International Perspectives on
Early Childhood Education and Development 4

Niklas Pramling
Ingrid Pramling Samuelsson *Editors*

Educational Encounters: Nordic Studies in Early Childhood Didactics

Springer

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International Perspectives on Early Childhood Education and Development

Volume 4

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:

- Examine how learning is organized across a range of cultures, particularly Indigenous communities
- Make visible a range of ways in which early childhood pedagogy is framed and enacted across countries, including the majority poor countries
- Critique how particular forms of knowledge are constructed in curriculum within and across countries
- Explore policy imperatives which shape and have shaped how early childhood education is enacted across countries
- Examine how early childhood education is researched locally and globally
- Examine the theoretical informants driving pedagogy and practice, and seek to find alternative perspectives from those that dominate many Western heritage countries
- Critique assessment practices and consider a broader set of ways of measuring children's learning
- Examine concept formation from within the context of country-specific pedagogy and learning outcomes

The series will cover theoretical works, evidence-based pedagogical research, and international research studies. The series will also cover a broad range of countries, including poor majority countries. Classical areas of interest, suchasplay, the images of childhood, and family studies will also be examined. However the focus will be critical and international (not Western-centric).

Niklas Pramling • Ingrid Pramling Samuelsson
Editors

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Foreword

The OECD *Starting Strong* reports and the UNICEF 2008 *Childcare Transition* commended Sweden for the high quality of its early childhood system. However, as Professor Ingrid Pramling Samuelsson and Associate Professor Niklas Pramling, the editors of the present volume remark: "When quality is considered in an international comparison, it is the globality of support for children and families that is in focus." Although international studies may identify the legal frameworks and the structures that sustain quality—such as the incorporation of the UNCRC into the laws of a country or a high level of state investment in early childhood services or respect for reasonable child–staff ratios—they rarely examine the quality of everyday experiences of children, partly because few such studies exist. The present volume addresses this gap and, in a series of studies mainly from Sweden (two studies are from Norway), presents its readers with detailed descriptions of the learning experiences of young children in preschools.

This study sets itself the dual objective of exploring how young children learn and of identifying the role and specific pedagogical skills of the early childhood practitioner in the child's learning. To throw light on children's learning, the various studies in the book focus on children in their everyday life in the preschool and investigate, in particular, the interaction and communication between teachers and children, and between children. Particular attention is given to children's sense-making of the things presented to them, for example in ecology (Chap. 4), literacy (Chap. 10), art (Chap. 5), etc. A central feature of this dimension is the teacher's ability to understand the child's own perspectives and incorporate them into his/her strategies, approaches, communication and interplay. The intention is to be part of the child's learning processes and to combine the child's interests and intentions for learning with the goals of the preschool curriculum. However, the various knowledge strands of the curriculum, which a particular society identifies as important for children to explore, should not be the subject of direct teaching but rather emerge from broad themes attractive to or proposed by young children. These strands can be foregrounded by the teacher through questions, shared thinking and other pedagogical approaches. The focus will be on processes rather than outcomes, although it is important that the teacher should be clear about the intention of a particular ac-

tivity from his/her perspective as well as from the children's perspectives and have the skill to coordinate these perspectives.

Educational Encounters recognises that there are important lessons to be learnt from previous approaches to pedagogy, not least in that many have attempted to bring the authentic world of the child into preschool practice—the family and its members, the shop, the natural environment, the changing seasons and the professions that fascinate young children. The early childhood professional has, however, a particular role—to turn these authentic experiences into an education encounter. To qualify as an educational encounter, the experience itself needs to be worked on by the teacher, who will introduce the children to new aspects of knowledge, scaffold their appropriation of the 'tools of the domain' (which are more or less specific to the particular domain of knowing, e.g. music, visual arts), and through naming, categorising (abstract generalities, patterns) and making distinctions (pointing out differences) assist children to broaden their learning.

In my opinion, this is an important book. *Educational Encounters: Nordic Studies in Early Childhood Didactics* contributes, on the one hand, to a new academic discipline (viz, studying young children's learning, across a broad range of thematic activities, in the actual preschool setting) and, on the other hand, to the development of a science of early childhood pedagogy (or *didactics*, as referred to in the volume). Its publication at the present moment is particularly opportune. Across Europe, the need is felt to define more clearly the kinds of professionalism and the competences that early childhood professionals need in their daily work in early childhood centres. Thus, the European Commission issued in 2010 an invitation to European universities to undertake research and propose recommendations on the issue of staff competences in early childhood services. In so far as pedagogical competences are concerned, this well-focussed text provides a rich input to the European debate. Its impact, I believe, will be wide, reaching not only national and European policy makers, but also teacher training institutes and the many early childhood practitioners who are often unsure about their pedagogical role.

Visiting Fellow, Thomas Coram Research Unit John Bennett

Preface

Early childhood education (ECE), or preschool as it is called in Sweden, for children 1–5 years of age, is becoming more common all over the world, and ever-growing numbers of children are being enrolled. It is also becoming more regulated in many countries since curricula, frameworks, standards or plans of various kinds have been developed to guide practice.

In Sweden we are at the moment of writing, in the process of launching a new school law, and this includes preschool. This law states that "practice with children should be based on experience and research" (prop. 2009/2010, p. 165). Attention is drawn to research and what research tells us about important aspects of work with children in early years.

In this book we will give some examples of research of relevance to professional work with children. The specific areas covered are: arts (drawings, dance and music), ethics, nature-knowing/science, literacy, mathematics, democracy, gender and narrative. These studies share certain features: (1) They focus on problems of relevance to children's learning and development in the context of preschool, (2) the studies have been carried out in everyday practice with children and (3) there is a genuine effort to improve practice based on the results.

This kind of qualitative research is more common and developed in the Nordic countries, perhaps due to the large number of preschool teachers who have pursued doctoral studies in education. This group has also contributed to the development of the academic field of ECE. In this book we want to share this kind of research with other professionals. Preschool teachers have participated in many of the studies presented and have supplied invaluable feedback, which encourages us to believe that this book could be very useful to professionals working in ECE as well as to researchers and those pursuing university studies.

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Ingrid Pramling Samuelsson is professor and coordinator for early childhood education at the Department of Education, Communication, and Learning, University of Gothenburg, Sweden. She has a background as a preschool teacher and in 1996 she was the first Swedish chair in early childhood education. Her research mainly deals with how children make sense of different aspects of their surrounding world, in the context of preschool (day care and kindergarten). Another research interest is teachers' professional development. She is also World President of OMEP (Organisation Mondiale pour l'Éducation Préscolaire) and holds a UNESCO chair in early childhood education and sustainable development.

About the Authors

Marie Bendroth Karlsson was awarded her PhD from Linköping University, Department of Child Studies in 1996. She is now a senior lecturer in art education at the University College of Gävle and guest lecturer at the University College of Borås. Her main interests concern art in early childhood and questions how to promote teacher training in the arts. Additionally, ongoing research concerns how children relate to outdoor places near their preschool.

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Anette Emilson is an associate professor in education at the Linneaus University, Sweden. She has a background as a preschool teacher and has mainly worked with children under the age of 3 years. In 2008 she defended her doctoral thesis and her research focuses on the issues of fostering citizenship for toddlers in a preschool context, with a special focus on children's participation and influence in everyday life in preschool. This research takes a critical approach and uses theoretical ideas derived from Jürgen Habermas.

Elin Eriksen Ødegaard, PhD, is a researcher at the Centre of Educational Research at Bergen University College in Norway, where she currently leads the project "Kindergarten as an Arena for Cultural Formation" (financed by the Norwegian Research Council 2009–2013). Kindergarten is here considered socio-epistemologically, as an arena of multiple dimensions, socio-cultural, ideological, material etc. where children play, learn and shape new meanings and identities.

She received her PhD in educational science from the University of Gothenburg, Sweden, in 2007. Her dissertation, *Narrative meaning-making in preschool*, was based on narrative inquiry. Her scholarly interests include children's agency, cultural formation and children's and teachers' co-narrative practice, as well as historical, political and international perspectives on early years education. She is also the president of OMEP Norway, the Norwegian branch of the World Organization for Early Childhood Education.

Gustav Helldén is professor emeritus in science education at Kristianstad University College. He has been working in teacher education since 1984. During this period he has also to a great extent carried out in-service courses for teachers in early childhood, primary and secondary education. Prior to that, Gustav Helldén taught biology and science in lower secondary and upper secondary schools. His research interest concerns the long-term development of students' understanding of ecological phenomena. Through such long-term studies, it has been possible to identify personal contexts and continuity as recurrent themes in the students' explanations. Such studies also showed that early episodes in childhood have an important influence on students' future learning about scientific phenomena. Through the years, Gustav Helldén has collaborated with researchers at the University of Leeds, Cornell University in the USA and Deakin University in Melbourne. He was founder and leader of Learning in Science and Mathematics Research Group (LISMA) at Kristianstad University College between 1994 and 2004.

Anette Hellman is a former preschool teacher. She works as a lecturer at the Department of Education, Communication, and Learning at the University of Gothenburg. Her research interest concerns gender and normality constructions and she received her PhD in 2010, when publicly defending her thesis entitled *Have you Ever Seen a Pink Batman? Negotiations of Boyishness and Normality in a Preschool*.

