Part 1

Learning and development in play

1 A political–pedagogical landscape

> Society and its institutions are not stable, unchanging structures. Emerging economic, political and cultural changes modify the ways people act and interact, and these changes also may have significant influences on human cultural development. However, the influence of changing societal structures on human activity and development is not a deterministic process. It depends on how these changes are perceived and how people cope with them. The recent transition of the global society into a knowledge economy is changing people's interactions, including their expectations, and the demands that are made on people.
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> (van Oers, 2009: 213)

INTRODUCTION

Over the past 10 years there has been unprecedented research interest in early childhood education around the globe. Longstanding and recent economic arguments (e.g., Heckman & Masterov, 2007; McCain & Mustard, 1999, 2002) have caught the eye of policy and departmental administrators in many countries. Economic arguments have centred on the rates of return in relation to investment in education. Age has become an important criterion in the investment analysis, with early education, particularly for the disadvantaged (usually defined as a low socioeconomic community), yielding the best economic returns for a society (see Heckman & Masterov, 2007). At the same time, research from neuroscience has made concrete (e.g., National Research Council and Institute of Medicine, 2000; Shore, 1997) what early childhood educators have known through their own research and practice for over a 100 years: that a quality early childhood

experience for a child has a profound effect upon the child's schooling outcomes (Belfield, Nores, Barnett & Schweinhart, 2005; Sylva et al., 2004; Wylie & Thompson, 2003; Wylie et al., 2006) and their later life chances (Mitchell, Wylie & Carr, 2008; Schweinhart & Weikart, 1997, 1998, 1999; Schweinhart, Weikart & Larner, 1986). Although early childhood specialists have not been accorded Nobel prize status for their pedagogical and family-centred work, economic analyses have been more effective in getting the community to sit up and take notice (see Heckman & Masterov, 2007), and these latter arguments have been most influential in framing international reviews of early childhood care and education policy and in shaping country directions (e.g., Mitchell, Wylie & Carr, 2008; National Research Council, 2001; OECD 2006). These are important and significant changes in the political landscape of the global early childhood education community.

In this book the changing political context of early childhood education is acknowledged, but the evidence base from a pedagogical, rather than an economic, perspective is re-examined. The recently introduced concept of **sustained shared thinking** (Siraj-Blatchford, 2007) is discussed in relation to Vygotsky's (1987a) theoretical writings on everyday concepts and scientific concepts (both of which will be discussed in full later in this chapter and throughout this book). It is argued that knowing about sustained shared thinking is not enough and efforts directed to this area (Siraj-Blatchford & Manni, 2008; Siraj-Blatchford & Sylva, 2004) begin the important work needed for transforming pedagogy in the early years (Siraj-Blatchford, 2007). However, a deeper theoretical understanding of concept formation is needed to fully appreciate how the social process of teaching turns everyday practice into the conscious realisation of concepts that children use to transform their everyday lives, an important goal of this book.

In this book the focus is on conceptual development, where the term *concept* includes traditional knowledges formed through discipline or subject matter content. The term *concepts* may also encompass other valued knowledges that are supported through early childhood curriculum (see chapter 4).[1] Throughout this book the theoretical ideas build into a model of pedagogy for concept formation within play-based settings. Through a deeper theoretical discussion of key concepts in early childhood education, this book strives to reclaim the early childhood territory and provide a pedagogical discourse for navigating our way through the contemporary political landscape. It also makes explicit the core concepts in pedagogy, which empirical evidence has shown to make a difference to children's learning. Empirical material is used to show how concept formation occurs in

early childhood education. It is argued that the early childhood profession now faces a new political–pedagogical landscape that has foregrounded concept formation and as a profession we must respond by researching and theorising how concept formation occurs within play-based programs. In the OECD report *Starting Strong II* (2006), for instance, the authors have mapped pedagogical practices in relation to political imperatives within particular countries and shown a continuum between social pedagogical approaches and programs that focus on traditional values such as social and emotional development (see chapter 4), and those that focus on school subjects (e.g., literacy and numeracy) termed by the OECD as a preprimary approach. How can early childhood professionals continue to support social outcomes and pedagogy at the same time as realising literacy and numeracy outcomes in the preschool years? Attention will be devoted to this theoretical challenge throughout this book.

