reality, which would be 'reproductive' creativity, but rather transforming real events into creative play actions. According to the mothers, peer play provides children with the opportunities to experience their ideas, to create the worlds that are "in their heads". Mother Mira concluded, that "play empowers the children more than other activities". During the interview, she was talking about "real freedom" and the "power to create the world" in children's sibling peer play.

One mother said that peer play is children's "school of life" as children expand their experiences playing with other children. Other mothers see play as a perfect possibility for "self-learning" and "self-creation". In one way or another every mother mentioned "learning" aspect of play but all of them stressed independent and free learning.

Mother Ana explained, that in play children get to know physical world better, can "experiment and explore different materials getting ideas from each other". They also "learn how to play" meaning that they become better players, when playing with siblings. The younger learns from the older, they imitate each other during the play, borrowing each other's ideas, and, at the same time, constantly challenging each other.

Mothers also noticed the advantages of playing in a bigger peer group. Mother Indra told, that her three boys like to play with peers: "there are lot of children during summer – 7-8 playing in sand". She noticed positive changes in her children's behavior in group play: "if the younger one is destroying something … he will be more careful afterward".

Surprisingly, none of the mothers spoke about academic learning in connection with play. On the contrary, few mothers expressed pity, that children are playing less when they started school. Seems that when talking about their children's learning mothers are more concerned with social learning which happens between children when they are playing together for a longer time. This contradicts with the opinions of many early childhood professionals, who claim that parents want their children to practice skills needed for primary school. Still, in the absence of a credible research, we could not say what Lithuanian parents really think about the importance of play.

Mothers captured important aspects of learning in mixed age groups of peers that has received little attention recently. The advantage of having a sibling at home is possibility of constant dialogue with a peer – your play mate is always available whenever you are ready to play. I am inclined to argue that the presence of a peer is of vital importance for creativity, learning and development.

Gray (2011) noticed in his article, "age-mixed play is more creative" and "children have more to learn from others who are older or younger than themselves than they do from age-mates" (p. 518). On theoretical level we can talk about the zone of proximal development that children are creating for each other and about scaffolding episodes that occurs in play of different age sibling groups.

11.3.3 Peer Play as a Space Where Children Develop Long-Lasting Mutual Relationships

All six mothers singled out "creation of mutual relationship" as significant aspect of peer play activity. Constructing play together takes time, children need to agree upon the topic and theme of play, the spaces, objects, the roles, and props. This is a long process in the course of which children's characters become revealed better. Mothers can observe how they are building their relationships: who is dominating,

who is following, who is creating the rules, how they solve complicated situations. Mothers stressed that through play peers are "learning to be with each other" and creating "mutual relationship".

11.3.4 Conflicts as a Part of Play Life

All mothers mentioned conflicts while describing the most valuable aspects of children's peer play. Conflict between young children could be viewed as "an aspect of social growth when two or more children have incompatible goals, such as ideas, feelings, and interests." (Andrews 2017, p. 6). Chen et al. (2001) pointed out that it is important to distinguish between the terms aggression and conflict: "equating conflict to aggression, (…) leads to the tendency to see conflicts as negative events that must be terminated as soon as possible, rather than as natural contexts for children to develop socially, morally, and cognitively" (p. 540). Meanwhile, aggressive behaviours are a negative response to conflict.

Observational studies (Ross et al. 2006) have revealed that siblings between the ages of three and seven clash 3.5 times per hour, on average. According to Ross et al. (2006) only about one out of every eight conflicts ends in compromise or reconciliation – the other seven times, the siblings merely withdraw, usually after the older child has bullied or intimidated the younger. Sibling expert Laurie Kramer, who has studied the topic for several decades explained, that the best ways to nurture positive connections between the siblings is play (Kramer and Gottman 1992). Kramer discovered that high-conflict siblings can have great relationships in the long run if they played together often, and as long as they play together more than they fight.

Peers disagree often and for various reasons. Apart from classical situations when someone's play is destroyed or when children are teasing each other, mothers in our study named several other reasons for conflicts in play. In some families' conflicts arise when one of the children, refuses to join the play, or on the contrary – to accept the sibling in one's play. In other cases, conflict arises if someone leaves the play unexpectedly or wants to join when the play is already in progress. Several mothers underlined, that conflicts usually arise when children are tired, upset, feel fatigue or hunger. When children are tired, the mothers try to prevent children from starting a new play activity if possible.

At the same time, mothers appreciate play activity just because of the conflicts and disagreements that naturally arise in play. Mother Ana likes her children to find solutions for disagreements independently: "I expect them to learn how to solve the conflicts. When one wants something, another does not […] when [in play] they come to an agreement, it is good for both […] in play they really learn, because they create the situations and they solve them." Seems that the mother is talking about children's ability to negotiate, make decisions and to be responsible for the consequences.

Other mothers also pointed out that peer play has benefits as a learning-space for conflict resolution. Mother Irma described, how she was pleased to observe children's negotiations and their ability to agree upon difficult issues. It amazes her that "in play children manage to find the solutions that would never be possible in real life situations!" Her conclusion is, that in play children manage to come to some mutual agreement, but not in everyday situations. The mother formulated nicely her observations that "in the play, at a moment's rage, children finally find a compromise!" One of the boys would say: "… ok, ok, then you can be this [role]", and change the roles, allowing the other one to get desired role or mascot.

The mother states, that children are "more advanced" in play situations. We would say that this is a very in-depth observation. Mother's statement echoes famous Vygotskian (1933/1967) claim that "in play a child is a head taller than himself". We often observe similar situations between children in the research laboratory of play. We have several explanations for such behavior: the child who give up a role or a toy is motivated to continue play activity and is more interested to construct the plot of play that to perform a certain role. The child is also able to anticipate what happens – if he/she would not give up the role – play activity will stop. The logic of collaboratively elaborated play events at some point start demanding certain steps from all the players (children). Children have to follow the rules (through roles), preserve the structure of play and through creating new events develop it further. Such tasks are very difficult for children with little or no play experience. It is peer play that helps children quite early to practice co-regulation of intentions, ideas and actions in favor of joint play activity.

It seems that mothers tend not to interfere in conflict resolution during play and in most cases, children find the solution. All mothers underlined that they become involved only when the conflict could not be solved peacefully. They step in when children respond aggressively to the conflict situation. Few mothers mentioned, that they might interfere in some situations to prevent the conflict before it escalates. Seems that mothers' expectations are reasonable. As Corsaro (2003, p. 193) concluded, "conflict is a central feature of kid's peer culture". Research shows that when given the opportunity and skills, children can resolve conflicts (Arcaro-McPhee et al. 2002). Roseth et al. (2008) noted that conflict resolution between children is more successful without adult intervention. Similarly, Corsaro (2003) states that "in groups where kids are given more opportunity to settle their own conflicts, highly complex negotiated settlements occur." (p. 162). According to Roseth et al.'s (2008) research, children have a natural conflict resolution cycle that typically involves solving a conflict while staying together, rather than separating. Andrews (2017, p. 7) pointed, that "opportunities to practice problem solving independently have long-term positive effects on children, such as developing an ability to communicate feelings, adjust to new situations, and maintain relationships." Björk-Willén (2012) in her detailed analysis of 6-year-old girls' pretend family role-play concluded, that "play (…) gives space (…) for renegotiating relationships between children in a very sophisticated way." (p. 136).

When children grow older mothers can clearly see how much their conflict resolution skills have developed. Mother Mira is talking about her three children as a team: "it is interesting for me to watch them as a team, they see and hear each other so well, even if there are some conflicts, they seem able to solve the conflicts themselves." Mother noticing that children become better functioning not only in play but also when stepping out into everyday world.

All mothers unanimously agreed, that conflicts and disagreements are an integral part of peer play culture, they expect that children would resolve difficult situations independently and they would step in only in cases of aggressive behavior. Mothers believe that this is the way how their children develop mutual relationships.

Mothers' thoughts confirm the findings of many scientists that sibling and peer play interactions provide children with the opportunities to learn "to enjoy each other's companionship, play creatively, negotiate and resolve conflicts and form unique relationships that allow for individuality" (Oden et al. 2015, p. 298).

11.4 Play as Constantly Changing Activity

Mothers were talking about peer play as constantly changing activity. Ana explained very clearly, that through changing play she can observe children's development: "…when very young, they played in a certain way and now I can see how they are improving, what new they bring into their play. Through play I can see their development. That's why play is significant for me." The mother's words resonate with Vygotsky's (1933/1967) idea that play activity itself is developing and only constantly changing and evolving play activity could support the development of the child. We managed to single out several factors causing the changes in children's play according to their mothers.

The first important factor bringing changes of the forms of play is the *season* of the year. In summer, when it is warm, children spend more time outside, more play with natural materials and could use very different spaces for their play. During winter when it is cold, children spend more time playing inside. During school breaks they have more time for play and this often result in long-lasting play activities.

Another factor affecting the play activity is the *location*, where children play. Mothers were dividing play activities into inside and outside play. Ana described how her children's play is changing: inside, for home play children use bunk bed. Outside, in the city playground they would play a ship sailing in the sea using playground equipment. We can see that the theme of play could change when children move to another location. Even when children continue the same play theme the new aspects or sub-themes of play might appear.

One more factor – *new players*. When changing the location (e.g. moving from the house to the yard) children tend to incorporate new objects, spaces and often new players into their play. Mother Ana made an accurate observation noticing that her children's play interests might shift because of their peers' initiatives and the

toys that peers would bring. New friends with their play props and ideas entering play activity definitely affect its' character. We could say that play tends to stretch when new players enter the play and narrow, when some players leave the activity.

Mothers appreciate their children's play with friends. Like all the mothers, Irma was glad that her boys often play with the peers: "I lack fantasy, I can't initiate play that I haven't played myself […] when they meet peers outside their house, they pick their ideas […] their horizon naturally expands". The mother is making connection between her own childhood play and limited abilities to introduce new forms of play to her children. Mother Mira also mentioned that she was not a good player herself, so she was glad that her children were learning to play with other children in Waldorf daycare. In spite of the fact that siblings are playing with each other, both mothers admit that their kids gain new [play] "ideas" playing with peers. They both see peer play as a resource expanding play repertoire of their children.

The last factor – change of children's *skills* and *interests*. One mother described very nicely that play of her children is shaped by different interests – every child has his specific interests. She describes this as changing "waves of interest". Mother named "waves" of dinosaurs, cars, trains, animals and ships. Interests change as children mature, acquire new knowledge and develop new skills.

From mothers' interview data we can conclude that play is a very dynamic, flexible and fluctuating activity sensitive to different factors among which are: the season of the year, the location, play objects, play peers, children's interests and skills.

11.4.1 Interview as a Tool Deepening the Awareness of the Significance of Their Children's Peer Play

Reading and re-reading interview transcripts we constantly got impression that mothers possess a lot of knowledge and understanding concerning their children's peer play. At the same time grew the feeling that this understanding is partly due to our research project. To be more specific, due to the interview method that we used to collect our data. According to Kvale (1996, p. 159) "the interview is a conversation in which the data arise […] is coproduced by interviewer and interviewee." During interview the interviewee does not have ready-made answers, to the questions. The answers are coproduction of the participants of the interview. The interview questions "turned" the mothers to their own thoughts and knowledge about children's play and prompted them to formulate their ideas in words. We believe, that part of the participating mothers discussed their children's peer play aloud for the first time. "[T]he *subjects themselves discover* new relationships during the interview, see new meanings in what they experience and do" (Kvale 1996, p. 189). We believe this process of discovery and awareness was going on during the interview and that mothers left the interview more knowledgeable than they entered it.

Analyzing interview data, we realized, that answering to our questions about the importance and value of peer play for their children, mothers provided us with the information concerning their own activities related to their children's play. Data

analysis revealed, that mothers are observing their children, analyzing their behavior and trying to understand them better on a regular basis. It became clear, that the mothers pay attention to children's activities and often watch their play. All six mothers shared not only their everyday observations, but also long-term insights.

The mothers were able to describe their children's characters, differences, similarities, individual preferences and how all those aspects unfold in play activity. They noticed, that through peer play "children reveal themselves" – their characters and their relations become more visible.

In addition to observations, the mothers have developed specific strategies to support their children's peer play. All mothers demonstrate *positive attitude* – they *encourage* and *show appropriation* of children's peer play. They try *not* to *disturb* play if possible, even in the case of a conflict or disagreement.