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Cecilia Wallerstedt was awarded her PhD in 2010 at the Academy of Music and Drama at the University of Gothenburg. She has a background as a teacher in music and mathematics in upper secondary school. Parallel to her PhD education she has worked in a 3-year cross-faculty research project (Humanities, Arts and Education) that dealt with young children's aesthetics learning in pre- and primary school. The project has generated a number of publications, nationally and internationally, and was summarised in 2008 in the book *Konsten att lära barn estetik* [The art of teaching children aesthetics] (Pramling Samuelsson et al.). An aim of the project was to let the aesthetics become learning objectives, rather than merely being dimensions of the act of learning. One result of this work was an attempt at formulating aesthetic knowledge as an 'informed' way of seeing, or in music, listening (a notion theoretically inspired by, among others, the work of Alexander Luria). This notion of 'informed perception' has become the point of departure for Wallerstedt's continuing research interests. She works at the University of Gothenburg. In Glee club she is Rachel.

Chapter 1
Introduction and Frame of the Book

Niklas Pramling and Ingrid Pramling Samuelsson

Research is always carried out in a specific time and context and is based on certain perspectives. All studies presented here are from a Nordic context (see also Einarsdottir and Wagner 2006), but the theoretical frames will vary. This will be clear in each chapter. However, in this chapter, we will place the book in its historical and cultural context. More specifically we will be focusing on:

- Contemporary Early Childhood Education (ECE).
- What is didactics?
- The distinction between the process and product of learning.
- Profession-related research.
- A brief presentation of the chapters to follow and their theoretical frameworks.

The opening of a debate on educational objectives in the light of educational research.

Contemporary Early Childhood Education

In the Nordic countries most children participate in ECE from early years. A recently published report from UNICEF (2008) shows the standard of Early Childhood Education and Care (ECEC) in 25 OECD countries. The benchmarking system is based on: parental leave, a national plan for disadvantaged children, subsidised and regulated for at least 25% of children under 3, subsidised and accredited ECEC for 80% of 4-year-olds, 80% of the staff trained (50% with a tertiary education with relevant qualification), minimum staff-to-children ratio of 1:15, 1% of GDP spent on ECEC, child poverty rate less than 10%, near-universal outreach of essential child health services. All Nordic countries are top ranked and Sweden is the only country that has achieved the highest score of 10 benchmarks.

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Kristjansson (2006) talks about the Nordic child-centredness, claiming that there has long been a social and political discourse in which the state has introduced numerous reforms to ensure that it shares the responsibility for children with the parents. Corporal punishment was prohibited at an early stage and children have their own ombudsman, a commissioner with statutory rights and duties to promote and protect the rights and interests of children (see further discussions about this in Sommer et al. 2010). When quality is considered in an international comparison, it is the globality of support for children and families that is in focus. However, this says nothing about the quality of everyday experiences of children. Studies have shown that even in a country with an ECE of top rank, evaluation of children's experiences has revealed a wide variation in quality (Sheridan et al. 2009).

Preschool has always had some kind of guidelines, although it had not been regulated by the state. Vallberg-Roth (2006) has analysed documents that have had an impact on ECE and describes a historical sequence of rationales: God (Protestant religious beliefs) up to the end of the nineteenth century, the good home up to the middle of the twentieth century, the welfare state up to the middle of the 1980s, the situated world child to the beginning of the twenty-first century and a now a beginning of 'me-in-the-world'. This means that there have always been texts guiding the professionals in their work, texts that create an image of the child and what is worth developing in children. These curricular texts have mainly been formulated by the professionals themselves, which is no longer the case in countries where the government makes decisions about the national curriculum. The Swedish national curriculum for children aged 1–5 years states that the teachers' commission is to support children's well-being, joy and learning (Skolverket 2006). The curriculum is based on an experience-orientated perspective, where interaction, communication and play are central aspects of the pedagogy. The humanistic child-centred perspective also expresses a participatory democratic view, where values of justice, equality and equity are central. Children's equal rights to be listened to, choose activities and learn in terms of developing skills and making meaning within specific areas are pointed out. These specific areas are: emergent mathematics, literacy, natural sciences and technology and arts. But it is also clear that these specific areas should not be viewed as traditional school subjects, but as dimensions dealt within thematic work with young children.

The intention of the work in preschool is not that children should reach a certain level of achievement in different content areas, but that they should be supported in developing meaning in the direction of the goals to strive for. Although preschool is supposed to work towards developing the child and his or her personality, the contemporary preschool is directed more towards the pedagogical assignment. Teachers therefore attach importance to specific content-related questions and, not least, to how these can be developed in practice. It is here that the research we will present in this book can contribute.

Traditionally, in school the focus is on subjects, syllabus and lessons, while preschool focuses on themes, i.e. on integrating phenomena existing in the children's surrounding world, such as 'the sea', 'the shop', 'the farm', etc. These are themes in which specific aspects of literacy and mathematics will appear in a context that

makes sense to children. Although the organisation of knowledge differs in preschool and primary school, creating knowledge is central in both, but while preschool teachers can be satisfied if children show interest and involvement in something specific, school teachers are held accountable for showing that children have gained specific knowledge by a certain stage. In preschool the learning context as such should be evaluated, while in school it is the children who are being evaluated. This means that children's development in preschool has to be related to the learning context provided for them, while children in school are evaluated no matter what school has provided them with (Sheridan and Pramling Samuelsson 2009).

However, it is not only the content and the evaluations that distinguish the learning contexts of these two forms of institution from one another, but also the perspective of knowledge and how children can be given opportunities to make sense of the world around them. Although the gap between the two institutions has narrowed in recent years, the different traditions are still strong. Play and care are central in preschool, while skills are prioritised in school. Preschool teachers have a broad pedagogical competence and understand children in terms of their development, while school teachers are specialists in different areas and their main goal is to teach their subjects. In preschool the age-groups are mixed, while schoolchildren are in homogeneous age-based classes. Perhaps one can claim that, traditionally, the child is the centre in preschool, while the subject matter dominates school. Today, however, the intentions for both learning contexts have changed.

Nordic countries may be unique in many ways as regards ECE, but at the same time there are universal trends that reflect the influence of the UN Convention on the Right of the Child (1989) and the socio-cultural perspective of Vygotsky (1978, 1987) and others. Internationally there is, for example, a strong trend towards changing ECE in the direction of a new paradigm of children's learning (Pramling Samuelsson and Fleer 2008), seeing the child as a competent being who responds to experiences in many different ways and not necessarily at a predestined stage of development related to age. Children's voices (views, opinions and experience) and rights are brought to the fore and playing and learning are integrated in practice in a new approach to pedagogy (Pramling Samuelsson and Asplund Carlsson 2008; Johansson and Pramling Samuelsson 2007). In trying to outline and develop a pedagogy for early childhood education today, the term 'didactics' keeps reappearing. But what is didactics, or, rather, what may it mean in the context of ECE?

What Is Didactics?

While it is a common term in continental Europe, 'didactics' is a controversial term to use in conceptualising educational matters internationally. The term often meets resistance in the English-speaking world (Hamilton 1999, 2009; Hopmann 2007; Hopmann and Gundem 1998; Kansanen 2009; Nordkvelle 2003). For this reason, in this section we will elaborate somewhat on (a) the history and transformation of the term, (b) why we chose to use this term and (c) what we intend with this term

in this book. The term ‘didactics’ has its etymological roots in ancient Greek. In Hopmann’s (2007, p. 110) clarification, the word ‘Didaktik’ stems from “the group of words connected with ‘didaskein’, i.e. teaching, showing something, playing out a drama”. The suffix ‘-tik’ or ‘-ik’, as in the German (and Swedish) ‘didaktik’, as Nordkvelle (2003, p. 321) clarifies, “is a Latinised ending derived from techne, the Greek term for skill, art, expertise, profession, science, technical knowledge and so forth” . Hence, according to Nordkvelle’s historical explication, “Didactics was a synthesised word from the Greek synonym for ‘demonstrate’ and the Latinised suffix for ‘art’”. Even if the term has a long history, in discussions of educational matters, the term is often referred to the early seventeenth century and the scholar Johan Amos Comenius (1592–1670). Central to this history is Comenius’ *Didactica Magna* [Great Didactic] from 1632. In the English-speaking world, however, ‘didactics’ seems to be understood as “formalist educational practices that combine ‘dogma’ with ‘dullness’”, as Hamilton (1999, p. 135) writes in an article with the title “The Pedagogic Paradox (or Why No Didactics in England?)”. Hence, in English the term ‘didactics’ may have connotations of what is today often seen as a historic relic in the history of education, i.e. a lecturing teacher and listening children, where the latter lack a voice and agency in their own learning. However, this is not at all how the term ‘didactics’ is understood in the continental European perspective from which we have written this book. As Hopmann (2007) clarifies, from the seventeenth century onwards, what accounts of ‘didactics’

> all have in common, in spite of different approaches to […] the psychology of learning, was the basic assumption that Didaktik is about how teaching can instigate learning, but learning as a content-based student activity, not as swallowing a sermon or a monologue or otherwise one-sided knowledge distribution by a teacher. (p. 113)

Another key feature of the European notion of didactics is “the necessarily restrained effort to make certain substantive outcomes possible, while knowing that it can always turn out completely differently from what was intended” (p. 117). Hence, this notion of didactics opens up for the empirical fact that people with different experiences will make different sense of the same situation. This is one reason why, as we will argue in this book (see also Sommer et al. 2010 for a theoretical and practical elaboration) for the importance of paying attention to the child’s as well as to the teacher’s perspective (in a learning practice as well as in conducting research into such a practice).