MAKING A BIG DIFFERENCE

The increased international attention on early childhood education has proffered a promise of making a difference to the lives of disadvantaged families. For instance, in the OECD (2006) report on early childhood education and care, the authors state that

> Children at risk of educational failure are the object of a variety of policies and programs that seek to address the challenge through early education interventions, and increasingly through a comprehensive service approach focusing on the home and community environments (Haire & Radhakrishnan, 2004; Tremblay et al., 2004) . . . Children from low socio-economic status (SES) families are less likely, statistically, to develop the same level of skills and intellectual capital as children from high SES backgrounds. Feinstein (2003) finds, for example, that a 13% difference in cognitive development exits at 22 months of age between British children from high and low SES backgrounds. By the age of 10 years . . . an average gap of 28% in cognitive development is recorded (p. 34).

Making a difference to the lives of children from low SES families is a significant and important goal for a society to strive for, and a huge responsibility for the early childhood field to shoulder. The relational links between poverty and quality early childhood education established in the research literature provide hope. But these relational links are based on a quality educational program being delivered. It is only in recent times that

we have come to appreciate the complexity of what quality early childhood education means (David, 2005; Farquhar, 2003; Urban, 2005) and to begin to determine what are the indicators of quality education (Alton-Lee, 2003; Weber, 2002) that make the biggest difference for preschool-aged children (Siraj-Blatchford, 2009; Siraj-Blatchford & Sylva, 2004; Siraj-Blatchford et al., 2002, 2004).

One of the most significant factors to have been identified in determining quality and in making a big difference to learning for disadvantaged children has been the pedagogical approach of sustained shared thinking in play-based programs (Siraj-Blatchford, 2007). Siraj-Blatchford (2009), Sammons et al. (2002, 2007) and Siraj-Blatchford et al. (2002) have shown in their longitudinal research and case studies that staff with extensive teacher knowledge (as evidenced by tertiary education) produce the highest cognitive outcomes for children. This research has shown that teachers are a significant factor in determining concept formation. Siraj-Blatchford (2009) has identified among other factors that

- effective pedagogues have good curriculum knowledge and child development knowledge
- the most highly qualified staff provide the most direct teaching as well as the kind of interactions that guide but do not dominate children's thinking
- less qualified staff are better pedagogues when supervised and supported by qualified teachers (p. 156).

This work has highlighted 'play-based programs' and the importance of the 'mediating role of the teacher' through generating 'shared sustained conversations' with children (Siraj-Blatchford, 2007). Siraj-Blatchford and Sylva (2004), for instance, suggest that in programs where a balance between teacher-initiated and child-initiated group work and play activities exist, sustained shared thinking involves cognitive construction that has mutual 'understanding of the other' and where learning is achieved through a process of reflexive 'co-construction'. A necessary condition for this would be that both parties 'were *involved*, and, for the resultant learning to be worthwhile, that the content should be in some way *instructive*' (p. 720; emphasis in the original). This research is the single most important contribution to early childhood education reported in the literature in recent years. In introducing the concept of sustained shared thinking, the question that needs to be asked is: sustained shared thinking about what?

Historically, the early childhood profession has been strong on process but weak on articulating (and, indeed, understanding) cognitive content

(see Cullen, 1996, 2009; Hedges & Cullen, 2005). Evidence for this has been seen through the numerous critiques of early childhood teachers' knowledge base in a range of learning areas (notably teacher knowledge of concepts), with findings that demonstrate very limited understandings of concepts in science (Appleton, 2006; Traianou, 2006), in literacy (Raban & Ure, 2000), with variability in findings noted for mathematics (Darling-Hammond, 2000) and a correspondingly low level of confidence and limited engagement in programming for these areas (Garbett, 2003). Conceptual knowledge has tended to be strongest in child development knowledge and learning theories, in child and family sociology, and in methodologies associated with child study (Fleer & Raban, 2006). Traditionally, these knowledges have been framed from a maturational perspective, drawing primarily upon traditional psychology to inform their framing (e.g., Blaise, 2009; Dahlberg, Moss & Pence, 1999; Edwards, 2009). Chapter 3 will reconsider these claims and examine the conceptual knowledge of teachers in detail.

WHAT KIND OF PROGRAM PROMOTES SUSTAINED SHARED THINKING?