All mothers offer *indirect help* like providing spaces, props and materials, inviting friends and sometimes proposing ideas for play. One mother confirmed that she is constantly thinking how to enhance children's peer play: searching for new ideas, new props and clothes, making costumes and bringing new materials for play. In addition, she sometimes provokes children: proposes unexpected ideas, hides "treasure", strange objects and etc.

Situation is different with *direct participation* in children's play. Only in one family both parents become involved in role-play with their children. Several mothers doubted if adult involvement is appropriate as peer play is more children's own business. In spite of the fact that in general the mothers acknowledge peer play as children's activity where grownups are not needed, at the same time they stressed, that adult encouragement and approval is crucial for play activity to develop and flourish. According to one mother (Mira), children stop playing if adults express negative attitudes towards their play.

Mothers also expressed their expectations towards play. All mothers expect their children to solve conflicts arising in play. They would love to see more cooperation and collaboration in play, they expect to see their children learning to act as a team able to solve challenges not only in play situations but also in real life. Few mothers wished that there would be more children in the neighborhoods to play and have fun together. Several mothers expressed pity that while growing and starting school children were playing less.

11.5 Concluding Remarks

Although small in scope, our study differs from others of a similar nature in that we asked participants open-ended questions seeking to hear their authentic thoughts about children's peer play. Most studies exploring parents' attitudes used ready-made questionnaires or protocols, in this way receiving data on rather narrow topics. The vast majority of the studies have explored the links between children's peer play and different aspects of school readiness. We had no such purpose. Despite the fact that only six mothers participated in the study, they provided us with a rich data.

The study allowed to explore the attitudes of the mothers and to highlight the most significant and valuable aspects of peer play. All mothers agreed, that peer play activity allows children to realize their creative potential. The advantage of the children growing together with their siblings is that your play partner is always available and for this reason peer play becomes a space for learning. All mothers articulated clearly, what kind of learning they value most in peer play: (1) "learning to play", (2) "learning conflict resolution" and (3) "learning to build mutual relationships". They pointed nicely, that children are learning to play from each other: less experienced are learning from more experienced and this doesn't mean, that only the younger ones are learning from the older ones. The learning is both sided in peer play. Mothers noticed, that every child brings something new into play and all players have to learn to accept different ideas and to find the way how to incorporate them into joint play activity. This doesn't come easy. Children constantly have disagreements with peers while constructing joint play activity. All mothers underlined that conflicts are important part of peer play. Constructing play with peers takes time, children need to negotiate and agree upon many issues. In the course of this long process children learn how to be with other children and how to develop long-lasting mutual relationships.

These significant aspects of peer play are theoretically sound and confirmed by different researchers as we already discussed earlier in the chapter. Moreover, these aspects often are not sufficiently emphasized and thoroughly described in different books and play guidelines for the students, teachers and parents. They are usually defined as social skills that children acquire playing with the peers. Meanwhile, the mothers, participants of our research project described the mechanism of how these so called "social skills" developed in the course of long-lasting peer play among the siblings.

The findings convinced us that it is crucial for the researchers and professional teachers to be aware of parents' knowledge and understanding as it could help all parties to reconceptualize some important topics in early childhood education. Our study highlighted two such topics: children's conflicts in play and constantly debated contradiction between play and academic learning.

It turned out, that mothers' attitudes towards peer conflicts in play are radically different from what is happening in everyday practice. According to our observations, discussions with educators and recent research, professionals tend to avoid conflicts between children or to terminate them as soon as possible. Theoretically and practically, adults, while doing so are depriving children from the opportunity to develop conflict resolution skills. Many early childhood professionals admitted that they are concerned about children's safety on the first place, and in addition, some of them feel that they lack knowledge and skills how to act is such complicated situations.

Another topic is connected with ongoing debate about play and academic learning of young children. Should play be valued as an activity for its own sake or as a context and/or a tool for learning? This is an "eternal question" for the educators and for the parents. Participants of our research project did not speak about academic learning at all. We did not ask them directly about play in connection to

academic achievements, but we expected that mothers would mention this topic if they consider it important. How we can comment on that? Probably, the fact that all mothers in our study had school-age children, they knew, that engagement in play at early age does not prevent from successful learning at school. In other words, they already have experienced that play and learning are not revivals.

We understand that our data is coming from a very small number of parents, but it is deep and valuable, it comes from daily observations of children's peer play. Knowledgeable parents should be used as a resource to reach other parents, to teach professionals and as partners while creating new curriculums, guidelines and etc.

11.6 Implications for the Further Research and Practice

The significance of this study is primarily practical, since it made us to think about further research: different research design, like having focus groups of expert parents and a mixed group, both experts and non-experts. We believe, that many parents have implicit knowledge of play that should be revealed for them. We also plan to interview ECEC professionals and ask the same questions.

The research project expands our understanding of the use of the interview method. Focus group interview could be used as a tool deepening the awareness of own knowledge in the interview participants: professionals, parents, and probably in the researchers as well. The results could help in developing more precise interview questions or even questionnaires for the broader circle of parents and ECEC teachers.

For the educational practice, it could result in better recommendations how to organize appropriate environments for the development of children's peer play: age-mixed play groups in ECEC institutions and neighborhoods; the recognition of the conflict as an integral part of play activity and etc.

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Chapter 12
Togetherness and Awareness: Young Children's Peer Play

Liang Li and Mong-Lin Yu

12.1 Introduction

Despite vast evidence showing adults' involvement in children's play supports learning and development (Fleer 2015, 2017; Ridgway et al. 2015; van Oers 2013), little is known about how young children themselves create social conditions to enjoy the togetherness in peer play, to further support their development. The study reported in this chapter addresses this problem.

Children's social relationships with peers in play (Hollingsworth 2005) essential for young children's learning and general development (Eggum-Wilkens et al. 2014), can have long term impact on their later school lives. Considerable research has foregrounded the importance of peer play in children's learning and development such as how peer play contributes to children's adaptation to the demands of formal schooling (Eggum-Wilkens et al. 2014), socializing with friends in play, and facilitating prosocial skills (Harris 2015). Several studies on peer play have found that children including infants-toddlers and preschool children, engage in more complex relationships with their peers in play (Whaley and Rubenstein 1994; McGaha et al. 2011; Stetsenko and Ho 2015). Bornstein (2007) argues that playing with peers is more diverse, complex and sustained than a child's solitary play. Some other studies focus on the role that adults play in supporting children's peer play either in the classroom settings or family contexts, through arranging physical environment where peer play is taken place (McGaha et al. 2011; Rosenthal and Gatt

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2010; Shin 2010). Because little attention has been paid to the intrinsic demands and motives in peer play taken from children's perspectives, this research will examine the relations between peers in children's play that brings different perspectives of peers in play. This chapter adds to the existing knowledge relevant to peer play by exploring the dynamic interaction between young children, which is usually subtle but imperative, to achieve quality peer play. Therefore, the present study aims to take this particular view and investigate how peers create the conditions and demands on each other in order to enjoy the togetherness in play. Drawing upon cultural-historical theory, this chapter offers insight into the complex relations between peers and in-depth understanding of each peer's role in play.

This chapter begins with an overview of empirical studies on peer play and role of adults in peer play. This is followed by a theoretical discussion of the concepts of demands and motive orientations that informed the analysis. The details of research methods and findings are discussed, and concludes with implications for family practices and better understanding the complexity of peer play which informs play pedagogy in educational settings.

12.2 Demands and Motives in Peer Play

A motive reflects why something has to be done, while the motive orientation of the individual, determines how actions will be constructed and their significance (Lantolf and Appel 1994). Children have their own interpretations, interests and intentions in the situated activity which can be seen as the child's motive orientation in the activity setting. As Chaiklin (2012) discussed, 'motive is both an individual and collective concept. Individuals can have motives, but the individuality of motives is always within the fabric of societal practice.' (p. 219). Li (2019) has also further explained that the individual child's perspective can be interpreted when the child's own motives are related to institutional or societal practice. Thus, motives develop as a relation between children and the activity they engage in (Hedegaard and Chaiklin 2005).

In relation to the school educational settings, "children are expected to orient to the objectives of schooling through entering into the activities and recreating them in interaction with other participants, thereby also creating demands in the concrete school settings on teachers and other pupils" (Hedegaard 2014, p. 189). That is, on the one hand children engage in the activities in order to meet the demands of the institutional setting and through this process, they create new motive orientations to the settings; on the other hand, children also create demands upon others within the dynamic process of their interaction. This also informs us that in order to research children's learning and development, it is necessary to focus on child's social situation and the subtle social dynamic occurring within to examine the dialectical relations between the child's orientation within an activity setting and the demands from the setting and other people (Hedegaard 2012). As argued by Winter-Lindqvist (2012), children's motive orientation changes because the demands and conditions

for activities change while transitioning from kindergarten to school setting. Fleer (2014) also found that the educational settings "create the new demands and also possibilities for children move on from a motive orientation of play to one of learning" (p. 203). This highlights that motives are not internally generated but are culturally formed through children's participation in everyday practices (Fleer 2014).

In this chapter, the relations between demands and motives are used to analyse children's peer play and examine how children create the social conditions to enjoy the *togetherness and awareness* in play, that may lead to their learning and development. The concept of demands and motives are used to capture children's dynamic process of interactions and their awareness of others in peer play. How children make the demands upon one another is investigated and how they develop a new motive orientation in peer play for their learning and development of friendship, is explored.

12.3 Study Overview

In this study, a visual narrative methodology drawing upon cultural-historical theory is applied (Hedegaard 2008; Li 2014), and data are collected using video observations and reflective interviews to investigate the peer interactions and relations in play. As argued by Li (2019), in order to explain how children undertake motivated actions in the activity settings, the whole view of children's participation in the institutional practices needs to be captured. As part of an ethically approved research project *Studying Babies and Toddlers: Cultural Worlds and Transitory Relationships*, we filmed six focus children's family and long day care centre activities, and used selected video clips as prompts to interview children's families and educators in long day care centres.

The cases discussed here are part of the larger project in which six families joined the study for a period of ten months. We draw on data gathered from El's family: El (2.10 years old) and his friend Alf (3.2 years old). El and Alf went to the same long day care centre four days a week and played together from when they were one year old. Due to their close relations, the two families got to know each other and became friends. The two families usually meet and play at the weekend in the community park.

In the wider project, all the children's daily activities at home and long day care centres were video recorded, resulting in 60.5 hours of observation data. Two video cameras documented the everyday practices of children in the centre and home. The effective pedagogical use of digital visual methods has been discussed by Ridgway Quinones and Li (2017). The visual methodology allows the researchers to analyse the dynamic interactions through the visual narratives combined with dialogue commentary to achieve the in-depth understanding of the shared culturally meaningful activity. In this study, through the implementation of visual narrative methodology, how the data for better understanding the demands and motives of young children in peer play is visible. In doing so, we are able to investigate how they interact with each other in the situation change to best support collective play. Visual

narrative methodology provides a clear picture of children's perspective in play. How they become awareness of social situation in peer play becomes visible. This methodology requires a common sense, situated, thematic and synthesised analysis (Hedegaard 2008; Li 2014). In this chapter, two main analytical questions focus the analysis: how did the child relate to other peers in play in different situations? What motive orientations were evident when the new situations emerged as peer play?

To keep the focus of the discussion in this chapter, the demands and motives evident to the researchers within two activity settings were analysed from video and observations of El and Alf's ball play at the community park and home.

12.4 Case Example 1: El and Alf's Ball Play in the Community Park

On a Sunday afternoon, El (2.10 years old) and Alf (3.2 years old) were playing football with their parents on a community football ground. Alf kicked the ball towards El and El was throwing and kicking the ball further away, rather than towards Alf. El's Mum suggested to El that he kicked the ball towards Alf (Figs. 12.1 and 12.2).