While didactics is a common term in many European countries, studies in didactics are very infrequently distributed across different knowledge domains. There is a substantial literature of this kind on science education. However, such studies are practically non-existent when it comes to arts subjects (Kansanen 2009). In addition, these kinds of studies are far more common with older children. Didactic studies of early childhood education are a rather novel phenomenon. One reason for this, as suggested by Kansanen, is that while teachers in the later grades are often specialised in a particular domain of knowing (e.g. physics), early years teachers have a more encompassing task of securing the development of the child. Also, in preschool settings, knowledge domains are seldom separated in the way they tend

to be in school. Instead, activities often take the form of working on encompassing themes. This realisation implies the need to pay attention in discussions of didactical issues for ECE of the relationship between particular knowledge and skills and more encompassing development.

Another interesting note is made by Kansanen (2009). He suggests that

> [i]n the English-speaking educational literature it is very difficult to name the research basis of teaching and teacher education in the same way as it is possible to use didaktik in German [and other mainland European countries] teacher education. (p. 30)

Hence, the concept of didactics in a sense is functional in bridging between research and practice. It is important to find such tools of communication between these practices to be able to discuss and collaborate in making sure we provide good educational opportunities for children in early childhood education.

In this international context, we could perhaps have used the term 'pedagogy' instead. However, writing from a Nordic context, the current debate on early childhood education largely revolves around the term 'didactics' (e.g. Broström and Veijleskov 2009). There may also be a point in trying to spread the European use of this term to the English-speaking world, which seems to have a very restricted understanding of the notion. However, in our view, the distinction between 'didactics' and 'pedagogy' is not important to our present purpose of studying and conceptualising the creation of opportunities and support for learning in early childhood education and how children make sense of what they encounter there. Finally, according to Hamilton (1999, p. 148), "recent Anglo-American usage of 'pedagogy' mirrors the mainland European use of 'didactic'". The reader of this book who is still hesitant to use 'didactics' in relation to early childhood education may thus think of the term 'pedagogy' instead. Still, for the reasons we have clarified (the continental European usage and the use of the term in these kinds of discussions in the Nordic countries) we have chosen to retain the term 'didactics'. We do not intend to define what didactics for early childhood education could consist of or be characterised by in any clear-cut manner in this introductory chapter. Rather, at this point the term labels the empirical interests we have outlined. Still, some important features of ECE didactics will be mentioned with reference to some theoretical accounts and previous research. However, in the concluding chapter of this book we intend to outline—on the basis of the empirical studies of this book and the theoretical notions applied in these—features critical to such didactics.

At the very heart of what we will refer to as 'didactics' in this book lies the issue of intersubjectivity, understood not as teacher and child having shared, identical concepts, but as achieved coordination, enabling the interlocutors to 'go on' with their mutual activity (Rommetveit 1974; cf. Bruner 1983, on 'joint attention'; Siraj-Blatchford 2007, on 'sustained shared thinking'; Tomasello 1999, on children's proclivity to share attention with another). That is, neither the teaching done by the teacher nor the discovery made by the child by him- or herself constitutes didactics. Rather, what we refer to as 'didactics' is the interaction and communication between teacher and child; how they achieve (or fail to achieve) intersubjectivity or joint attention. For this reason, joint activities, particularly communication (cf. the

etymological basis of the word ‘make common’, ‘share’ (Barnhart 2000, p. 195)) become the focus of attention. The nature of this relationship between teacher and child will be considered pivotal for didactics as understood in the present book. A key task in establishing such didactics is to consider and coordinate the child’s perspective and the teacher’s perspective (the perspective of the domain of knowing).

While emphasising that communication is a key feature of education, it is important to understand that what we refer to as ‘didactics’ is not any conversation. One distinguishing mark of an educational conversation, i.e. didactics, is that a learner encounters distinctions and relationships useful in grasping or managing a domain of knowing. Hence, while any conversation may be instructive in an informal sense, by didactics we refer to the kind of communicative event where someone (a teacher) introduces a child (a learner) to certain domain-relevant distinctions and/or categories and attempts to help the child appropriate these distinctions and categories (concepts), and, hence, to potentially transform the learner’s understanding (knowing). This is fundamentally what makes it an educational practice or a didactic encounter (an education out of a conversation), as understood in the present book.

Distinction Between the Process and Product of Learning

An important distinction in researching children’s learning is between what can be referred to as ‘process’ and ‘product’ studies. Following from the pioneering insights of Jean Piaget, Lev Vygotsky and Heinz Werner, as well as more recent work by Neil Mercer and Jaan Valsiner, the importance and relative rareness of a process kind of study could be argued. A simple illustration of the difference between a ‘product’ and a ‘process’ study, as we understand it, could be the following from the domain of sport. If we are interested in studying high jumping, more specifically why Blanka Vlasic, at the time of writing, is the world’s preeminent woman high jumper, simply studying how high she jumps at different times in her development as a jumper and in comparison with other high jumpers would tell us that she gets better and that she is better at jumping than her competitors are. Hence, using this study method, we could clarify how a jumper improves in her development as a high jumper and rank the order of jumpers. However, these numbers would be ‘mute’, to use Valsiner’s (2005a, b) metaphor as to their explanation. In order to understand the heights jumped (and the relative placement of jumpers), we would have to scrutinise the process, i.e. in this case the jumps (as ‘unfolding’ or performed) over the course of the jump. Through analysing video recordings of these jumps we could find that, say, Vlasic is able to jump 2.08 m because of a combination (timing and coordination) of the speed of her approach, the radius of the turn and thus the angular momentum achieved, etc. That is, as we try to illustrate by this example, through studying the ‘process’ (running and jumping), we are able to gain a far better understanding of the ‘product’ (the result) than if simply studying and comparing ‘products’ (performances) at various points in time and/or between performances and performers. It should also be pointed out that ‘product’

is an unfortunate metaphor for knowledge, since knowledge is seldom either/or in any clear-cut sense, i.e. something the individual 'has' or 'has not got'. Consider, for example, the issue of being literate. Even if they are able to read texts, people may encounter new texts and writing practices that they do not master. Being skilled at reading texts in one literary genre does not mean that the individual is necessarily able to make sense of and master another genre (e.g. specialised discourse). Hence, appropriating the written language (becoming literate) is in many cases a life-long process where we gradually become more familiar with different textual aspects and practices (Säljö 2005). Thus, whether an individual 'has' a certain knowledge or skill (has acquired the 'product') is rather 'un-productive' as a way of conceptualising learning and knowing. The studies of the present book build upon research interests that are focused on qualitative (process) rather than quantitative (product) issues of learning and development.

In line with our reasoning and writing with the substantial literature on children's drawings in mind, Coates and Coates (2006) point out that this research

> largely fails to explore what would seem to be an essential ingredient in each drawing's production–children's simultaneous utterances which might potentially inform the nature and content of the work and help elucidate their intentions and processes of thinking. (p. 221)

For example, Coates and Coates report data on Sophie, a 4-year-old, who "drew a fine ship but her accompanying narrative told a detailed Pirate story, the content of which was not at all obvious from the drawing alone" (p. 227f.). Importantly, we would add, studying the process of creation or learning gives us important insights into the child's perspective (Sommer et al. 2010), i.e. what the child him- or herself is concerned with and how he or she understands the activity. Hence, in terms of learning, focussing on the processes of teaching and learning in an analytical way does not imply a lack of interest in the outcomes of learning (sense made, understanding reached, results achieved). Instead, it means, paradoxical as it may sound, a heightened interest in the content (the what) of learning. Traditionally, to argue analogically in relation to Valsiner's (2005a, b) claim that the core phenomenon itself, i.e. 'development' is often missing from developmental research (cf. Werner 1937), we could say that research on 'learning' often does not, in fact, study learning empirically. Rather, what is studied is often (differences between) knowledge or information. What a learner is able (knows) differs between two (or more) points in time and as a result, it is inferred that learning has occurred in between these points. Situation 1 ≠ situation 2; hence it is inferred that learning has occurred between these points. But this 'between' has not, in fact, been studied empirically.

An alternative course, focusing on 'process' rather than 'product' may be outlined as follows. What is studied is how individuals and/or collectives (groups, classes) 'go on' in their learning, what challenges they face and how they take on these and what the outcomes of these communicative encounters are, or at the very least, what opportunities for learning the children encounter in this practice within the period studied. This alternative course may sound negative and insufficient, but, unless we are perhaps concerned with simple behaviouristic conditioning, we must realise that we can never cause learning in any simple and direct sense. What we can

do and what institutionalised educational practices need to do, is to provide ample opportunities and scaffolding (Wood et al. 1976/2006) for learning, i.e. to provide sufficient challenges and—as importantly—sufficient support ('scaffolding') for learners to take on these challenges. There is no doubt that we can and should study these matters if we are interested in children's learning and development.