The second part of Siraj-Blatchford's (2007) statement on what makes the difference to children's learning focuses on the importance of sustained shared thinking occurring in play-based environments. Wood (2008) has suggested that 'the commitment to play in education settings has always been strong on ideology and rhetoric and weak, or at least problematic, in practice' (p. 6). Play has been narrowly theorised as maturational (play as a natural expression of children) (e.g., Bruce, 1991, 1997) or centrally as a pedagogical tool for framing how 'teaching occurs' in early childhood settings (e.g., Brock, 2009). Although a multitude of differing views about what constitutes play and therefore what we mean when we use this term as a pedagogical tool in early childhood education abound in the literature (see Wood & Attfield, 2005), much of this work sits in isolation of concepts or content knowledge. In bringing together sustained shared thinking with play, Siraj-Blatchford (2009) provides a significant relational understanding between pedagogy and content knowledge; this work is much more explicit about teaching than previously discussed in early childhood education. But herein lies an important theoretical problem. In what kind of play-based program does concept formation take place for children? In the following

examples taken from a cultural–historical[2] study of concept formation (see Fleer, 2009a, for details of the study design), this theoretical problem is made concrete:

> A group of three girls is inside a wooden boat that is within the outdoor area of a rural preschool located near a fishing port. The teacher and the assistant teacher have been running a preschool program that involves coloured water, plastic containers, tubes, funnels and a series of bottles with pump action dispensers. Many of the children are in the outdoor area funnelling coloured water. The teacher has recorded in her program that she is teaching science using materials that will facilitate potion play. The assistant teacher is inside working with a group of children on an art activity and the teacher is moving equipment around the outdoor area to support the children's potion play. The three girls now move outside of the boat and cluster around a pump action dispenser bottle of red coloured water, several spoons and a soft toy Humpty Dumpty. The girls work together and generate a playscript that calls for them to dispense medicine to the Humpty, who has fallen off the wall.
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> Jayde takes a lead in the play, initiating the playscript about Humpty Dumpty by announcing 'He [Humpty] fell off the wall again and this is a girl Humpty'. Five girls are now surrounding the soft toy. Chloe responds by picking up Humpty and sitting him on the seat again. She says, 'Humpty fell off the wall again'. Freya moves closer and picks up a spoon, places it under the dispenser of the coloured water bottle and says, 'Wait. I'll spray it. I have to spray it.' She fills the spoon with red liquid from the bottle. Jayde says in response, 'Oh hi, ah, Humpty Dumpty'. Another child joins the group. She says, 'Hello. How are you today?' to no one in particular. All the children look up at her, and then turn back to Humpty Dumpty lying on the seat. Freya passes the spoon to Jayde, saying 'Here you go'. The children dispense a spoon of red liquid to Humpty. Another child moves forward and says, 'Ah, let me see'. She touches Humpty Dumpty's arm and says, 'Touch it here'. Jayde says, 'Yes, he's dead, he's dead. I knew he, he's dead'.

In this particular play scenario the group of children brings together the well-known narrative of 'Humpty Dumpty' with their everyday understandings of medicine. Their playscript focuses on healing Humpty Dumpty who has fallen off the wall. Potions for these children are not about materials and their properties to be gleaned through mixing (e.g., density of substances, as planned by the teacher), but rather it is about medicine and caring for people in the community. This play example is not illustrative of the conceptual focus in science that the teacher had

hoped for or had assumed would be generated through playing with the materials.

In this particular centre, the teacher has a clear view of how learning should be framed for children. She believes that the materials she provides should suggest the play, and therefore generate the learning for children. In the interview she stated:

> There [are] children coming out and in [of play] . . . when[ever] they want . . . I really liked the independence . . . I did not set up one thing . . . the children did it all themselves . . . and I was really pleased with that because I just think people set things up too much for the children.
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> (interview with Teacher A)

The teacher, through providing a range of materials, did seek to generate scientific learning through play. Through organising the theme of potions she provided a range of materials for the children for mixing substances so that they could learn about how materials behave and how they do or do not mix. This was her learning intention. Her pedagogical approach was to allow the materials to do the teaching of the scientific concepts. This is not an unusual view of learning pedagogy in early childhood education, as Siraj-Blatchford (2009) has shown in her research. It is also not unusual in science education, as a discovery learning approach (Karpov, 2003) also seeks to allow children to focus on discovering the learning concepts through 'playing with the materials/equipment'. However, as Vygotsky (1966) has argued, 'It is vital to discover exactly what this activity does for development, that is, how the imaginary situation can assist in the child's development' (p. 9). As hoped by the teacher, the materials scattered around the preschool did indeed suggest possibilities for the children's play. The children generated an imaginary situation in which the spoons and coloured water (potions) were used to medicate Humpty who, of course, kept falling off the wall (as the rhyme suggests) and who required continual medical assistance. The plungers were useful for dispensing medicine, and the coloured water in the bottles was ideal for representing medicine. The children's play did focus on the materials within the bottles, but it did not lead to thinking about mixing the substances.