Fig. 12.1 El threw the ball in the opposite direction

Fig. 12.2 Alf asked El to kick the ball

Alf: El!**Kick the ball.** [Alf was running towards El and shouted his name. Meanwhile, He looked back at El's mum with a worried face.]
El's Mum followed and asked, 好! El 你要冲着Alf踢!Alf在你后边!El,你越走越远啦!快过来!踢过来!<Alright! El, you need to kick toward Alf! Alf is behind you! El, you are running further away! Come this way! Kick it this way!>

…

El ran to the ball.
Alf told El: **kick this ball. [**Alf suggested El kicked the ball to him]

El held the ball and waited…
El's mum: 好啦, 踢过来! <Alright, kick it this way!>
El's Mum kept saying: Kick! Kick! 踢!踢!
El finally threw the ball towards Alf.
Alf kicked but missed the ball. Alf kicked the ball again.
El's mum: 快!El, 快!快!快!快!快!<Quickly, El! Quickly! Quickly! Quickly! Quickly!>

El picked up the ball and placed it in front of his feet. He looked at Alf, waited a moment, and finally started kicking. Alf kicked the ball back to him.

12.4.1 Analytical Common-Sense Interpretation of the Ball Play

This is ball play in an everyday play moment, which enhanced El's understanding of the meaning of kicking. After play, El's mother commented, "El's dad has played football with him at home a couple of times, however, El still doesn't know how to kick the ball. It is surprising to see that he is able to kick the ball during this play." This peer play turned into a learning process for El. It can be seen that El was not sure what to do and waited some moments by holding the ball. Although his mum and Alf both suggested he kick, he insisted on throwing the ball at the beginning. Alf kept kicking the ball to El, which provides the demonstration for El to learn how to kick.

It can be noticed that Alf made demands on El to kick the ball towards him instead of throwing the ball the opposite way. During the playing moment, El developed a new motivation orientation in kicking the ball due to the needs of play and meeting Alf's demands.

12.5 Case Example 2: El and Alf's Ball Play at Home

El (3.2 years old) has not seen his friend Alf (3.4 years old) for nearly one month as El had broken his toes over the holiday and had to rest at home for a month to heal. Alf was invited by El to come to his home to play after a month. According to his doctor, El was still not expected to stand and walk for a long time. They were both very looking forward and pleased to see each other and had missed one another so much. Alf's mum explained to Alf that El cannot move his legs a lot for standing, walking and running as his toes are still healing. Two balls (including a pink and a blue color balls) were used spontaneously for the ball play in El's play room. Their fathers were also involved in the play. The two boys were kneeling on the floor. El was kneeling at the far end of the room and shouting at the fathers to throw the ball. Alf was kneeling in the front, and then stood up and ran towards one of the fathers (Figs. 12.3 and 12.4).

El's Dad:离远点, 离远点, 不要离太近!<Further! Further! Don't come too close!>
Alf:给我们… <Give it to us…>
El: Go!
El's Dad:往后点! <move further back a little!> El gets the pink ball.
El: I got it!
Alf ran back towards El, knelt down, and waited for the balls.

Fig. 12.3 Alf knelt down

Alf's Dad:我丢啦!我丢啦!丢啦!< I'm gonna throw! I'm gonna throw! Now!>
Alf catches the ball, laughing.

…

El crawled to the corner to find the pink ball. Alf caught his ball from his dad, then turned around to look for El. He threw his ball to El instead of his dad. They both went to find their own ball (Fig. 12.5).

El crawled around to find the other ball. And El's mum reminded El to squat down instead of trying to stand and walk. Alf got the ball looking at El and says: *I got one* (Fig. 12.6).

…

El's Dad:谁来接这球?Alf, 过来!El接啦!<Who's gonna catch this ball? Alf, come here! El will take this!>

Alf excitedly rolled the ball. Both Dads asked them to stand back up. El at this moment tried to stand up. His mum reminded him to squat down.

El looked to Alf and crawled towards him. The dads rolled/threw the balls to the boys. El knelt on the floor, stretching out his arms to catch the ball with excited look on their faces. Alf also sat on the floor and tried to get the ball (Fig. 12.7).

…

Alf brought his ball to dad, and then ran back**.** El stood up while Alf stood to catch the ball (Fig. 12.8).

Fig. 12.4 Alf waited for the ball

…

Both boys were going back, El crawled and Alf ran. Then Alf looked at El, knelt down just like El. The boys were getting ready for catching the balls from the dad, and they were full of excitement.

El's dad: Ready? Ready?
El: Daddy! Daddy! Go!
Alf: Roll!

The balls came and the boys each went after a ball.
El's dad: Yeah! Yeah! Good! Well done! One more time!

El threw his pink ball into the air, and then crawled to catch it. Alf followed, threw his ball in the same direction, and crawled towards it.

…

El's dad:来, 一人一手一个, 来!往后退!往后退!<Come! One for each hand! Come on! Go back! Go back! >

Fig. 12.5 Alf threw the ball to El

Both boys were going back, El crawling and Alf running after El. Then Alf knelt down just like El. The boys are getting ready for catching the balls from the dad, it shows they enjoyed the ball play together. Also, it reminds us that they have not seen each other for a month due to El's sickness and they were so excited to play together again.

12.5.1 Analytical Common-Sense Interpretation of Ball Play at El's Home

The second ball play case example is again part of El and Alf's peer play time in the home context. This is very different from the first case example of ball play due to the new situation emerging- that El at that time was not able to stand for long, and run to catch the ball. Standing upright and running is the usual way El and Alf play football, and with the situation changed, both of them were able to be aware of the change, and adjusted their actions aligning with the new situation to achieve what motived them, which is having a joyful time playing with each other.

This case example shows El and Alf are both interested in and fully engaged with each other in ball play. In addition, it is their autonomous choice to play with each other with balls, and they already know how to make themselves enjoy their play by

Fig. 12.6 Alf shared the excitement with El

catching and throwing the balls. Alf seems to understand the situation of El. The kneeling down to catch the ball suddenly becomes the rule of play without guidance from adults, as Alf responds to El's new situation with his demands of kneeling down to play (Figs. 12.5 and 12.6). Sometimes, El also tries to stand up to walk to get the ball like Alf (Fig. 12.8). Their dynamic interactions make their play with balls joyful.

In this play episode, both dads are involved and provide a supportive social context to promote their son's togetherness of play by encouraging them to throw and catch the balls, and ensuring children (instead of parents) taking the lead in play. Their words also play an important role in supporting the play to move forward.

Fig. 12.7 Both boys caught the balls with big smiles

12.6 Discussion

12.6.1 Reciprocal Demands *Within the Concrete Activity Settings*

Children learn and develop through their lived experience across the institutions they participate in. Hedegaard (2012, p. 134) explains that "children learn through the demands they meet and through the demands they put on others in everyday activities in activity settings participating in different institutions". This study found that children can make reciprocal demands on each other while they engage in peer play. In both examples of balls play, El and Alf have shown how they meet each other's demands and build up their friendship.

Hedegaard's (2012) statement, "Learning occurs when there is a qualitative shift in the child's participation in an activity setting and thereby in his or her relations to

Fig. 12.8 El standing like Alf

other persons" (p. 136). In the first case, according to El's mum, El did not know how to kick the ball until the time he played with his friend Alf in the park. Alf made new demands on El to kick the ball to him instead of throwing the ball in the opposite direction. For instance, Alf asks, "El!Kick the ball". Through Alf's demonstration, El was finally able to imitate and kick the ball to Alf. They both played happily kicking the ball together. It can be seen that the tensions between El's motives in throwing the ball and demands in kicking the ball become visible in this peer play. The new demands support El's generation of new motive orientation in kicking the ball. Findings indicate that through interaction with other peers, children can develop their motive orientations in peer play. This finding is consistent with what was stated by Hedegaard (2012), that motives drive actions in the activity setting. Furthermore, El imitated Afl's kicking the ball, which brought their shared happiness and encourage their continuing interaction. As argued by Hannikainen and Munter (2019), the imitation is "primary way" for toddlers to "create companionship and shared joy, inspiring them to engage further in their interactions" (p. 495).

In the second case, a new situation emerged due to El's injury that happened on holiday. The injury meant that El could not stand and run for the ball game when

playing with Alf. Because of this, the boys both made reciprocal demands on one another. The complexity of the context where the activity occurred, required that both of them adapt themselves and create a new condition that allowed them to enjoy being together in their ball play. El made the demand upon Alf as he was kneeling down all the time to catch the ball. Alf responded to El's demand by adjusted his actions throughout the play as he noticed his friend's new ways of playing. Alf showed empathy towards El through these shared moments. As Hannikainen and Munter (2019) note, it is significant only when toddlers' experience has emotional meaning for them. Alf and El have their shared joy while playing together as the joint ball play gave rise to their companionship and affiliation. Both dad's participation did not directly guide the process of peer interactions. Except El's mum reminded El to squat down a couple of times, nobody told them how to play together, however, the boys created the ways of playing, by Alf kneeling down and El trying to stand. The reciprocal demands encouraged them to make personal adjustments. We also argue here that the play interaction visible in this case example could be understood as demonstrating children's particular way of knowing, responding and communicating each other.

12.6.2 The Motive Orientation and Competences in New Situation

We turn to the question of motive orientation to explain the findings. In order to determine children's motive orientation, it is necessary to take the child's perspective as an analytical device to examine the concrete activity setting (Fleer 2014). As El has made the new demands upon Alf in relation to the way of playing together, Alf's motive orientation to play with his friend emerged through his awareness of the new situation. El could not make movements and was not allowed to walk on his legs as he would normally do. This can be seen as a small crisis which requires addressing in their play. Alf had to change how he played with El which meant he started to kneeling down and crawl. The new conditions of peer play have been created collectively between El and Alf. Their peer play becomes very positive and is achieved in their happy moments. Through new ways of interaction, they develop their friendship. This can be likened to Hedegaard's (2014, p.193) idea of "their motive orientation and competences, are dialectically related to the change of their environment (the demands of new activities)".

Both El's parents were very surprised to see how El and Alf can play together as before. According to El's Dad, they were concerned if El and Alf could still play together and enjoy the playtime as before, given that El could not stand and walk easily. His Dad shared the story that they also invited another family friends' kids (two children similar to El's age) to their house one day before Alf visited. These two children were brother and sister, hence have stronger bond between themselves, compared with El. El did not have happy experiences as both children were only

playing with toys by themselves without considering involving El in their play. El was alone and ended up in tears. Findings revealed that what children bring to peer play activity settings make changes to other peers' acts, but only when they are motivated to engage in peer play and aware of the new situation. The scenario El with the other two children (the brother and sister) shows that the two children are not as motivated as El to play with each other, thus El's motive orientation to achieve togetherness and happiness is not met by the two children, and the two children's choice is to play with their sibling. Compared to El and Alf, both has the same motives and intention to play with each other and enjoy the play, hence their awareness to each other can be occurred. The awareness shown by Alf to El's new situation, has to be given in a way that supports the child's new dominant motive orientation (Hedegaard 2009), which, in this example is Alf's, new orientation to kneeling down while playing together with El.

The data also showed that peer play illustrates the process of children's negotiation of their acts and transformation of their friendship values by generating motives in the activity setting. As stated by Medina and Martinez (2012), "through peer interaction in play, children develop their cultural values and norms and transform them into motives that guide their actions" (p. 101). In both ball plays, in order to achieve their togetherness, El and Alf had to consider one another and accept what they could bring to the activity setting, then, make their rules of play: El's kicking the ball in the first episode and Alf's kneeling down in the second episode. In their peer interaction, the negotiation of their rules of play is driven by their play motives. The negotiation between El and Alf in the second ball play is invisible, however, it is not hard to see the dynamic process of their adjustments in play (Figs. 12.7 and 12.8). The value of being together and awareness of their peer relationships is reflected by their reciprocal demands and small crises they meet, that show this value is transformed into motives which guide El and Alf's changes to actions in their interactive play.

12.7 Conclusion

The present study aimed to examine how young children create the social conditions to achieve happiness and togetherness. Findings revealed that children in peer play can make reciprocal demands of one another, which support the generation of reciprocal responses and create new interactions in peer play to achieve the qualities of peer relations such as togetherness and happiness.

The study suggests that that in analysing the child's intentional actions in the same activity setting over time, we are able to explain the child's demands and motives. Davydov et al. (1983) explain that,

> an action, as unit of activity, taken in its psychological sense, is an act that drives from specific motives and is aimed at a specific goal; taken into account the conditions under which this goal is achieved, an action is solution of a problem the individual encounters (p.37).