Profession-related Research

Sweden may be special in that about a hundred preschool teachers having completed PhD studies and have worked towards developing an academic ECE field for many years (Klerfelt 2002). This has also generated numerous new doctoral students, including a special group that is partly financed by their employers, the municipality, in which they also work part-time during their studies. This arrangement has enabled us to recruit better educated professionals in the field of ECE who can develop the practice.

Often researchers with a background in ECE ask other research questions and strive to adapt their research so to also generate knowledge that can be of use to the professionals in the field. Research question are often related to generating knowledge about children's learning, being and playing in preschool, as well as about the contribution of the teachers to young children's lives.

A model used in many studies is that the researchers try to orchestrate what they want to study by, for example, getting teachers to work with developing meta-cognitive skills in children (Pramling 1989), to make sense of early mathematical aspects (Doverborg and Pramling 1999), literacy (Gustafsson and Mellgren 2005), aesthetics (Pramling Samuelsson et al. 2008), etc. Some studies pay more attention to the professionals' communicative skills (Pramling 1995) or capacity to integrate play and learning (Johansson and Pramling Samuelsson 2006). The main idea is, however, that the focus is on teachers' and children's interaction and communication. The empirical data on which the research is based are in most cases generated by video-recordings of group activities that can be used later as mutual points of reference for discussions between teachers and researchers and for analysis of the results.

The Studies and Their Theoretical Frameworks

While the empirical studies of this volume all share an interest in analysing didactic issues from the perspective of the children (as well as from the perspective of the teachers), the chapters have evolved within a variety of theoretical frameworks. These perspectives include developmental pedagogy (Pramling Samuelsson and Asplund Carlsson 2007, 2008), phenomenology (Merleau-Ponty 1962), variation theory (Marton and Tsui 2004) and socio-cultural theory (Vygotsky 1978, 1987). Since every chapter will introduce the features of the framework of relevance to its

study, we will only briefly introduce these perspectives. Both developmental pedagogy (as applied by Pramling and Wallerstedt in their study of children engaged in learning and remembering a circle-dance and Doverborg and Pramling Samuelsson in their study of children's mathematics learning) and variation theory (as applied by Wallerstedt in her study of children learning to discern metre in music) are developments of phenomenography (Marton 1981; Marton and Booth 1997). Basic to these traditions is an interest in studying learning from the learner's perspective. Learning is described qualitatively in terms of what features of the object of learning having been discerned by learners. While sharing many features, developmental pedagogy and variation theory differ in their understanding of what variation and discernment entail. In the perspective of developmental pedagogy (as particularly developed to account for young children's learning in preschool), variation among children in a group is used as an asset in making the children aware of a greater number of different ways of understanding something, hence to develop a richer repertoire of ways of perspectivising (perceiving) phenomena. In variation theory, conversely, the variation between one particular object of learning and another is used as a means of helping the learner discern and hence understand, this object in a particular and singular way. Working with a well-delineated learning object may prove helpful in developing children's discernment of different aspects of a learning content. At the same time, there is an obvious risk that this way of working will result in a fragmentarisation of knowledge, which would be quite contrary to the preschool tradition of working with more encompassing themes. Helping children to learn something specific while being able to relate experience and knowing in meaningful activities in itself poses a challenge to early childhood education didactics that needs to be considered.

Johansson's study on children's moral learning builds upon the theory of phenomenology, particularly the work of Maurice Merleau-Ponty. Central to Merleau-Ponty's account of phenomenology is the body. From this perspective (Merleau-Ponty 1962), studying, in this case, children's ways of being and learning morals/ethics means to attend to children as embodied subjects rather than abstract intellects. Moreover, this perspective nurtures an interest in the 'life-world' of children, i.e. the intersubjectively shared world into which the child is born and lives. We are human beings through being in relationships with others. Hence, it is of pivotal interest to study how children (and people generally) interact. In fact, it is out of the nature of relationships to others that children develop morality, according to this perspective. This perspective on morality is rather different from a traditional one where morality is seen in terms of rationality and logic (Johansson 2001). This phenomenological perspective on development allows even very young children's morality to come to the fore (see further Chap. 7).

Socio-cultural theory (Säljö 2000, 2005, or cultural-historical theory as it is sometimes referred to, e.g. Fleer 2010), stems from the pioneering work by Russian psychologist Lev Vygotsky. This framework is used in this book by Bendroth Karlsson in her study of visual-art-making practices in preschool and Pramling and Ødegaard in their study of children's appropriation of the cultural tool of narrative. Some distinctive features of socio-cultural theory are the concepts of 'appropriation', 'cultural tools' and 'mediation' (Kozulin 1998; Leadbetter et al. 2005; Säljö

2005; Vygotsky 1978, 1987; Wertsch 2007). Arguing that human learning cannot be understood in separation from the cultural tools (material as well as discursive, e.g. speech), how learners are introduced to and supported in appropriating such tools will be decisive for the skills they develop. Appropriation means to take over and be able to use cultural tools in a relevant manner in various practices. Hence, learning is seen as inherently social and cultural in nature. The notion of cultural tools also means that our relationship to the world and its phenomena comes about in a mediated or 'roundabout way' (Vygotsky 1971), i.e. with the appropriation of tools we learn to see and understand phenomena in terms of the categories and distinctions of our (linguistic) tools. The same tools are used in communicating with others (e.g. in a classroom) and with oneself (i.e. thinking from a socio-cultural point of view).

Educational Research and Educational Objectives

In this book we present a number of empirical research studies in Early Childhood Education. It is important that claims concerning children's learning are based on such work in naturalistic settings in order to be ecologically valid in accounting for learning as it takes place in everyday encounters between preschool teachers and children. While it is important in our view to conduct this kind of research, it is also important to remember that education is always a normative activity. In his thoughtful account on the distinctiveness of educational research, Jerome Bruner (2006) argues that:

> Perhaps the most important is that its objectives—the cultivation of mind, the betterment of life, or whatever else—are in principle culturally contestable issues that inevitably become ideological or political issues not readily resolved by scientific research alone. There is always disagreement about what "being educated" entails—what skills and sensibilities, what stock of knowledge and beliefs, what values constitute the educated person. (p. 206; cf. Bruner 1996)

As Bruner argues, what should be learned in preschool and school and more specifically within various domains of knowing (music, mathematics, visual art, etc.) is not necessarily self-evident. Neither is the related issue concerning what it means to be knowledgeable within a domain of knowing obvious. What are taken as indicators of having developed, for example, mathematical skills or language skills? What are seen as relevant abilities and knowledge in these and other domains? These are no neutral matters. They are inherently dependent upon perspectives. For example, what is skilled language development? Knowing what something is called or being able to use one's speech in novel situations to communicate in a manner comprehensible to others about novel phenomena and experiences? The latter is one small indicator of an important and much debated issue in education, between what Bruner (1996) refers to as schooling as 'cultural reproduction' and 'human development' respectively. As Bruner (2006) continues,

> education research should never have been conceived as principally dedicated to evaluating the efficacy or impact of 'present practices.' [–] Rather, the master question from which the mission of education research is derived is: What should be taught to whom, and with what pedagogical objectives in mind? (p. 212, italics omitted)

These are the classical questions of didactics. It is important that educational research is not only 'backwards directed', in evaluating outcomes, but also 'forwards directed' in pointing out what could be important to help children learn and what tasks teachers may need help in managing. Hence, with this book we also aim to open a debate on such normative issues as what should early childhood education help children develop in various domains. What should be the sense of language development, for example, or democracy learning, in institutionalised practices with children up to 8–10 years (i.e. ECE)? In our view, it is important that scholars engage in this kind of debate and do not leave it to other stakeholders, such as politicians, to set the agenda for these kinds of issues in Early Childhood Education.