The play that resulted enabled the children to follow the rules for giving and receiving medicine as the children would have experienced it in their own lives. As Vygotsky (1966) has argued, 'there is no such thing as play without rules and the child's particular attitude toward them' (p. 9). The children used the known narrative of 'Humpty Dumpty' to collectively

build the playscript. The addition of the line 'Humpty fell off the wall again' enabled all the children to participate in administering medication. It signalled to all the players that the repetition of medicating Humpty was possible in this game. This additional action statement enabled the play to continue. The additional action statement sat within the predetermined playscript, which was an imitation of administering medicine in everyday life through the imaginary and known rhyme 'Humpty Dumpty'. Clearly, 'Only actions which fit these rules are acceptable to the play situation' (Vygotsky, 1966: 9; see chapter 7 for a fuller discussion of these ideas).

In keeping with the teacher's philosophy, the materials alone provided the stimulus for the play. The children generated their own playscripts, and the teacher did not participate in the children's play. The imaginary situation that resulted enabled the children to explore relevant daily activities through play, as suggested by Vygotsky (1966): 'What passes unnoticed by the child in real life becomes a rule of behavior in play' (p. 9). Through administering medicine the children were coming to understand the actions performed by adults as they give medication to their children. They were consciously exploring the rules of being compliant as you receive your medication, and through this getting better and being ready to fall off the wall again, so that the play could continue. The play activity clearly held, and generated, motives for the children (see chapter 2 for a detailed discussion of motives, imitation and consciousness of concepts through play). It is also a real example of the kind of imaginary play that stems from children's everyday lives, where taking medicine is usually an unpleasant but necessary part of life with rules and expectations that could be imitated by the children in their play. As stated by Vygotsky (1966):

> I think that wherever there is an imaginary situation in play there are rules. Not rules which are formulated in advance and which change during the course of play, but rules stemming from the imaginary situation. Therefore to imagine that a child can behave in an imaginary situation without rules, i.e., as he behaves in a real situation, is simply impossible (p. 10).

The rules of the imaginary situation framed the children's play activity. The narrative did not lend itself to consciously exploring the mixing of substances. Because the teacher's philosophy was framed within a non-interventionist role, it is unlikely that this particular play activity would have moved towards the mixing of substances without new directions being introduced (e.g., This medicine is not working; we need to make

our own medicine) (see chapters 3 and 9 for fuller discussion of this idea). The narrative within the play framed what actions were possible for the children, and through following those particular rules of play, the children's thinking was forged in particular directions.

THEORISING CONCEPT FORMATION IN PLAY

This play vignette, as illustrative of the theoretical problem of defining sustained shared thinking in play, can be better understood when we draw upon Vygotsky's (1987a) writings on concept formation and Hedegaard's theory of a double move (see Hedegaard & Chaiklin, 2005). Only a brief discussion is presented here (further discussion occurs in chapters 6 and 7). According to Vygotsky (1987a), concept formation should be thought about at two levels – an everyday level and a scientific[3] or academic level. At the everyday level, concepts are learnt as a result of interacting directly with the world – developing intuitive understandings of how to do things, such as administering medicine or caring for the sick. These are important everyday concepts about how the world works (e.g., its rules, expectations, social roles, etc.). At this level, children may not know the science behind their actions. It is unlikely that, for instance, a four year old child will have knowledge of the biology and chemistry associated with medicines. At the scientific or academic level, Vygotsky (1987a) argued that concepts are introduced to children through some form of instruction, that is, concepts are explicitly examined or taught to children. When these concepts are introduced to children away from their everyday experiences, they are, Vygotsky (1987a) argued, disembedded and hold little meaning for children (see chapter 3).

Vygotsky (1987a) suggested that everyday concepts and scientific concepts should be thought of as being **dialectically**[4] related to each other. Vygotsky (1987a) also argued that everyday contexts lay important foundations for learning scientific or school-based academic concepts. Developing everyday concepts in the context of children's everyday world is important not only for living but also for making sense of scientific ideas. Everyday experiences and the concepts that are learnt through them lay important foundations for scientific learning, in the same way as scientific concepts learned at school pave the way for thinking differently about everyday concepts. However, these two processes must be related. Thinking consciously about scientific concepts, while in an everyday context where important