We argue that children are able to move within the interactive situation in a flexible way, sharing the negotiated rules in peer play to address the small crisis. This is indicated in how El and Alf adjust their actions through their awareness of the situation, that support their development of friendship and self-regulation. Interestingly, this is in the situation that El has physical limitation, as children have physical limitation/s can sometimes be limited in participation in the peer play situation. However, El and Alf are still able to achieve quality peer play.

This study made visible the relations between demands, motives and motive orientations. It argues that demands and motives need to be conceptualized and examined as dynamic factors in children's learning and development. Without doing that, peer interaction and their transformed peer culture in play can hardly be interpreted. Additionally, in thinking of play pedagogies, it is wise to suggest that the adults take children's perspectives to examine individual demands and motives in play, and find out how to create the social conditions to support children to generate new motive orientations in peer play.

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Chapter 13
Looking Beyond Books and Blocks: Peers *Playing Around* with Concepts

Joanna Williamson, Daniel Lovatt, and Helen Hedges

13.1 Introduction

Twenty years ago, Rogoff (1998) argued that more attention should be paid to children's peer interactions and the potential they have for learning. Despite this call, in justifying his work on peer talk, Dovigo (2016) noted that most recent research in early childhood education (ECE) has emphasised teacher-child interactions, assuming these foster the most learning. Yet the often playful and less structured nature of early childhood settings compared with schools, would suggest that there are many extended peer interactions worthy of recognition for potential learning.

In this chapter, we focus on playful peer interactions that might lead to children developing new understandings and thinking, and therefore more complex play and sense making. We use Katz's (2012) idea of intellectual goals and learning as being a focus of that sense making to introduce a new concept we are developing in our collective research endeavours: that of *playing around* with concepts. We shed light on, and share our exploratory thinking and insight about, the importance of peer play and the richness of learning that might be happening during these playful and informal interactions.

Two episodes of 4-year-old children's play from ECE settings in Auckland, New Zealand are examined with our developing concept in mind. An holistic analytic lens consistent with New Zealand's early childhood curriculum, *Te Whāriki* (Ministry of Education [MOE] 2017), is applied to peer interactions to show how children integrate social *and* academic conceptual thinking – that is, "substantial and complex" intellectual thinking (Katz 2012, p. 16). We argue that while a play activity might be the context and provocation for children's playful encounters, it is vital to highlight the processes and cultural tools mediating conceptual thinking.

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Play as leading development is evident as children consider meanings, roles and rules in play, and demonstrate intuitive and reasoned understanding of embedded concepts (Vygotsky 1987).

13.2 The Complexity of Play and Informal Learning

Play in ECE remains an ideology with multiple interpretations and associated debates (Brooker et al. 2014). Alongside these debates, recent concerns about a lack of measurable outcomes have led to increasing focus on achievement in the early years resulting in a movement away from relational pedagogy and the recognition of the importance and complexity of learning within relationships (Hedges and Cooper 2018). This is particularly so for four year olds whose teachers may be swayed by the pervasive 'school readiness' agenda (Brown 2010). Arguably then, peer play and the richness of collaboration in contributing to children's social and academic learning, risks being overtaken by individualistic outcome agendas (for a critique of this agenda see Moss et al. 2016).

The reason for some of this concern about play and learning likely arises from an assumption that as *in*formal learning, play somehow cannot be fully recognised as contributing to serious learning. Yet, many authors argue that informal learning is rich with potential because it is relevant to children's worlds and life experiences, and is embedded in meaningful activities such as play. Therefore, it is developed from children's interests, and leads to more holistic outcomes than pure academic foci (e.g., Hedges and Cullen 2012; Hedges and Cooper 2016; Rogoff et al. 2016).

Likewise, Paradise and Rogoff (2009) criticise the tendency to undervalue and overlook the potential for the intellectual demands of less formalised learning and collective experiences. They argue that the "tendency to conceive of informal learning as natural or simple also reflects a cultural school-centric bias that has impeded understanding of its social and cultural organization" and that less formal learning "through observation and participation [is] often considered inherently less conceptual or cognitive than formalised school learning" (p. 102). They highlight the tremendous vitality, flexibility, and effectiveness of collective informal learning processes and the motivations deriving from integration in the same socially valued activities with other members of the community. When children collaborate as members of the community, they take initiative and responsibility, and share in the social and cultural fabric of everyday life.

13.3 Research on Peer Learning and Play – "A Collective Pursuit"

Recent international research examining peers at play tends to separate social learning from academic learning, and when there is a social focus, it tends to be deficit framed. For example, priorities for developing prosocial skills for individual children to facilitate successful transition into and throughout school dominate, and are particularly focused on so-called disadvantaged groups of children (e.g. Denham and Brown 2010; Eggum-Wilkins et al. 2014; Goble and Pianta 2017). Sadly, this may overlook the complexity of intellectual thinking involved in social emotional learning expertise, such as understanding social cues, nuances, and expectations. Social learning is substantial and cognitively demanding work. Moreover, in separating the social emotional learning from cognitive learning we tend towards viewing learning as an individual and academic pursuit, thus failing to recognise a holistic image of children's learning and outcomes.

Support for our stance on peer learning comes from the international scene. Influential international reports are also often narrowly focused on individual and school related outcomes (for example, Headstart programs in the USA, and the OECD Pisa reports relating to preschool education). In an argument against this 'un-holistic' position, for example in the USA, Lilian Katz (2012) urged uniting social and academic learning and viewing it as *intellectual* learning. Katz raised the invisibility of the intellectual in social-emotional learning as "a misleading dichotomy" (p. 15).

> Intellectual goals and their related activities, on the other hand, address the life of the mind in its fullest sense, including a range of aesthetic and moral sensibilities. The formal definition of the concept of *intellectual* emphasizes reasoning, hypothesizing, predicting, the quest for understanding and conjecturing as well as the development and analysis of ideas. An appropriate curriculum for young children focuses on supporting their in-born intellectual dispositions, for example, the disposition to make the best sense they can of their own experience and environment. (Katz 2012, p. 15–16)

Katz's work recognizes academic, social, and intellectual goals in the early years where richly integrated learning is evident as children 'play around' with their developing understandings about the nuances and complex ways of learning and life. Katz's argument inspires careful examination of the nature and enactment of intellectual learning. Coupled with Rogoff's (1998) point that more attention ought to be paid to peer interactions and learning, Rogoff also argues that learning is still primarily seen as an individual rather than a collective pursuit. She criticised that "we are assimilating but not accommodating sociocultural ideas" (p. 680), arguing that a sociocultural paradigm "integrates topics traditionally treated as distinct phenomena – such as cognitive, social, emotional, motivational, and personal identity processes" (p. 680).

We address these matters through examination of peer play and learning interactions across social and academic domains. We argue for the need to look at the complexities in peer play that may not always be recognised or valued as

intellectual, and therefore underestimated as informal opportunities for complex conceptual understandings. With these lenses in mind, we suggest more focus on the richness and complexity of peer play to bring the increasingly individualised, domain based outcomes pendulum back to focus on what peers consider and learn informally with each other as they are *playing around* with concepts. These rich concepts may lead to deeper understandings over time. It is also important to note that we have created the notion of *playing around* in the context of Aotearoa New Zealand, where *Te Whāriki* (MOE 2017) is the curriculum document. Elements prioritised in this document that influence our thinking, are described next.

13.4 The New Zealand Context – A Collaborative Lens

Sociocultural and culturally sustaining (Paris 2012) pedagogies currently underpin ECE in New Zealand. Our curriculum framework *Te Whāriki* (MOE 2017) is considered world leading due to its holistic intentions. It is a mandatory framework for all licensed early childhood settings therefore there is an expectation that early childhood educators will implement this curriculum as it is intended. Specifically, curriculum ought to be woven around experiences valued by and responsive to the children and community of a particular setting. *Te Whāriki* has overarching principles which prioritise collaborative learning and development: empowerment (mana), relationships (ngā hononga), family and community (whānau tangata), and holistic development (kotahitanga) to frame a collective world view in which children learn "with and alongside others" (MOE 2017, p. 36). While an empowered child is at the heart of the curriculum, the child's community and ways of knowing, being, and doing are recognised as coming with them (MOE 2009b). Thus, *Te Whāriki* sees all learning as *collective* – that children "learn by engaging in meaningful interactions with people, places and things" (MOE 2017, p. 14), and that curriculum "enhances their mana" (p. 21) as it weaves around them. Collaboration is highly valued across the curriculum goals and outcomes, seen as responsive first and foremost to mana whenua – the indigenous Māori people of New Zealand, and then the many cultures that reside here. In this way, the worldview of *Te Whāriki* is collective and emphasises the importance of learning communities and learning in partnership with others.

Te Whāriki interweaves multiple strands for learning with the aforementioned principles to reflect the holistic nature of children's development. These strands are: Well-being (Mana Atua), Belonging (Mana Whenua), Contribution (Mana Tangata), Communication (Mana Reo), and Exploration (Mana Aotūroa). In relation to learning alongside others and peer play, the Contribution strand recognizes that "Children develop by participating actively in the opportunities that are available to them. These typically involve collaboration with adults and other children" (MOE 2017, p. 36), and that "It is through interacting with others that children learn to take another's point of view, empathise, ask for help, see themselves as a help to others and discuss or explain their ideas" (p. 36). As such, the Contribution strand interweaves with the empowerment principle and "draws on children's abilities to

contribute their own strengths and interests" (p. 36). This collective focus recognizes that learning occurs within shared encounters in community endeavours where children are empowered, and may share their thinking with others.

Likewise, the Exploration strand highlights children's abilities to "inquire into, research, explore, generate and modify working theories about the natural, social, physical, spiritual, and human-made worlds" (MOE 2017, p. 47). To support this, *Te Whāriki* suggests that teachers facilitate curriculum experiences wherein "children have opportunities to develop and explore *social concepts*, rules and understandings in social contexts with familiar adults and peers" (p. 49 emphasis added). Children's working theories, that is "the evolving ideas and understandings that children develop as they use their existing knowledge to make sense of new experiences" (p. 23) are one of two holistic learning outcomes – alongside learning dispositions – of *Te Whāriki.* Working theories have some resonance with our notion of *playing around* in that both align with Katz's position (2012). We suggest it is the valued recognition of social *and* academic learning that strengthens *Te Whāriki* as a holistic and responsive curriculum.

However, even within our renowned curriculum framework where children's "play is valued as meaningful learning and the importance of spontaneous play is recognised" (MOE 2017, p. 47), we realise that the complex learning that happens among peers at play may be overlooked. We suggest this is due, in part, to contemporary persuasive policy agendas that focus on outcomes. Other influencing factors include the individually lensed and pervasive narrative assessment framework – learning stories – that sit alongside *Te Whāriki* (Carr 2001; Lee and Carr 2012). Learning stories focus on dispositions as a prioritised learning outcome due to the significant work undertaken to develop assessment exemplars related to these (MOE 2007, 2009a). This has arguably occurred at the expense or invisibility of the other overarching outcome of working theories, which is more likely to highlight how children learn in shared endeavours (Hedges and Cooper 2017). Our notion of *playing around* links closely with the concept of working theories as a curriculum learning outcome.

An holistic lens considers intellectual goals that enable social and academic learning to coalesce, weaving the knowledge, skills, strategies, attitudes and expectations children bring together, to be recognised and valued. This intellectual thinking is evident throughout the 20 integrated learning outcomes in *Te Whāriki* which collectively build capacity development over time. Collaborative meaning making is ever present as children explore intellectual concepts in their peer play. For example, the Contribution strand stresses the importance of "the ability to identify and accept another point of view" (MOE 2017, p. 36) and "recognizing and appreciating their own ability to learn" (p. 24). These sit alongside the "ability to use memory, perspective taking, metacognition and other cognitive strategies for thinking, and ability to make links between past, present and future" (p. 37). *Playing around* with concepts is intellectual learning as children learn about, test out, and develop collectively, a range of ideas that assist understanding of their worlds and their place within these.

13.5 Our Developing Concept: Playing Around with Concepts

The working definition of our new concept *playing around with concepts* is as representing children's experimenting with conceptual thinking that builds in the moment and with each other as peers. In this way *playing around* is collective. Through *playing around* with others and their ideas, a child's contributions may provoke prior knowledge in others as peers work together in playful and informal ways, often with valued cultural tools mediating learning. *Playing around* may involve intuition as well as reasoning, resulting in complex conceptual thinking across multiple levels where social and academic learning are integrated through playful collaboration in meaningful contexts. *Playing around* is spontaneous, building in the moment, through experimenting and developing shared understandings. We see *playing around* as resonating with Katz' integration of social and academic thinking during interactions with others as intellectual development (2012). We use the notion of *playing around* with concepts during peer interactions as a lens for our analysis in this chapter. The opportunity to write this chapter introduces and trials this notion; we will look to extend and elaborate on it in future research.