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Chapter 2
Learning to Narrate: Appropriating a Cultural Mould for Sense-Making and Communication

Niklas Pramling and Elin Eriksen Ødegaard

Introduction

In the field of educational psychology, two foundational modes of sense-making, in various guises, have frequently been recognised. They are referred to as 'spontaneous concepts' and 'scientific concepts', respectively, in Vygotsky (1978, 1987) and as 'narrative' and 'paradigmatic' modes of discourse or reasoning in Bruner (1986, 1990, 2002, 2006). The spontaneous concepts or narrative modes of discourse are perceived as more characteristic of an everyday way of speaking and reasoning, while scientific concepts or paradigmatic modes of discourse are usually seen as typical of institutionalised discourse as appropriated in formalised schooling. The following excerpt from Luria's (1976) classic study of, among other things, the way people's reasoning changes when attending formalised schooling and learning to read and write will serve to illustrate the difference between the two concepts or modes. Simplifying his complex and rich study for the present purposes, we can briefly consider the difference in how participants in his study who had received some schooling (and were literate) differed from unschooled (and illiterate) participants in, what for the experimenter was, a categorisation task. The following is one empirical example from the reasoning of an unschooled participant. In the excerpt, which follows the original text, text in quotes is the subject's words, text in bold is the interviewer's words and plain text is Luria's own description:

> Subject is then shown drawings of: *bird-rifle-dagger-bullet*.
> "The swallow doesn't fit here…No…this is a rifle. It's loaded with a bullet and kills the swallow. Then you have to cut the bird up with the dagger, since there is no other way to do it." [—] **But these are weapons. What about the swallow?** "No, it's not a weapon." **So that means these three go together and the swallow doesn't?** "No, the bird has to be there too, otherwise, there'll be nothing to shoot." (Luria 1976, pp. 56–57; italics and bold in original)

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There are many things that could be said about this excerpt and Luria's study as a whole. However, for the present purposes the following has to suffice: Rather than categorising the objects according to the abstracted principle of, in this case, 'weapons', as the schooled subjects did, the unschooled subjects made sense here by constructing a small narrative, binding or weaving together the objects as events. Participants who had not been allowed to attend school did not see and could not be convinced of the point in sorting objects according to some overarching category or classificatory system, since this had no part in their everyday lives. At a general level, these findings illustrate the difference in modes of reasoning between what Bruner (2006) has referred to as a 'paradigmatic' and a 'narrative' construal. While the latter is a common way of making sense in a great variety of practices, the former is a communicative form closely related to institutionalised practices such as schooling.

The developmental importance of appropriating a paradigmatic mode of reasoning is already recognised in some preschool activities, such as different categorisation games and in informational, expository texts such as picture books about natural and life science (Mantzicopoulos and Patrick 2010). However, recognising the widespread importance of narrative as a sense-making form of practice (genre) (cf. Bamberg 1987, 2007; Bruner 1990, 2002; Gärdenfors 2006; Kamberelis 1999; McCabe and Peterson 1991; Ochs and Capps 1996, 2001; Tomasello 1999; van Oers 2003), which all cultures seem to do (cf. Rogoff 2003; Schick and Melzi 2010; Tomasello 1999), preschool teachers also work with developing children's narrative skills, i.e. scaffolding them to tell a story in a culturally interesting and intelligible way (for a recent example, see Ødegaard 2007a; for an early example, see Chukovsky 1925/1974). In more general terms, learning to narrate may also be seen as an example of what Kozulin (1998, p. 109) has argued to be "the major focus of modern education, i.e. the development in the student [or child] of an ability to become a true 'agency', i.e. an active source of his or her own learning activity". This kind of learning practice, i.e. children's appropriation of narrative skills is the focus of the present chapter. That is, we will analyse in detail children's appropriation of narrative skills.

We shall carry out a detailed analysis of two different kinds of narrative practice, both from Nordic preschools. In the first, taken from a Swedish preschool, teachers have planned to help children start appropriating this communicative form in a collaborative, group activity. In the second practice to be analysed, taken from a Norwegian preschool, we look at a child-initiated narrative and how a teacher supports the child in developing the story to become intelligible to others who were not present at the event referred to by the child. The findings from these analyses will be discussed in terms of didactics and children's narrative learning.

Research on Children and Narrative Discourse

There exist several different (but partly overlapping) research traditions on children and narrative discourse. In this section we will review some of these that have bearing on didactics and children's narrative learning. One of these traditions takes

an ethnographic approach and gives rich descriptions of teacher practices and children's experiences. One example is Paley's (1997) work with a story table, in which children's narratives are written down, giving the children opportunities for playing them out in structured drama activities as well as in activities organised by themselves. Paley's descriptions of and reflections on teachers' approaches to children's stories are widespread in many Euro-American teacher communities and have inspired researchers to investigate children's social and textual lives in classrooms (cf. Dyson 1997; Ødegaard 2007a; Sawyer 1997).

Another research tradition (cognitive psychology), building upon Propp's (1968) study of Russian folktales, focuses on identifying the basic structural elements used by children in narration. Attempts are made to link children's narrative abilities to cognitive skills. This research has shown how children's narratives become 'more complete' as they get older. Characteristic of this development of narrative skills is the movement from brief, non-causally linked descriptions to more sophisticated, causally-linked stories. According to studies in this tradition, where age has been considered important, young children will most frequently tell personal stories, while older children will add fantasy stories to their evolving narrative repertoire (Glenn-Applegate et al. 2010). Another example of studies in this research tradition is McCabe and Peterson's (1991) study, based on Labov and Waletzky's (1967) structural analysis, with the main interest in mapping the function of clauses and how children link together a series of clauses that build up to a high point. This work also includes the aim of developing methods for eliciting children's stories in teacher-led activities and discussions, making suggestions for how to organise rich language, narrative and literacy classrooms. They also suggest that teachers should be close to children for an extended period of time as in a language activity or during a mealtime (McCabe and Peterson 1991).

A third research tradition has been concerned with narrative development in mother–child dyads at home (Blum-Kulka 1994; Nelson 1989). These studies have shown how maternal conversational discourse shapes children's use of genres and that highly elaborate mothers that engage their children in lengthy (narrative) conversations, where they ask open-ended questions, provide narrative structure and supply rich information, guiding their children to develop decontextualised language, a skill necessary for successful learning at school (Aukrust 2005; Boyce et al. 2010; Reese et al. 2010; Schick and Melzi 2010; Snow et al. 1998).

Some research on children and narrative discourse has thrown light on cultural variation. It has been suggested that Euro-American as well as Latino parents and teachers tend to engage in talk about the self, elaborate stories about personal experiences, while, for example Maori discourse tends to rely on traditional cultural stories rather than personal narrative (Rogoff 2003; Schick and Melzi 2010). Lai et al. (2010) studied how age and culture affected the production of personal stories and compared narrative practices in two Asian children's groups. They found that Korean children were less likely than American and Taiwanese children to share narratives about emotions. This is in sharp contrast to the practice in Norway described in a recent study (Ødegaard 2006), where Norwegian 2-year-olds took the initiative

to tell about strong emotional states associated with personal experiences that made them frightened, angry, miss someone or desire something. This highlights one of the challenges teachers face when intending to develop narrative skills in children in multicultural environments.

In an institutional educational setting, such as preschool, narrative conversations are likely to differ to some extent from stories told at home. Narratives told in families will generally be less structured and fewer children will usually be involved at the same time. For example Dickinson (1991) found that narratives in school were more scripted and shorter in length than the ones at home. There are also certain places and times (activities) during a preschool day where narrative activities are more likely to occur. These include circle time, book reading, mealtimes and other teacher-led activities with smaller groups of children, or speaking with the child's parents coming to leave or pick up the child from preschool (Boyce et al. 2010; Cote 2001; Higham et al. 2010; Michaels 1991; Ødegaard 1998).

Another activity that could trigger narratives is the excursion. In a study in a Norwegian preschool, Ødegaard (2007a) found that the number of narratives increased during mealtimes after excursions. This finding suggests that new experiences give something new to talk about and that common experiences will make it easier to connect to children's initiatives to tell and to share experiences standing out from the ordinary preschool life. In a related study of teachers' strategies in co-narrating practice during 15 mealtime observations, eight varieties were found. However, a strategy related to what we in this chapter refer to as 'learning to narrate', where genre skills would be required, was not found in the Norwegian preschool studied. Rather, the dominant strategy was to listen to children's telling and follow up their thematic threads (Ødegaard 2007b).

Even if, as suggested by this literature review, *what* is narrated and valued or not valued differs from one culture to another, the skill of narrating is a central one in all cultures. It is with this narrative skill that we are concerned in the present study. That is, we wish to find out how teachers go about supporting the appropriation of this fundamental sense-making and communicative format in preschool in two different settings of the kind suggested by the reviewed research to be potentially good opportunities for this activity to take place.

Socio-Cultural Theory and Narrative Genre

From a socio-cultural perspective (Daniels et al. 2007; Nelson 1996; Säljö 2005; Tomasello 1999; Vygotsky 1978, 1987; Wells 1999), learning is conceptualised in terms of appropriation (e.g. Kozulin 1998) of cultural tools and practices. 'Appropriation' as a metaphor for learning is a theoretical attempt to indicate the active and dynamic nature of learning. Appropriating a cultural tool requires some effort on the part of the learner; he or she cannot simply 'take in' knowledge as something ready-made and transmitted from, for example a teacher. Furthermore, appropriat-

ing tools does not simply mean that the learner 'has', as distinct from 'has not', this particular knowledge in a clear-cut and general sense. Rather, appropriation means to be able to use tools in more or less relevant ways in various practices. It is in using cultural tools that the learner shows his or her knowing. The concept of appropriation is also an attempt to capture the fact that cultural tools often 'offer resistance'. Appropriating a tool may often involve a long familiarisation process (Säljö 2005). An illustration of this claim may be the cultural tool of writing (or speech, for that matter). Even if we are able to write or speak competently in many situations, when facing novel communicative demands we may again struggle with how to write, read or speak (Säljö 2005). We never fully master a cultural tool such as speech or writing. For this reason, it may be misleading to make claims about what learners 'have' or 'have not' in terms of knowledge. Instead, we shall make an empirical study of how learners appropriate and use tools more or less competently for different purposes in various practices. According to Vygotsky (1978), all 'higher mental functions' such as reasoning, categorising and voluntary remembering first occur in communication with others (on the social plane) and subsequently in communication with oneself (on the individual plane) (cf. Mead 1934/1967). What communicative practices learners gain access to and are invited to take part in will thus be pivotal for the competences they develop. The present chapter will be concerned with children's appropriation of a prevalent and powerful cultural tool, the narrative genre and its constituent parts. As already mentioned, narrative is an important form for sense-making, including, as developmental psychologist Nelson (1996) has argued, for remembering (cf. Säljö 2005; Wertsch 2002) as well as for the development of self-identity (Ochs and Capps 1996, 2001). These are some examples of inter- and intramental functioning (Vygotsky 1978) well-served by narrative skills. In Wells' (1999, p. 238) words, narrative genre is a pivotal tool "in the semiotic tool-kit of language". While the genre of 'narrative' may be defined in various and increasingly detailed ways (see e.g. Bruner 2002; van Oers 2003), the basic constituents of this communicative genre, as the term is used in this text, is that it is an account of events related by time and human (or human-like) actions. This means that a narrative as a minimum requires (1) one (often several) actor(s), (2) actions (events), which as such (3) take time (are organised temporally). The last point emphasises how a story depends on how the events are woven together (related). A simple way of doing this is to say '…and then…', which can be repeated throughout the story. More developed ways of weaving the events into a story may be to say '…because…', '…which lead to…', '…caused…' etc. In order to make the story coherent, it is also common to refer back to previous events. Weaving together utterances (the events of the story) is a form of contextualisation (van Oers 1998) or intertextualisation (Torr 2007). The word 'context' stems from the Latin *con* meaning 'together' and *texere* meaning 'text' and 'weave'. *Inter* means 'between', 'together' (Barnhart 2000, pp. 213, 535). Hence, to contextualise means to weave things together, for example events in a narrative sequence. How this 'weaving work' is done is therefore an important feature to observe when studying the appropriation of narrative skills.

Empirical Study

In this section, we will analyse two different narrative practices taking place in preschools. In the first example, teachers and children work on constructing a collaborative story using cards depicting objects, animals or people. In the second example, a co-narrative initiated by a young child and developed in conversation with his teachers (and another child) during mealtime is followed.

Collaborative Story-Making with Cards

The setting is the following. Six children (1–4 years old) and two teachers sit in a circle on the floor. The light is switched off. A candlestick is placed in the middle of the circle. The activity commences with the children trying to remember the magical formula that needs to be uttered to get the lid of the box to open. Through this 'ritual', a communicative 'room' is established into which the children and teachers can enter. After a few unsuccessful attempts, they manage to get it right and the box is opened. The box is filled with cards, each one depicting an object, a person or an animal. The box is passed around the circle and every child and teacher takes a card. The cards picked this time show: a cinnamon bun, a cat, a chimney-sweeper, strawberries, a baker, an umbrella and a squirrel. The narration begins:

Excerpt 1a

```
1 Teacher 1:  How do stories usually begin?
2 Evelina:    Once.
3 Teacher 1:  Do you want to start?
4 Evelina:    Yes. Once there was a bun and then, then, then
              did, then baked buns, the chimney-sweeper baked
              buns. And then he invites all his friends. And
              then they ate.
```

In turn 1, the teacher asks the children how stories usually begin. As Evelina's suggestion in turn 2 indicates that she knows, there are conventions in genres, or, rather, it is these conventions (expectations) that constitute the genre as such. These expectations can be used or played with by not fulfilling them. Evelina is given the 'communicative floor' (Goffman 1981) by the teacher and begins to tell the story. Evelina's utterance in turn 4 is particularly interesting, for several reasons. She begins by saying that `Once there was a bun and then, then, then did, then baked buns, the chimney-sweeper baked buns`. She suggests a temporal aspect, as necessary in creating a story, through repeating that `Once there was` and she starts the story from her card, which depicts a bun. The problem she now faces in starting with this bun, as made evident in her getting temporarily stuck (`then, then, then`), is that in order for a story to develop someone has to do something. Evelina thus introduces, `did, then baked buns`. In this way, an activity is introduced in order to set off the narrative event. In her continuation, Evelina also introduces the last necessary aspect, `the`

chimney-sweeper baked buns. Through introducing the chimney-sweeper (who is also depicted on one of the cards picked by the children), an agent or actor (i.e. someone who does something) takes the stage and sets the narrative in motion. Hence, in this short utterance, Evelina introduces an object, an act (event) and an actor (agent). In this utterance we can see some of the fundamental building blocks or constituents of what makes a story a story. The way Evelina tells and solves the problems she faces when starting the story in an object (the bun) tells us something about her knowledge of this cultural genre (a narrative), that it requires an event and an agent. Continuing the same utterance (turn 4), Evelina then introduces additional events into the story, And then he invites all his friends. And then they ate. In addition to the first agent, the story has now been expanded with his friends and two new events, an invitation and a meal. These events are woven together with the previous event through a temporal marker (then) and that it was the agent's friends (i.e. related to him) and the act of eating (the buns, as already introduced).

The narration continues:

Excerpt 1b

5 Teacher 1:	And you know what. In the middle of the bun party, a cat turned up. And it crept up onto the table and sniffed mmmm. And when no one was looking, when everyone was looking away, the cat tasted a bun. What happened then, Alexandra?
6 Alexandra:	When they turned round.
7 Teacher 2:	Did he turn round? Did he see when the cat ate up the buns?
8 Alexandra:	[nods.]
9 Teacher 2:	What did he say then?
10 Teacher 1:	Did he say anything to the cat then? No, nothing. Did he do anything else?
11 Alexandra:	Crept home again.
12 Teacher 1:	Yes.

Now it's the turn of one the teachers to continue the story. Her initial, And you know what (turn 5), signals that the listeners should pay attention, since something unexpected is about to happen. She introduces a new agent, a cat. Suspense being pivotal to a story, it is suggested that the cat crept up and took the chance to taste a bun when no one was looking, when everyone was looking away. The event and when and where it took place all appear in the teacher's contribution (turn 5). What happened then, Alexandra, the teacher asks in a way of handing over the communicative floor to the next speaker. Alexandra's response (turn 6) that when they turned round continues to weave the story, building up the suspense between the agents of the story (the chimney-sweeper and his friends, on the one hand and the cat, on the other) introduced by the teacher. The teacher scaffolds (Wood et al. 1976/2006) the child's contribution by reformulating it and then asking a question suggesting a possible development of the event, or, rather, what needs to be made explicit in order to become intelligible to a listener, Did he see when the cat ate up the buns? Alexandra confirms this to be the case. The teacher asks another question that points out a possibility of

developing the story further, What did he say then? (turn 9) and the other teacher follows up with, Did he say anything to the cat then? (turn 10). Alexandra does not reply to this question. The teacher then asks a different question, Did he do anything else? With this opening, when she no longer needs to find out something that the chimney-sweeper could have said, Alexandra replies that the cat crept home again (turn 11).

Excerpt 1c

13	Teacher 2:	Ida, are you going to show your card then? Ida, are you going to show your card?
14	Teacher 1:	What picture have you got?
15	Teacher 2:	And Maria can show one.
16	Ida:	[Holds up a card] Look.
17	Teacher 2:	Yes, You have strawberries on your cards, both of you, Perhaps the chimney-sweeper went and fetched strawberries? Yes, strawberries. Do you know who he went to to fetch strawberries?
18	Children:	No.
19	Teacher 2:	He went to the baker [holding up her card showing the baker]. Because the baker had lots and lots of strawberries. And the baker thought, then the cat can have strawberries instead. Because that cat, he liked strawberries very much. So he went back and asked, May I have a few strawberries? Ye-es, said the baker. And what happened then Anna? Show your friends the picture.
20	[Anna holds	up her picture.]
21	Teacher 2:	What's that?
22	Anna:	Umbrella.
23	Teacher 2:	Yes. What did he do with it then?
24	Anna:	When it rains then have.
25	Teacher 2:	Did it start to rain on him and all the strawberries? What luck that he had an umbrella with him.
26	Anna:	Mm.
27	Teacher 2:	Mm. And then what, Peter? Come, did he meet a squirrel?
28	Peter:	[nods.]
29	Teacher 2:	What did the squirrel say then? Did the squirrel say anything to the chimney-sweeper? What did he say? Can you think of anything? Shall we let Evelina continue, Peter?
30	Peter:	[nods.]
31	Teacher 2:	Yes.