13.5.1 Introducing the Episodes – A Lens on Playful Interactions Among Peers

The following episodes have been selected from two studies in progress to highlight the playful ways children engage with conceptual thinking with others, even during what might ordinarily be more structured or rule-bound experiences in an ECE setting. Both studies are qualitative in nature. Each project involved significant fieldwork in efforts as researchers to get to the heart of what matters for children and to consider what conceptual learning may be happening during children's interactions with people, places and things.

The *intellectual* and holistic integration of social and academic learning can be seen in these episodes in the way children are *playing around* together with cognitively complex concepts. In both episodes the children appear to enjoy challenging rules, roles, and responsibilities as well as engaging with each other's contributions. There is evidence of complex intuiting and reasoning, and collaboration about social roles and responsibilities. Alongside this, traditionally academic concepts are mediated throughout via the cultural tools of language, books, and blocks. The peer play seems to empower opportunities to explore ideas in a more equal relationship than with adults, where adult-child power relations may disrupt reciprocity. Here children may be more expert than adults in guiding participation in culturally valued activity, where concepts are explored in situ (Rogoff 1998). We see these forms of expertise during *playing around* with concepts in the following episodes. For the purposes of analysis we have separated social and academic learning on traditional

lines but the intention is to highlight the holistic integration of intellectual thinking via *playing around* with concepts.

13.5.2 Episode One: Group Storybook Reading

The first episode is from Joanna's data. This episode began when the children gathered for their daily group time before lunch routine, where a teacher would read a book aloud to them. Shared storybook reading enables shared thinking where in this case the children were *playing around* with concepts of books, appropriateness, power, and humor. On this occasion, the teacher (T) sat on a chair at the front of the mat that the children sat on and she held up the book to be read. She had an excited look on her face. As the children saw her and the book cover (*The Book with no Pictures* by B J Novak), there were several gleeful glances passed between them, suggesting they anticipated a more playful experience than what they might have expected during typical routine and rule bound mat time reading. Many children were wriggling and whispering excitedly. Several children who recently transitioned into the room were not familiar with the book, but they were familiar with mat time rules. They looked around, closely observing their peers' behaviour for clues as to what was expected (Table 13.1).

This shared reading episode clearly builds on previous experience with the book and in this analysis is shown to provide an important example of peer learning. The children engaged with each other's thinking; aligned in their intentions to enjoy the book together, test boundaries, and have fun with ridiculousness. The children developed shared understandings of complex concepts about books, text, rules, social roles and responsibilities, emotions, and humor through their *playing around* in their delight with the story. Concepts of appropriateness seem to interest the children and encouraged their *playing around* with peers to make sense of what was, and wasn't okay, to do and say. There was reasoning evident in the social referencing by less expert peers recently transitioned into the room. Likewise, children more familiar with the book employed intuitive strategies to shift power away from the teacher and, in the process, try to ensure the experience was not a typically didactic mat time shared book reading experience.

Academic *and* social concepts were considered in what is usually a rule-bound routine enabling *playing around* with more intellectual consideration about rules and roles, and nuanced behaviours. Academically, the culturally valued tool – books – mediated complex use of language, story and print concepts. The story itself disrupted many norms, which was perhaps part of its popularity. In this way the book, the children and the teacher were *playing around* with social *and* academic concepts, as intellectual learning. For example, the close observation of peers, the secretive exchanges between children outside the teacher's hearing, and the connections between image and text. The children considered their own contributions as they practised skills and strategies to playfully learn alongside others (MOE 2017).

Table 13.1 Shared reading at mat time

Dialogue T=teacher C=child	Description of Actions	Playing around with concepts A= academic concept S= social concept PA = *playing around*
T. Are you guys ready? Okay, here I go.	Two newer children raise their hands to answer, look around at their peers then quickly put them down again.	*PA* Reasoning/intuiting about contextual rules and roles. *S* Learning from others.
C. I got that one at home. C. You have to read all of it. T. Yes, I know. We'll read *all* of it.	Calling out is ignored. A child interjects quoting the book. Teacher reassures that they'll read it all. Breaks mat time rule by responding to calling out.	*S* Testing boundaries. *A* Books and print, authorial voice, power of the written word. *S* Roles – who is in charge? *PA* Disrupting roles and rules
T. *The Book with no Pictures* (Reads) This is a book with no pictures. It might seem like no fun to have someone read you a book with no pictures. Do you think it's going to be boring? C. Noooo (chorused) Yes (a few)	Children calling out– chorused "no" is dragged on. The teacher again does not comment on this breach of rules. Newer children observing others closely.	*PA* Rules, roles and appropriateness across contexts. *S* Learning from others
T. *resumes reading* It probably seems boring and serious, except… here is how books work. Everything the words say the person reading the book has to say. Uh-oh C. Uh-oh T. No matter what. That's the deal, that's the rule. Which means even if the words say…*Are you guys ready?* C. Yeaaaah (chorused). C. Yeah, are you ready? (said to a peer) C. Yeah (nods)	Complex syntax and higher level vocabulary are mediated through the shared experience. Book and mat time conventions disrupted. Teacher playfully looks worried. A few children mimic. Interjects reading with a question to be playful and encourage participation. Some yell out. Several children exchange excited glances. Their bodies show enthusiasm with some legs and arms flailing around and deliberately knocking others. New children begin to join in.	*S* Empathy, teasing. *PA* Intuition *PA* Who is in charge? What do we do here? *A* What is a story? Books are fun. *A* The language of books *PA* Reasoning others' feelings. When/why is it okay to break rules? *S* Being playful with a story.

(continued)

Table 13.1 (continued)

Dialogue T=teacher C=child	Description of Actions	Playing around with concepts A= academic concept S= social concept PA = *playing around*
T. Warrp. Wait. What? That doesn't even mean anything! Wurrrf. Wait a second. What? This isn't the kind of book I wanted to read. And I have to say every word the book says? C. Yeesss (yelling out) T. Oh no….. Do I have to keep reading? C. Yeesss (yelling out)	Dialogic invitation Inviting backchat as a collective response. Peer prior knowledge of what is acceptable here re calling out and name calling.	*S* Appropriateness and boundaries. *S* Learning from others. *PA* Nonsense language *PA* Power *PA* Contextual rules. Intuition.
T. I am a monkey who taught myself to read. Hey, I'm not a monkey. C. Yes you are (several times, chorused) T. Okay…And now I am reading you this book with my monkey mouth ohh-ohho-ohh and my monkey voice ohh-he-he. That's not true, I'm not a monkey!	One child quietly and gleefully asks another – "are you ready?" Children sniggering and wriggling, laughing loudly Reader is vulnerable Teacher models playfulness in acting as a monkey. Children playfully respond.	*PA* Anticipation. *PA* Finding hilarity in the teacher saying silly words and feeling awkward. *S* Vulnerability *A* Challenges authorial voice. *PA* Power, disruption. *S* Breaking rules. *A* Book rules, word meanings. *PA* Why are monkeys funny?
C. Yes, you are (loud and chorused, several times) T. Am I a monkey? C. Yes (loud and chorused) C. Cos' her ears? (barely audible). Cos' she looks like a monkey. T. Also, I am a robot monkey. C. A robot monkey? …	One child leads this interjection and others follow. Teacher pretends to be offended. Two girls talk quietly, secretive, knowing smiles. Said in a robot voice. One child repeats in a funny voice. Written in large colourful font in a robot/computer style	*PA* Ridiculousness. Cheekiness. Limits. *PA* When is it okay to call someone names? When is it okay to backchat? *PA* Reasoning together what can be said aloud and what can't. How much risk to take? *A* Connections of text and image. *A* Book characters, narrative.
T. Wait a second. Is this whole book a trick? Can I stop reading pleeease? C. Noooooooooooo ….	Teacher playfully looks and sounds worried. Begs to stop. Loud laughter, all joining in. Gleeful exchanges between children.	*PA* How is it okay to offend? How to read another's feelings? *PA* When does it cease to be playful? Nuances *S* Learning from others

(continued)

Table 13.1 (continued)

Dialogue T=teacher C=child	Description of Actions	Playing around with concepts A= academic concept S= social concept PA = *playing around*
T. What? This book is ridiculous! Can I stop reading yet? C. Nooooo (yelling)	Teacher pretends to look miserable and sulky. The children are delighted.	*PA* Power of text *PA* Power – teacher as vulnerable. *PA* Rules and roles. *S* Being playful
C. It's funny eh? (to another) Yessss (replies) This is the funny part.	Two children exchange laughter and talk between themselves. Children wriggle excitedly and exchange knowing looks. Newer ones are closely observing them.	*S* Sharing fun *PA* Anticipation *PA* Shared understanding of contextually bound humor
T. My only friend in the whole wide world is a hippo named…Boo Boo Butt T. Boo Boo Butt C. Boo Boo Butt (many, laughing)	Teacher pauses for effect. Several children literally roll about the floor laughing. There is lots of repetition of the phrase. This is the climax of the book for the children, they tend to lose interest after this.	*PA* Toilet humor and toilet words *PA* Testing limits in context. *PA* When is it okay to say 'butt'? *PA* Risk taking. Name calling, *A* Book conventions – what is a story? *A* Narrative structure. *PA* Roles and rules – teacher saying toilet words.

Adult and child roles and breaking rules, using back chatting, toilet words, and teasing, are some specific social concepts that the peer group explored together. This is evident in the excitement seen in anticipation of the teacher calling herself "a robot monkey", and saying the word "butt". The children learned from each other's reactions about the appropriateness of their responses and about the acceptable level of calling out, back chat, and teasing. For example, two girls secretly talked about the teacher having monkey ears. Whole body laughter and gleeful repetition of the name "Boo Boo Butt" afforded the children an opportunity to share in their delight about using 'toilet' words, calling their teacher names, and knocking each other on the mat.

The intellectual and often nuanced concepts being considered as the children negotiated the rules and ways of contributing, while enjoying the language and humor of the book, were "substantial and often complex" learning (Katz 2012, p. 16). The context was empowering as playful and informal learning where the children negotiated limits, rights, roles, and responsibilities. The children appeared highly motivated to engage in teasing and playing with others' emotions while

learning that it was not serious in that context, but a safe space to explore these concepts. In this way, they were *playing around* with intellectual thinking as they explored a range of academic and social concepts that align with the holistic outcomes of *Te Whāriki.* In particular those in the Contribution strand which highlights children "using a range of strategies and skills to play and learn with others" (MOE 2017, p. 37).

13.5.3 Episode Two: Dominos

The second episode is from Daniel's data. It began as two 4-year-old children (Frank [F] and Catherine [C]) were constructing a domino track by placing large wooden blocks on their ends. The children were later joined by another 4-year-old: Thomas [T]. Two adults were present, a teacher, Sarah [S], and Daniel [D] in his role as a researcher. Table 13.2 outlines the episode as the children aimed the domino track towards the door of the room they were building in.

Viewed through a sociocultural lens, this episode indicates that an everyday peer experience such as building with wooden blocks can involve *playing around* with complex social and academic concepts on multiple levels. Building the domino track was a shared endeavour amongst the three children, who played around with intellectual concepts about social rules, roles, responsibilities, power, and control, alongside mathematics and science concepts. The children talked and worked together, watching for social cues and nuances, approaches and responses, to reach common goals showing they could "take another's point of view, empathise, ask for help, see themselves as a help to others and discuss or explain their ideas" (MOE 2017, p. 36).