The turn in the circle has now come to two of the youngest children, Ida and Maria. They show their cards (both depict strawberries) and Ida says look while she holds up her card (turn 16). One of the teachers responds by naming what the children have on their cards: Yes, you have strawberries on your cards, both of you. The teacher then helps the children to continue the story by making a suggestion, perhaps…and asks Do you know who he went to to

fetch strawberries? The teacher weaves her card (the baker) into the story and reconnects not only to the chimney-sweeper but also to the cat that have previously been introduced into the story. Stories are often held together by the same actor or actors taking part in a series of events (Tomasello 1999). As earlier, the teacher hands over the communicative floor by asking What happened then? She also encourages Anna to show her card to her friends. Anna shows the children her card but does not say anything at first. In response to the teacher's question about what was on the card, Anna says umbrella. The teacher confirms and asks What did he do with it then? This developing question departs from the object on the card but opens up for an event (what the actor did with the object), i.e. what happened then? Anna's response (in turn 24), when it rains then have is ambiguous. Is this a generic claim, that she knows that when it rains, umbrellas are used, or does she mean that this happens in the story? The teacher follows up by slightly reformulating Anna's utterance in narrative terms when she asks, Did it start to rain on him and all the strawberries? (turn 25). The next child in the circle, Peter, is also very young. The teacher helps him by suggesting if Did he meet a squirrel? Peter nods in confirmation. The teacher then suggests that the squirrel says (acts in speech) something to the chimney-sweeper, which is fully reasonable within the frame of the story. Peter is interested but does not make any verbal contribution at this point but nods instead.

Excerpt 1d

32 Teacher 2: Do you want to finish what happened when he met the squirrel?
33 Evelina: Yes, I want to.
34 Teacher 2: Yes. Can you go on with the story?
35 Evelina: Yes.
36 Teacher 2: What happened when the chimney-sweeper met the squirrel?
37 Evelina: Er, then the squirrel ate up the chimney-sweeper.
38 Teacher 2: Er, did he? What do you say when it's the end of story then?
39 Evelina: Snipp snapp snut, nu är sagan slut [A little rhyme to mark the end of the story].
40 Teacher 2: Yes, snipp snapp snut, så var sagan slut. How clever you are at telling stories.
41 Teacher 1: So we've done another one.
42 Teacher 2: Think how many different stories can come out of these cards.
43 [Evelina goes round with the box and collects the cards.]

The narrative has now come full circle in that every child and both teachers have contributed to the story. Hence, the girl who began the story, Evelina, gets the question from one of the teachers whether she would like to end the story. She wants to and so the teacher asks, What happened when the chimney-sweeper met the squirrel? Evelina suggests, Then the squirrel ate up the chimney-sweeper. This, somewhat unexpected, turn of events, gives the story an important twist. The teacher's Er, did he? implies that this event was surprising. Finally, the teacher asks the children what you say when the story is over

(turn 38), i.e. she suggests that there is a conventional way of saying this. Evelina is apparently familiar with this genre convention, as seen from her concluding rhyme, `snipp snapp snut, nu är sagan slut.`

The genre for communication and sense-making referred to as a 'story' or a 'narrative' (Kamberelis 1999; van Oers 2003) in its constituent parts consists of a series of events through which agents do something (cf. Wells 1999). How these events are related is decisive for the development of speech into a narrative, as we have already discussed. As seen in the analysis above, agents (the cat, the chimney-sweeper) and objects (strawberries) previously introduced returned and were related in the story. It is also possible to perceive the teachers' questions about what happened then and so on as a kind of forward-oriented intertextual scaffolding, helping the children to weave together what is happening with what has happened. These contextual ties are critical in achieving a coherent, intelligible, story, rather than a simple addition or list of happenings and objects.

Supporting Children's Initiatives to Narrate During Mealtimes

The second example of narrative practice takes place during a mealtime situation, more specifically at the beginning of a routine breakfast on a Monday morning. Two girls and seven boys, 1–3-years old and three teachers (one teacher and two teacher assistants) are sitting around a table. Conversations during mealtimes are important arenas for language socialisation and learning (Blum-Kulka 1994; Cote 2002; Tulviste 2000). We will look at a narrative that evolved between teachers and toddlers in preschool. In this particular preschool, mealtimes seem to be an ideal place and time for children to participate in narrative conversations (Ødegaard 2007a). The staff are sitting down with the children at the table, which is decorated with flowers. The teachers sometimes take the initiative to narrate by inviting children to tell about an event or by telling a story from their own experiences, adjusted to the child audience. Occasionally they pick up an utterance or a gesture from a child as an invitation to communicate and narrate. The following is one example:

Excerpt 2a

```
1 Sander (2.10):          Me been party.
2 Teacher Assistant 1:    O, party?
[pause]
3 Teacher Assistant 2
[addresses Sander]:       Did you have guests?
4 Sander:                 Yes, guests.
5 Teacher Assistant 2:    Why did you have guests then?
6 Sander:                 The bell rang.
7 Teacher Assistant 2:    Did the bell ring in the church?
8 Sander:                 Yes, Grandma and Granddad was there,
                          Great Grandma also came.
9 Teacher Assistant 1:    Were there so many people there?
10 Sander:                Yes.
```

In his first utterance, Sander (in turn 1) initiates a narrative. Through saying `Me been party`, he introduces an actor (himself) and an event (a party). In addition, he sets himself and the event in the past tense (`been`). The teacher's response (in turn 2), `O, party?`, at the same time confirms that she has paid attention to what the child has said and encourages him to say more, to develop his recounting of this experience. Teachers could support children when spontaneous utterances like these occur so as to encourage narratives in everyday conversations. However, such mundane speech events are fragile. As seen in this brief excerpt, Sander takes the initiative to tell and gets a response from one of the teachers. The response given does not seem sufficient to get Sander to tell about this event. It results in a pause, which could have put a stop to the narrative process. However, to get Sander going with his story-telling, one of the teacher assistants adds a question about `guests` (turn 3). This question suggests a way of developing his account of the event, by introducing new actors and roles. Sander confirms that there were guests but does not, at this point, develop this strand of the story. His answer, `Yes guests`, could put a stop to a narrative process. Instead, Sander suggests, `The bell rang`. Here, once again, Sander uses the past tense and with this answer he extends the narrative and indicates to the teacher assistant what kind of event the guests came for. In her follow up (turn 7), the teacher assistant introduces `the church` as the scene for the event Sander is referring to. In this way, she confirms his utterance and at the same time extends it. She makes explicit the scene of the event (the church). In this way, she establishes and clarifies where the event took place. Sander continues to bring new elements into the story. In turn 8, he lets his listeners know that his grandparents and his great grandmother were there. The teacher confirms Sander's contribution of bringing in actors by answering, `were there so many people there?` This question also serves as a brief summary of what Sander said. At this point of their talk, Sander and the teachers have brought in several elements necessary for making a narrative. Sander has been cast as the protagonist of the narrative. Sander has been referring to this event in the past tense, implicitly set the scene (the church, through the bell) and introduced co-actors (the grandparents). These elements are Sander's own contributions to the emerging story. Rephrasing Sander's `bell` in terms of the `bell […] in the church` (turn 7), suggests that the teachers already knew about the event, that Sander's little sister had been baptised. Through this knowledge, the teachers can ask informed questions that help the child develop his story of the event. According to Bakhtin (1986), speech and utterances are inherently responsive; the listener in a sense becomes the speaker. When the teachers take the initiative to reconstruct an event, they might try to act in accordance with the response they anticipate. Hence, such contributions are examples of contextualising 'backwards' (against a known event) and 'forward' (paving the way for what 'is coming') in developing the story. In these ways, the teachers' knowledge of the children's experiences will be crucial for encouraging children to tell about life experiences and use the narrative format.

The narrative activity continues:

Excerpt 2b

```
11 Teacher Assistant 1:  And your uncle Sverre?
12 Ane:                  Grandma, granddad, mama, papa, Ane.
13 Teacher Assistant 2:  Did your Uncle Roger come?
14 Sander:               Aunt Bitte.
15 Teacher Assistant 2:  Aunt Birgitte?
16 Sander:               Yes.
17 Teacher:              Yes, Ane also once was in the church,
                         I know.
18 Sander:               Uncle Finn and Aunt Mina
19 Teacher Assistant 1:  Uncle Finn and Aunt Mina
20 Sander:               Yes.
```

In turn 11, one of the teacher assistants continues to suggest more co-actors to the story, `and your uncle Sverre?` At this point Ane, one of the other 2-year-olds, joins in the co-narration by saying: `Grandma, granddad, mama, papa, Ane` (turn 12). Sitting at the table, Ane has been listening to the conversation and the naming of the co-actors, family members that she might recognise and be familiar with, as suggested by her utterance. One of the teacher assistants does not follow up on Ane's contribution. Instead, she addresses Sander with a direct question, `Did your Uncle Roger come?` Sander tells that `Aunt Bitte` was there, whereas the teacher assistant says, `Aunt Birgitte`. Clearly, she knows the family to some extent, being able to name Sander's family members. At this point (in turn 17), the other teacher assistant picks up on and answers Ane's utterance. She acknowledges Ane by telling her that she knows that Ane has also been to the church. Ane's contribution could be seen as an example of children learning by actively observing and 'listening-in' in everyday practice (Rogoff et al. 2003). Sander continues to bring more co-actors into the narrative and the teacher continues to confirm his contributions.