From a social perspective, the construction of the domino tracks provided an opportunity for the children to engage in *playing around* together with concepts about friendship, cooperation, and support. Catherine moved from active builder to motivating observer, continuing to see herself as part of the learning experience. As observer, she provided excitement, anticipation, and motivation, *playing around* with ways that she might contribute to the experience through verbal and body language. Frank and Thomas were *playing around* with social concepts about friendship, support, and cooperation. Twice Thomas' cooperative role shifted from helper to leader; both times when the track failed. On these occasions, he used language and humor to help move the interactions past a potential hurdle, watching and listening to the reaction of Frank, then quickly resuming his role of helper. We argue that these two small interactions are about deep, complex thinking, particularly from Thomas as he worked out what to say, how to react, how to be a friend, and how to keep the experience going. In this regard then, the boys were *playing around* with rich concepts about cooperation, and how to lead, support, encourage, and motivate each other. Hence, the collaboration of the three children was critical to the ongoing construction, leading to further development of social and academic concepts in a shared endeavour (see also Chap. 4).

Table 13.2 Building dominos with blocks

Dialogue	Description of action	Playing around with concepts A=academic concept S= social concept PA = *playing around*
F. We're coming out the door!	C helped F to build the track through and out the door of the room normally used for construction	*PA* Roles and rules about collaboration and testing boundaries
D. It started in this room and now it's in this room	F and C beamed excitedly on hearing this, being acknowledged but not stopped by an adult	*PA* Roles and rules about boundaries and power
F. we're coming to you C. it's gonna land, it's gonna hit your foot, and it's gonna hit, and it's gonna get sore. You're gonna say ouch.	F and C angled the track towards D, testing his reaction to their decision and actions	*A* Initiative, hypothesizing, conjecture, prediction *S* Testing child and teacher status and power
F. We have a lot of blocks eh? D. How many blocks is it Frank? F. seventeen a hundred eighteen twenty one twenty two	Frank looked over the line of blocks before announcing his estimate	*A* Numbers and quantities *S* Sharing an estimate, possibly to get feedback from peers
T. and I'll give one more to you F. you can help, you can help now	T joined in and C stopped helping build, but watched excitedly as the track approached D, changing her approach and contributing through motivating words and actions	*S* Responsibility, initiative, expectation *PA* Different ways to contribute
T. we can just bust that one down	The response after the track was completed and knocked down. However it stopped before it reached D. F knocked down the last section and to their great excitement, the final block landed on D's toe. F, C and T danced excitedly	*PA* Roles and ways of support, encouragement and problem solving. *A* Reasoning *PA* Testing child and teacher status and relationships
S. that was awesome, that really was…I wonder how many pieces of blocks are here F. a hundred S. would you like to count them and find them out? F. (after counting) 12 C. Those numbers don't go together	The teacher introduced a focus on counting F responded to S's invitation and made a new estimate. F's counting became confused C voiced that F counted incorrectly, prompting herself to count Contribution, collaborative learning, using prior knowledge	*A* Estimation, number, quantity *S* Rules about appropriateness of responding to teacher questions *A* Reasoning, responsibility

(continued)

Table 13.2 (continued)

Dialogue	Description of action	Playing around with concepts A=academic concept S= social concept PA = *playing around*
S. how do you know how much space you have to leave in between them? F. I don't know S. But do you know how much space to leave between? D. How do you know how far to put them apart?	Referring to the spacing of the blocks. No verbal response No verbal response	*PA* Rules, appropriateness of responding to teacher questions *PA* Resistance
F. because we're going to come, we're going to come to Naomi (a teacher who was outside on the deck)	A further and more significant threshold was to be crossed – to the outside of the building	*PA* Roles and rules about collaboration and testing boundaries, initiative, power
F. ah Thomas, why are you waiting too long?	Frank asking Thomas to hurry up. Thomas responded to this gentle admonition by bringing out an armful of blocks	*PA* Collaboration, rules about peer interactions, contribution, expectations
F. that might not work T. that might hit it F. yea that that one if this one hits this one, that one will just go meeeaaaam boom. So I think that won't work	After assessing the track as it crossed over the threshold the boys jointly made decisions about the track construction F demonstrated by twisting and tilting the blocks to show the subsequent actions	*A* Shared concepts about geometry, gravity, cause and effect. Developing ideas through conjecture, prediction, reasoning *A* Critical thinking: reasoning together, building on each other's thinking
T. um Frank! F what? F. I'll build it all over again T. Frank, I've got some waiting here F. I can build it again. I can come over	T appeared with an armful of blocks to find F had inadvertently knocked the blocks over. T used a humorous expression lightening the moment T then slid some of the knocked over blocks out of the way for F to rebuild	*S* Collaboration – roles and rules *S* Social cues and nuances *S* Support and motivation

The children were *playing around* with concepts about social rules, particularly about responding to adults. While the children quickly responded to questions about quantity, they brushed off questions about spacing. Many aspects might have played a part in this. First, the children may have held implicit understandings about spacing that they could not verbalise. Second, the children may have been deeply engaged and reluctant to break their focus and concentration by engaging at that time. Third, they might have been experimenting with multiple concepts about social rules such as how to or whether to respond to questions, the appropriateness of their responses, and engaging with other children's contributions. An everyday

experience such as building the domino track may therefore have afforded a space for the children to be collaboratively *playing around* with meaningful concepts about behaviour, thus aligning with *Te Whāriki*'s intention that children have opportunities to explore concepts about rules in a social context.

Rather than view children's mathematical concept development as individual, a collective, sociocultural lens enables a view of the collaborative learning occurring as the children were *playing around* together. There was a joint progression in counting, beginning with Frank playfully estimating a fantastical number, and re-estimating to 100. Catherine brought her prior knowledge by understanding that Frank had counted incorrectly, which motivated her to count them herself. A sociocultural lens enables us to view this progression as collaboratively playing around and building on each other's understandings and being motivated through the shared endeavour to do so. While this learning incorporated academic ideas, it was bound within and built through social interactions. That is, the learning was intellectual, bringing social roles and understandings together with academic concepts.

Both episodes illustrate our argument that playful peer interactions are vital to children's learning and development. As peers play, talk, collaborate, test rules, roles, responsibilities, and boundaries, and solve problems together they are *playing around* to understand complex intellectual concepts. As Katz noted, these combine academic *and* social concept learning.

13.6 Conclusion

Rogoff (1998) has argued that peer play is a more equal relationship than adult-child relationships because of power differentials and theorised how this might affect reciprocity. In this sense, some of the richest learning in these episodes occurs through peers challenging usual constraints and conventions via *playing around* with multiple aspects of acceptability, responsibility, and power. In peer play, the children are empowered to test limits and negotiate meanings in contexts where their contributions are valued as meaningful for others, and their efforts extend others' understandings. In these episodes, the notion of children's learning via *playing around* with concepts also affords a more credit based view of children's behaviour. Their testing of limits, rules, roles and responsibilities activate "[a]gency in their own lives" (MOE 2017, p. 14).

In our chapter, we have used the work of Katz and Rogoff to provide exploratory insights into the ways children might be *playing around* with intellectual concepts with their peers. We argue that *playing around* with concepts occurs: "As children listen to the views and understanding of others and stretch their concepts to find a common ground; as they collaborate and argue with others, consider new alternatives and recast their ideas to communicate or to convince, they advance their ideas in the process of participation. It is a matter of social engagement that leaves the individual changed" (Rogoff 1990, p. 195–196). Alongside this, Katz (2012) noted

that "[E]arly childhood curriculum and teaching methods are best when they address children's lively minds so that they have frequent opportunities to be fully intellectually engaged as well as to engage in spontaneous play" (p. 18).

By viewing the collective nature of playful (see also Chaps. 6 and 14), informal learning through the lens of intellectual development, we reject the social-academic binary, and further problematize some of the tensions that encompass this peer play space. This chapter adds to peer play and play development literature by bringing an intellectual and sociocultural focus to the holistic integration of complex social *and* academic conceptual learning in play. In this sense, we position knowledge as a powerful informant to play development rather than the current position, which tends to position play as a means to achieve learning outcomes.

While we have unpacked these episodes into social and academic notions to make them visible, we argue the collaborative learning that children are engaged in, is integrated intellectual development via *playing around* with complex life concepts. There is synergy between academic and social concept development as interdependent in intellectual development (Katz 2012). Using a sociocultural lens has highlighted a more holistic and complex interpretation of these learning episodes by shifting the focus from the individual to the collective, and by acknowledging the multilevel concept development that occurred as a result of these playful interactions. Our message is that there is more to children's *playing around* with concepts than first meets the eye. We advocate for recognizing the richness and potential of informal peer play, and the collaborative processes of social *and* academic knowledge building from each other's expertise, particularly amongst peers' *playing around* with complex ideas.

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Chapter 14
Collaborative Sibling Play: Forming a Cohesive Collective While Picking Mangoes

Megan Adams

14.1 Introduction

Historically, children of varying ages have played together and worked closely with family members, often leading to learning a trade (Lave and Wenger 1991). This togetherness led to children learning about cultural ways of doing and being, from people of all ages, including relatives, co-workers, siblings and their peers (Rogoff 1990). In these situations, teaching and learning in context formed an implicit part of social interaction. Family living arrangements have changed and today, living as an extended family is less common. The norm has shifted to living as a nuclear family potentially decreasing the availability of situations where everyday mixed age play occurs. However, when families move countries due to one or both parents' employment with a multinational company, the familiar social interactions that favour age based peer play, (known neighbours, invitations to social occasions) are not immediately available in the new host country. The provision for siblings playing together becomes a necessity. To gain greater insight into multiage sibling [peer] play in the family context, literature on sibling play is outlined briefly.

Research on contemporary play focuses on the value of play (Brooker 2002) and is situated with same age peers (Gray 2011) in early childhood centres (for example, Fleer 2011) or schools (Blatchford 1998). Although there is substantial research on same age peer play (Brooker 2002; Gray 2011; Fleer 2011), scarce information on collective sibling play situated in the family context was located. Yet, in the family context, siblings do spend substantial amounts of time together. Research on sibling play that does exist, reveals two main themes. These relate to adult intervention and co-constructed situated play (Garcia et al. 2000; Pruswell and Taylor 2013).

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Studies on sibling play are located in clinical settings and include the theme of adult intervention, to support newly formed blended families (Pruswell and Taylor 2013). Other studies address the destructive interaction between siblings, suggesting possible teacher and parent interventions (Garcia et al. 2000). Whether or not adults joined in the play depended upon their beliefs about play (Vandermass-Peeler et al. 2002). In a study on play by Parmar et al. (2014), mothers had varied intentions when interacting with their children. Some provided props for play while others directed their children towards rote learning (Parmar et al. 2014). Missing from the literature are studies on sibling interaction without adults entering the play or being in the vicinity of the play.

Other studies involved siblings playing together to construct situational play. These large scale quantitative studies were located from sources of developmental psychology research. Howe et al. (2005) reported that positive sibling relationships provide creation of shared meaning. Older siblings scaffold learning and social understanding for younger siblings. Studies found that imaginative play initiated by younger siblings was more successful when older siblings joined in (Palacios et al. 2016). Howe et al. (2014) studied sibling dyads in home settings to examine how imaginary play was co-constructed. The complexity of sibling play was highlighted, with varying themes, and creative object transformations noted (Howe et al. 2014). Farver (1993) found that Mexican siblings participated in nurturing mixed age play whereas American sibling play tended to be competitive and often discordant. Similarly, in this book, theorises peer play as a collaborative unit where initiatives and creative explorations are constructed in play.

Further, as the studies reviewed were based on quantitative methodologies with minimal theory, there is a need to use qualitative studies and include theory. Therefore, a cultural-historical approach is drawn upon for greater understanding of siblings' interactions and their use of sustained shared thinking (Siraj-Blatchford 2007) to solve a joint problem. Combing these studies, directs attention towards the research question: How do siblings in transition to a new country, play together and solve problems in their new environment?

14.2 Theoretical Perspective – A Child's Relation to the Environment

Vygotsky (1994) discusses the importance of understanding the relation between the child and their environment to better understand the process of child development. He makes the point that the child's environment does not change but the relation the child has with the environment changes as the child develops (Vygotsky 1994). The child's relation with their material and social world changes as the child's understanding of concepts progresses (Fleer 2011). Vygotsky (1994), argues that "the relationship which exists between the child and its environment at a given stage of development" (p. 339) is dependent on the child's understanding and

experiences of the environment. A theoretical example to explain this point is the way three siblings experience getting ready to move countries where each sibling experiences the transition differently. The youngest child becomes introverted and reports that he does not want to leave his friends and wants to stay in the house he knows. The middle child does not display any emotion at all and will not discuss the situation. The oldest child is excited at the prospect of moving countries and meeting new friends. Therefore, each of the children experiences the potential transition in different ways. "How a child becomes aware of, interprets, [and] emotionally relates to a certain event…determines the role and influence of the environment on the development of the child" (Vygotsky 1994, p. 341). The experience of the environment affords different understandings and possibilities for each child dependent upon their psychological development.

The reciprocity between the child and the environment is an important point to consider as children experience new environments while transitioning to live in a new country. Moving countries provides a different physical and social environment for the children to experience. It is the way each child experiences and understands the new setting that becomes key to learning and development. Vygotsky (1966) put forward that young children use imagination as a tool to creatively rework a situation and establish their own sense and meaning from real life experience. Collaboration, creativity and imagination are important tools for the way that children interact with and come to understand their environment (Vygotsky 2004). Extending this conception of collaboration, creativity and imagination, Siraj-Blatchford (2007) introduced the concept of sustained shared thinking.

14.2.1 Sustained Shared Thinking

The term sustained shared thinking is defined as 'when two or more individuals work together in an intellectual way to solve a problem, clarify a concept, evaluate an activity, or extend a narrative' (Siraj-Blatchford 2007, p. 18). Sustained shared thinking was noted as one of the most effective learning strategies in quality interactions between young children and adults (Howare et al. 2018; Siraj-Blatchford 2009). The concept is seen in more formal collaborations between an adult and child when teaching is intentional (Ridgway et al. 2015). Sustained shared thinking is a pedagogical tool used by adults that encourages socio-cultural sensitivity, knowledge of the child and engagement in challenging cognitive activities and discussions. These activities are directed towards supporting the child's needs, confident risk taking and autonomy in learning (Howare et al. 2018). More recently studies on the implementation of sustained shared thinking has made visible the need for educators to consider relational pedagogy and positive emotional engagement with young children (Howare et al. 2018). When children interact without adults present, they can and do sustain and share their thinking, and learn in culturally situated, emotionally sensitive ways together. However understandably, quality pedagogy is not conceptualised or intentional in their interactions. Therefore, missing from this

body of literature is the way siblings come together to experience their new environment and use a form of sustained and shared thinking to solve complex problems. For this reason, the concept of cohesive collective is now introduced.

14.2.2 Cohesive Collective

The term cohesive collective is situated in theories of learning and development (Vygotsky 1997) and combines the scholarship of Beal et al. (2003) and Siraj-Blatchford (2007). Group cohesion was found to be supported by strong social bonds, completion of tasks, general agreement and emotions (Beal et al. 2003; Forsyth 2010). In the current study, cohesion is extended by introducing the term cohesive collective, used to describe a small group of emotionally attuned siblings, who voluntarily experience solving a problem or completing a challenging and risky task together. Improvised collaboration, that is, the moment to moment spontaneous exchanges of trying different ways to solve a problem together is an integral aspect. The cohesive collective (a small group of children working together) draw on, sustain and share their thinking to solve a problem that one actor would not be able to solve or complete individually. Central to this theoretical conception is the way bodies come together through joint movement, which is combined with thought processes that are bound conceptually.

In this chapter, analysis is based on four siblings' social interaction as they explore their new Malaysian garden, and form a cohesive collective to successfully pick mangoes from a high branch. The mangoes that have fallen to the ground are covered with fire ants (*Camponotus saundersi*), other mangoes attached to the tree are positioned in the upper branches and too high for each child to reach. In the case example in this chapter, the siblings are met with complex problems, which are systematically solved. This study examines sibling's emotionally supportive, risky, joyful, sustained and shared thinking as they come together to solve problems in a new environment. In this case example, the children are sensitive towards each other's needs, are affectively engaged in discussions and movements that include risk taking and autonomy in learning.

14.3 Visual Methodology

To understand social interaction in context requires a naturalistic form of data gathering. Contemporary research using cultural-historical theory advocates the use of Visual Methodologies (Ridgway and Fleer 2015; Ridgway et al. 2015). Digital images and digital video filming are part of Visual Methodology and provide a rich form of data gathering. The dynamic data enables multiple replaying, recreating and reviewing of data as focus participants interact with their new physical and social environment. A greater understanding of the data occurs when small moments

gathered over time are iteratively analysed (Quiñones et al. 2017). The richness of Visual Methodologies provides chronology of interaction and an emergence of the sibling's imaginings, and collaborative, creative efforts to collect mangoes. This methodology allows the researcher to move away from static forms of data gathering (experimentation, note taking) which focus on development that has already occurred rather than on the process of development (Vygotsky 1997).

14.3.1 The Research Context

This chapter is part of a larger body of work (Adams 2014) that holistically examines families with young children moving countries and transitioning into life in a foreign country. The families move due to one or both parents working for a multinational company. The transfer between countries usually eventuates, as the employee is a highly skilled worker and is required to develop business opportunities in the receiving country.

14.3.2 The Family Context

The family had recently moved from Australia to Malaysia due to the father's role as a manager in a multinational company. The family consisted of mother, father and four siblings Alie (8.7 years) Hetti (7.1 years), Bill (5.3 years), and Steph (3.2 years) and a newly acquired puppy, Bess. The family had moved from a five acre property in Australia where they tended a large vegetable garden and had free range chickens. In Malaysia, the parents had chosen to live in a housing complex located 40 min from the capital city of Kuala Lumpur. The house was situated on a small block of land that had tropical fruit trees such as mangoes, rambutan and lychee in the garden. The tropical fruit species were new to the siblings. The siblings were familiar with free-range gathering and eating from their vegetable patch in Australia. However, in their Malaysian garden, the height of the fruit in the trees and presence of red fire ants created a challenge for the siblings as they wanted to pick and eat the fruit.

14.3.3 Analysis

A dynamic analysis of the data followed a three stages approach (Hedegaard et al. 2008). The data analysis began with a *common sense* interpretation. The researcher completed a general analysis of individual and collective sibling interaction patterns across the whole data set of the focus family. The next stage was *situated practice* interpretation where analysis linked data (recorded interviews and digital video

recordings) sets from different research sites (home, school, family outings). Smaller video clips were made. Finally, thematic interpretation was introduced to further analyse the video clips. Themes were searched for in relation to sibling interactions with and without parents and peers.

When analysing at the thematic level, the concept of cohesive collective enabled the researcher to concentrate on the children's iterative processes of problem solving. The siblings attempted to gather and pick mangoes individually then gravitated together through verbal and non-verbal communications, and joint movements. The process involved repeated review of the digital video data and the capture of screenshots of individual and collective movements which enabled the researcher to analyse the individual and group perspective (Quiñones et al. 2017) and form a visual narrative (Ridgway et al. 2015) for sequential analysis. The way that the siblings formed and worked within the cohesive collective is presented.

14.3.4 Interview with the Mother

The mother explained that when the family were residing in Australia, their garden was large and much of the family's leisure time was spent tending and growing fruit and vegetables. The children were included in the process of growing vegetables and were 'usually in the garden with friends'. A favourite pastime of the siblings (and when peers were invited to play) was to pick and eat easily accessible fruit and vegetables. The siblings had knowledge of when and how to pick fruit and vegetables from their garden situated in Australia. The mother explained that she had discussed with the children about the right time to pick fruit and vegetables. The mother commented that Bill was, 'obsessed with picking and eating fresh vegetables and fruit' when in Australia and was 'very excited when he realised the trees were fruit trees in the Malaysian garden'.

According to the mother, in Australia, the family had a large social circle and a busy social life as they were involved with regular school activities (fetes, sporting events), their neighbours (all had children of similar ages) and their extended family lived close by. The mother explained it was different to living in Malaysia. The family did not know anyone or have social supports organised and were beginning to initiate social connections with neighbours and families from the school that the older children attended. The mother commented that living in Malaysia was:

> a very different life [compared to Australia]. The children are playing more together than ever before as the older ones have no friends to play with. They did not have opportunities to play together just the four of them so much in Australia as we were always so social and had lots of other children around. Here they are getting to see a different side of each other and at the moment they are playing really well with each other.

The following section is a visual narrative of a play example where the siblings are playing together in the garden. There were many instances noted when the four children were together and played for sustained periods of time. These included,

helping Steph to ride a bicycle without training wheels, making their own lunches to take to school and playing outside games. The mango case example was selected as it is representative of the way the children collectively sustained and shared their thinking over an extended period of time.

14.4 Gathering Mangoes – Case Study Documentation

The researcher was invited to attend the house at 6.30 am as the family rose early.

The siblings had eaten breakfast and were dressed for school (except for Steph). Alie collected a plastic bag, Hettie picked up Bess the puppy, and together with Bill they ran outside. The siblings walked around and looked at the ground. Hetti did not put Bess on the ground as the dog was yet to have its first inoculations. Alie and Bill selected mangoes from the ground only to discard them quickly. The mangoes were covered in fire ants. One mango, which was green and had no ants, was selected and placed in the bag. Alie noticed mangoes on the tree and moved to try and reach one that was attached to a low branch. Alie stood on her toes and reached up but could not touch the mango, so attempted to jump and pick the mango but was not successful (Fig. 14.1).

Bill observed Alie jumping repeatedly, and remarked that Alie needed to grab the branch and pull it down. Alie continued jumping and tried to grab the branch at full stretch while jumping, but she could not reach the mango (Fig. 14.1). Bill continued to look for mangoes on the ground and declared they were all covered in fire ants. Alie called Bill over to where she was standing, bent down and wrapped her arms around Bill's knees (Fig. 14.2) and attempted to lift him off the ground.

Bill misunderstood and tried to climb onto Alie's shoulders. Laughing she stated, 'No Bill, nnnno! No not that!' Hettie continued to hold Bess and simultaneously

Fig. 14.1 Individual try

Fig. 14.2 First try to collectively extend height

Fig. 14.3 Second attempt to collectively extend height

Fig. 14.4 First collective try to collect mango

watch Alie try and lift Bill. Steph continued walking around looking for mangoes (Fig. 14.2).

On the second attempt to pick up Bill, (Fig. 14.3) Alie placed her arms around his thighs, lifted Bill then stumbled backwards. Bill squarked and held tightly onto Alie's head. Alie walked 'blind' towards the mango hanging from the branch.

Bill positioned his arms around Alie's head. He reached for the mango making grunting noises then looked down towards Alie and stated, 'More over here more over', and pointed in the direction of where to move (Fig. 14.4). Bill laughed and stated, 'More over, more over'. Alie stumbled and Bill grabbed Alie's neck,

everyone laughed. Alie placed Bill on the ground. Hettie said 'I can do it'. Alie jumped up and lunged towards the mango, but it remained out of reach. Bill tried to jump up and reach the mango while Alie moved to Hettie, and said, "I'll take her inside then you can have a go'. Alie took Bess inside. Hettie commented that Bill needed to bend his legs more to jump higher. Bill continued unsuccessfully jumping towards the mango. Steph observed Bill.

Hettie and Bill moved to stand directly under the mango. Hettie placed her arms around Bill's thighs and lifted him up.

Alie returned without the dog, 'You got it?'

Bill reached up with one hand. Hettie stumbled and Bill placed one hand around Hettie's neck to steady himself. Hettie moved her feet apart and stood on her toes. Bill reached up with one hand, and was able to touch the mango (Fig.14.5).

Bill attempted to grab the mango a second time, Alie yelled, 'Use two hands. Pull it down'. Bill completed Alie's request and pulled the mango down and lifted himself up at the same time. The mango dislodged from the branch. He displayed the mango for Alie who yelled, 'YES!' All the siblings laughed (Fig. 14.6).

Alie ran over and jumped up to try and grab another mango. Bill handed the mango to Alie who stated, 'Good one!' Alie placed the mango in the bag. Bill told Hettie to lift Alie. Hettie reported that she had nearly lost her balance and had to

Fig. 14.5 Observer becomes lifter

Fig. 14.6 Success

Fig. 14.7 Swapping positions and taking turns

move her feet apart and stand on her toes to obtain more height. Alie demanded to be lifted by Hettie.

Hettie picked up Alie. Alie reached up easily and grabbed a mango. She tried to pull one down but it would not dislodge from the tree.

Alie had difficulty pulling the mango from the branch and said to Hettie, 'Let go of me, let go of me' and was still holding the mango. Hettie released her grip on Alie who continued to hold the mango, which was dragged from the branch (Fig. 14.7).

The Mother entered the scene and the siblings were directed inside to get ready for school.

There were many small scenarios taking place in this complex play. However, the main aim is to discuss the way the children were able to collectively problem solve to successfully pick mangoes.

14.5 Discussion

Through analysis of the case study, there are two discussion points. First, the new environment affords new possibilities (Adams 2014). Not having same aged peers to play with provided more time for the siblings to play together as the children were going through a stage of 'getting on really well' (mother's interview). In the new environment, the siblings repeated patterns of known activities such as gathering fruit from trees. The siblings tried individual and collective attempts to collect mangoes. Although the patterns were repeated in each subsequent attempt there were small moments of change due to directions offered by the siblings. Second, through working collectively, the siblings merged as one physically and conceptually to overcome and solve their shared problem. Working together as a *cohesive collective*, the siblings together became the more capable other and achieved picking the mangoes, a task that they could not complete individually.

14.5.1 *Changing Environment Affords Collaborative Possibilities – Emotionally Attuned Siblings*

When families with young children move countries, their physical, social and cultural environment changes due to the international move (Adams 2014). This is in contrast to Vygotsky (1994) who suggests that the child's environment does not change but the relation the child has with the environment does change as the child develops (Vygotsky 1994). In the current study, both the child's environment and their relation with the environment changes. A new country affords new learning and developmental opportunities in a changed environment. As discussed during the mother's interview, the family experienced a new and different physical and social environment in Malaysia compared to that of Australia. In Australia, the family were familiar with their physical and social context, for example, the climate was hot and dry and the siblings participated in regular and predictable social engagements with same aged peers, neighbours and extended family. Whereas in Malaysia, the physical environment was tropical with no known neighbours, school friends or family living close by. The physical environment changed for the siblings as did the social relations within the environment, thereby affording new and different possibilities. The Malaysian environment created new conditions for exploration, opening processes for different types of relations, learning and development with each other.

The siblings had strong social bonds and were provided with sustained opportunities to play together before and after school and on the weekends. According to the mother, the children played cohesively due to the new environment away from family and neighbours in Australia, commenting, 'they just have to get on as there is no one else for them to play with at the moment'. The time the children spent together in a new environment without known social partners afforded new possibilities for the siblings to play and learn from and with each other. Initially, in the first few weeks of the family residing in Malaysia, the frequency of positive relational interactions increased between the children (mother's interview). In the case example provided, the siblings were emotionally attuned to each other (laughed together; were comfortable lifting each other's bodies; helped each other join in). The siblings seemed to reproduced established leisure time and play patterns in Malaysia that they had participated in with peers when living in Australia (picking fruit). One such example is the way the siblings work together to collect mangoes.

14.5.2 *Dynamic Flow of Individual Attempts to Collect Mangoes – Sustained and Shared Thinking*

Although the sibling's move between individual and collective attempts to gather the mangoes, the individual attempts are discussed first. Initially the children seek mangoes from the ground independently. However, the presence of fire ants on the

mangoes resulted in the need for a different way to collect the mangoes (the children did not want a painful bite from the fire ants). Alie positioned herself near the lowest hanging mango and repeatedly jumped reaching for the mango (Fig. 14.1). It is inferred that she imagines it is possible to pick the mango from the branch, as she keeps trying to jump towards the mango. Bill observed Alie jumping and suggested that she was close to reaching the branch and needed to pull the branch down (Fig. 14.1). Alie changed her focus and attempted to reach a low hanging branch. It is inferred that the siblings observed, considered and supported each other's actions (Figs. 14.2 and 14.3), sustaining and sharing their thinking. Through offering suggestions on different ways to pick the mango (Bill suggested to Alie that she grab the branch and pull it down), the sibling's agreement was noted as they accepted the advice and implemented the changes. Showing that they supported each other in a nurturing, caring, joyful manner (laughter; Heti watching Sarah intently). Directing attention to Forsyth (2010) who argued that in the formation of a cohesive group there needs to be positive emotions and general agreement.

Observation and suggested ways to change the process to pick the mango contributed to the sibling's multiple individual attempts to reach the mango in the tree. Steph and Hettie (still holding the dog) stood and observed their siblings intently (Figs. 14.2 and 14.3). Observation is deemed an important way of learning. Gray (2011) points out that learning occurs implicitly in most traditional societies where children are immersed in the culture and practice skills with some verbal instruction by more capable others. In these societies, children tend to learn 'just by observation' (Gray 2011, p. 510). Vygotsky (2004) takes this further and suggests that observation and perception are important for children's learning and development. As Alie and Bill attempted individual jumps, they observe each other and in each moment according to suggestions by another sibling, changed their actions slightly to try and get closer to picking a mango. This was in contrast to Howe et al. (2005) who reported that older siblings scaffold learning for younger siblings. In this example, the siblings guide each other (Hettie, 'Bend your legs when you jump Bill') share emotions (Fig. 14.1) and learning. Different to Howe et al. (2005) in this example, the older and younger siblings contribute equally to solving the problem and all suggested feasible ways to change actions to potentially reach the mango. There was agreement between the older and younger siblings (Alie took Bess inside so that Hettie could have a turn lifting Ben). The siblings worked collectively to solve the problem of gathering mangoes from a high branch in the tree.

Bill imitated Alie's jumping actions (Fig. 14.5) and unlike Alie, changed position, bent down low and seemed to launch himself into the jump as instructed by Hettie. Imitation is more than mindless copying, instead it is a way for a child to creatively rework the situation (Vygotsky 2004). Although each jump was unsuccessful, it was also different (Alie initiated a straight legged jump, Bill bent low and launched himself). It seemed that through the children's jumps and moments of feedback, the siblings thought processes were bound conceptually by their sustained and shared thinking and imagined possibilities of dislodging the mango from the tree. Vygotsky (2004) suggests that imagination supports individuals to think about future experiences. Although the jumps are individual activities, the three eldest

siblings continued to comment on ways to change each other's jumping to increase the height ('bend your legs', 'get under the mango'). The children came together voluntarily with a collective idea (picking mangoes) and attempted to reach their goal by creating new and different ways to dislodge the mango from the tree at first individually and then collectively. It is the sustained and familial social relations that support each child's actions and make it possible for the siblings to continue in their quest of collecting mangoes by working cohesively.

14.5.3 Dynamic Collective Attempts – Improvised Collaboration

Culture is embedded within the process of child development, which according to Vygotsky (1997) occurs first socially, between two individuals then psychologically as the individual's conscious thought develops. The siblings worked together creatively, and explored various ways to pick the mangoes individually and collectively. Alie initiated lifting Bill (Fig. 14.2) without verbally communicating her intent. Yet, Alie and Bill seemed to have the same conceptual understanding. Bill would act as an extension to Alie's body to pick the mango. In this instance, the siblings tried to become one and extend their height. However, the siblings needed to move through the process of successive attempts to be able to fulfil their goal (Figs. 14.2 and 14.3). Bill tried to climb onto Alie's shoulders, not fully understanding that Alie's intention was to lift him by the legs. Alie was not strong enough to stand once Bill was on her shoulders and laughed then tried a different way of lifting Bill (Fig. 14.3). The siblings extended their shared intentions as together, they tried to increase their height. Although the siblings participated in a social act together, their initial understanding did not align (Bill climbed onto Alie's shoulders).

Through the improvised collaboration, Alie took two further attempts to pick Bill up and stumbled to be positioned under the mango. Bill seemed heavy and not pliable with his torso positioned at Alie's eye height. Bill's arms were placed around Alie's head obscuring her vision as he held tight (Fig. 14.4). Bill's combined physical gestures and verbal utterances to direct Alie towards the mango were not adhered to. This was due to the generalisations (Vygotsky 1987) Bill used in his speech "More over, here (*points in the direction of the mango*), more over". Vygotsky (1994) comments that speech and actions are fundamentally tied together as young children develop. In the process of development, word meanings are generalised. The generalised way that Bill used words and actions to convey where he wanted Alie to move, hindered their progress. It was possible that Bill thought Alie could see the same thing as he could, yet he was obscuring Alie's vision. In these instances, reality and generalisations stood in the way of possibilities and understandings. Metacommunication is required so participants can successfully share the experience and coordinate actions in situations as to who, what and how it will occur (Winther-Lindqvist 2013).

14.5.4 Collective Efforts – Bodies and Thought Processes Bound Conceptually

The siblings worked together through a collective effort, suggesting changes in actions and physically supporting each other by lifting and caring for the puppy. Hettie had been observing Alie's attempt at lifting Bill to pick the mango. Hettie suggested the she could lift Bill in the next attempt (Fig. 14.5). Alie offered to take the dog inside, freeing Hettie to lift Bill. Similar to the young children in Rogoff's (1990) study, it is inferred that Hettie had learnt from her observations and attempted a slightly different approach. Standing directly under the mango, Hettie moved her feet apart then lifted Bill whose gaze was directed towards the mango. Bill was able to reach and touch the mango with one hand. In this situation, Hettie had imitated Alie but had creatively reworked the situation in various ways (positioning under the mango, lifting Bill by the thighs) and successfully lifted Bill who was able to pick the mango.

After the event, Hettie commented that she had nearly lost her balance and had to widen her stance and stand on her toes to make sure Bill could reach the mango. Verbalising knowledge highlighted the fact that Hettie had a conscious awareness of balance and how to stabilise herself while lifting Bill. During the time that Hettie was holding the dog and observing, it seemed Hettie had developed conceptual awareness to improve on Alie's attempt to lift Bill. Although Hettie seemed to plan, in contrast, Bill's movements were directed by Alie (Fig. 14.6). First, Bill reached up with one hand and was directed by Alie to use two hands. However, it seemed he was not strong enough to dislodge the mango, so he used two hands to pull himself up, and at the same time, drag the mango down. Finally, the mango was dislodged from the tree. The collective challenging problem was solved (Fig. 14.6). The siblings acted as a cohesive collective and integrated learning from observation, joint movement and conceptual understanding. The siblings merged as one physically, conceptually and cognitively to solve a joint problem. However, it went beyond this as through using their bodies as one, and forming a cohesive collective, the siblings became the more capable other. The successful action was repeated with Hettie lifting Alie (Fig. 14.7). Through working together as a cohesive collective, the children became the more capable other.

14.6 Conclusion

This study contributes to a larger body of research that examines changing family contexts when families with young children are moving countries (Adams 2014). Specifically, in this chapter, the focus has been to examine the way siblings explored their new garden environment in Malaysia. The siblings came together to solve the problem of picking mangoes located high up on the branches of a tree. Similar to Howe and Bruno (2010) and Palacios et al. (2016), in the current case example

gathering mangoes was successful, not because it was directed by older children but because the siblings worked together in a similar way as expected from same aged peers. The siblings treated each other as equals, through the reciprocity of listening, heeding each other's advice and working together as a cohesive collective.

The concept of cohesive collective as a theoretical contribution, builds on the scholarship of (Vygotsky 1987, 1994), Siraj-Blatchford (2007, 2009), Beal et al. (2003) and Forsyth (2010). The siblings provided a glimpse of group cohesion initiated by strong bonds, emotions, and general agreement while working towards solving a problem. However, the understanding of group cohesion was extended through the synthesis of theory and data. The term cohesive collective was introduced. This is understood as being a small group of emotionally attuned peers (or siblings), voluntarily sustaining and sharing their thinking, experiencing solving of a problem that one actor would not be able to solve individually. Central to this new concept is improvised collaboration where bodies come together through joint movement, with thought processes bound conceptually through sustained and shared thinking.

Although there are many implications for this research, three are outlined here. First, the majority of research is on same age peers playing together (Blatchford 1998; Gray 2011; Fleer 2011) in schools or early childhood settings. More studies are required on multiage interactions in family settings as siblings interact socially. The way siblings interact as peers and extend their own and each other's learning through working as a cohesive collective is an under-researched area and one that requires attention. Second, there is research that discusses the important role that adults play in children's learning and development (Fleer 2015; Vygotsky 1987) and although studies acknowledge the importance of children learning together out of the adults gaze (Ridgway et al. 2015), which Hakkarainen refers to in Chap. 2. More studies are required on the way children work together to extend each other's learning. Finally, this small-scale study uses a Vygotskian lens to analyse siblings' social interaction while families with young children move country. More studies are required in this area to support understandings of the way siblings and peers work as a cohesive collective when in a new environment.

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