The narrative is developed further:

Excerpt 2c

```
21 Teacher assistant 2:  What is uncle Sverre good at?
22 Sander:               He is good at playing the piano.
23 [The teachers laugh.]
24 Teacher Assistant 2:  And inside the church, did he play
                         a little honkey tonkey?
25 [Sander gives her a look (serious and closed face expression).]
26 Teacher Assistant 2:  Did your little sister Camilla get
                         water on her head?
27 [Sander still gives her a look.]
28 Teacher Assistant 2:  Did you get water on your head?
29 Sander:               No
30 Teacher:              Did Camilla cry then?
31 Sander:               No.
32 Teacher:              Oh no, she didn't cry.
33 Sander:               No.
```

In turn 21, one of the teacher assistants introduces a possible act (a way of developing the story) when she asks, `What is Uncle Sverre good at?` Sander an-

swers that he is good at playing the piano. The teachers' laughter indicates that they know this and Sander's answer is what they expected. The teachers seem to amuse themselves with this event from the church, `and inside the church, did he play a little honkey tonkey?` Asking what one of the actors of the story (`Uncle Sverre`) is good at (turn 21 and its follow up in turn 24) paves the way for the development of character in the story ('fleshing out' characters' traits). Sander does not answer this question verbally; he looks at the teacher assistant with a serious and closed expression on his face. There seems to be a shift in engagement in this part of the conversation. While Sander had brought in new elements to the narrative (in excerpt 2a and 2b), now his contributions (in this excerpt, 2c, excerpt initially in turn 22) are reduced to answering `no` or not answering at all. The teacher assistant's humorous tone and questions indicate a shift in the 'authoring' of the story. The teachers expand by introducing more actions to the story. They use their cultural knowledge of what is happening during a baptismal ceremony and use their previous knowledge of Sander's family. In asking about his `little sister Camilla` (turn 26), relationships and identities (name, sibling) between the participants of the event and hence actors and roles in the story are thematised by the teacher assistant. In addition to asking whether the little sister cried when getting water on her head, what happened and who the actors were and how they responded to the event are developed. The teachers are scaffolding (Wood et al. 1976/2006) a narrative, but one might also question if they scaffold Sander's story at this point. Perhaps it is the teachers' rather than the child's version of the event that is now being told. The teachers' questions in a sense close Sander's own narrative thread, Sander's 'authoring' of the story. The teachers might not recognise the ongoing co-narrative as a situation for learning. They might be curious to know more about Sander's home life and consider the conversation as a mundane chat. They might not consider the young child as a co-teller (as an 'authoring voice') in his own right. We will elaborate on these issues in the discussion (below).

As the conversation proceeds, the teacher once again comes in:

Excerpt 2d

34 Teacher:	Were there many people in the church then?
35 Sander:	Yes, Granddad and Great Grandma, they came.
36 Teacher:	Oh yes, Great Grandma, did come.
37 Teacher Assistant 1:	Great grandma, that's very good that she could come.
38 Teacher:	And then afterwards, did you have a gathering then?
39 Sander:	Yes.
40 Teacher:	Did you have lots of good food to eat then?
41 Sander:	Yes and Aunt Louise came.
42 Teacher Assistant 2 and Teacher simultaneously:	Aunt Louise!
43 Teacher:	That's amazing, so many names, Aunt Louise, think of that, she was there!

The teacher asks, were there many people in the church then, which is a 'closed' question with only two clear options: 'yes' or 'no'. Nevertheless, Sander seems to be back on his track. He repeats that Granddad and Great Grandma, they came. The teacher seems to be sensitive to Sander's story agenda and gives him the opportunity to continue with telling who the visitors were. When she asks (in turn 38), and then afterwards, did you have a gathering then?, she helps Sander move the story forward, by pointing to the next event, according to her cultural knowledge of baptisms (cf. turn 40). A meal is central to the idea of a celebration according to cultural knowledge about such an event. The teacher's question (in turn 38) about then afterwards, is important in establishing a narrative sequence, linking events within the larger event (baptism) in time and action. By asking whether they had lots of good food to eat then (turn 40), the theme is also developed 'in content'. Sander answers yes to those two questions and introduces yet another actor onto the celebration scene, Aunt Louise. In turns 42 and 43, the teacher assistants confirm his contributions. It seems that they are amazed by his ability to remember all the names of the participants. Their way of answering with emotional support might encourage Sander to go on developing his story through bringing still more actors into the narrative. The exclamation of the teachers (turns 42 and 43) indicates that what Sander has told is worth paying attention to. Learning what and what not, to tell (Aukrust 1996; Ødegaard 2006), i.e. what may be of interest to others who were not there is an important part of developing narrative skill and a skill dependent upon the response by (and telling of) others (cf. Pramling and Wallerstedt, this book). The story now comes to a close:

Excerpt 2e

44 Sander [is leaning back on his chair]:	There were still more people.
45 Teacher Assistant 1:	I know, afterwards you went to your Granddad's mechanics, and what was it that you picked up there?
46 Sander:	Cake.
47 Teacher Assistant 1 [with a whispering voice]:	Cake! Did you taste it at the mechanics?
48 Sander:	No.
49 Teacher Assistant 1:	I know, you had to wait until Sunday, didn't you?
50 Sander:	Yes.
51 Ane:	Wait, wait?
52 Teacher:	Yes, Sander had to wait for the celebration of the baptism.
53 [Sander keeps on smiling.]	

In turn 44, Sander's answer indicates that he is telling a story to someone that admires his remembering the names of the guests there were still more

people. Here he shows responsiveness to his listeners. In a sense, he gives the audience what they want. According to Bakhtin, this addressivity will be part of the speaker's speech plan (Bakhtin 1986). Like the teachers (see above), Sander appears to speak in accordance with the response he anticipates (and has experienced). He has experienced the teachers being interested in his guests and his contributions are in accordance with this curiosity shown by the teachers. According to Bruner (1996), curiosity could be a trigger for narrating and a way of understanding why stories are being told in a certain way to certain audiences. Narratives are not texts without owners (cf. the issue on 'authorship' above). It could be argued that a narrative 'belongs' to the audience as much as to the teller. Showing an interest in a story being told encourages the speaker and triggers the participants to contribute to the collaborative narrative process in various ways.

The teacher's utterance, I know, afterwards you went to your Granddad's mechanics, and what was it that you picked up there?, shows that she has an agenda. She is already informed of the event, probably because Sander's parents have told her. So she brings her version of the next chain in the event to the 'communicative floor' (Goffman 1981). It does not seem that her first agenda is to support Sander's versions of the story. She also wants to contribute what she knows. There is a story to share about what happened during Sander's little sister's baptism, who were there and what they ate at the gathering afterwards.

The teacher's whispering cake! (turn 47) works as a subtle meta-signal that this part of the child's story is exciting and noteworthy (cf. above). She helps Sander formulate and develop this part of the story (cake-eating), I know, you had to wait until Sunday, didn't you? (turn 49). This prompts another child (Ane), who has listened-in on the story, to ask, Wait, wait? (turn 51). The teacher answers her by saying that, Sander had to wait for the celebration of the baptism. In this way she also verbalises what kind of event the story has been revolving around, or been about. This has until now remained implicit throughout the story. The teacher now gives a name to the event. In a sense, she baptises the story!

This co-narrative (Ochs and Capps 2001; Ødegaard 2007a) shows that mealtime serves as a place and time for the uses of everyday language, including the narrative genre. So what takes place here, to a certain extent, is familiarisation of the narrative genre. Being an everyday narrative, we were able to recognise some typical genre traits, but not others that could be seen in the first example, which began with 'once up a time' (excerpt 1a) and ended like a fairytale (excerpt 1d). These two stories are narrative sub-genres, a fantasy story and a life story, respectively. Still, temporal elements, the use of the past tense, setting a scene, introducing relationships between actors and a chain of events were visible in both narratives. The teachers were interested in and surprised by the remembrance of all the names Sander could come up with. However, they did not encourage him in a way story didactics often suggests, i.e. by saying "tell us more" or asking "what happened next?"

Discussion

Learning to narrate is an important skill (or rather a set of skills), since the narrative genre is a multi-functional cultural tool. Some functions well-served by narratives are to share experiences, the presentation of self (identity work), create continuity in learning through connecting the child's home with his or her preschool, collective remembering and learning to attend to what, for example the teacher or, by extension, the community, considers to be essential.

In a didactic perspective, this suggests that teachers have an important role in promoting and scaffolding narrative skills in children. As seen in the analyses in this chapter, the teachers take on this task by asking certain kinds of questions, for example asking about the aspects that need to be made explicit in order for the story to be intelligible to others (listeners to the story who were not part of the event narrated), for example: Who were there [participants, actors], where did it take place [setting], when did it happen [time]? Through their questions they also direct children's attention towards what they consider worth telling (Aukrust 1996; Ødegaard 2006). They also ask for and help children to clarify 'motives' for actions (i.e. Why did it happen like that?) and the need to engage the listeners (to introduce something unexpected, some surprising turn of events). In addition, they scaffold the children's narratives through providing contextual ties (backwards and forwards) and putting the focus on the narrative genre (form: how it begins, develops and ends).

Studying narrative practices in preschool with an interest in didactics brings interesting dilemmas and didactic challenges to light. One way of formulating this tension is to ask how the teacher can support a child in narrating his or her story without it becoming the teacher's story (as different from what the child is concerned with; cf. the distinction between the learner's and the teacher's perspective, in this book). On the one hand, we have what we have referred to as the 'authoring voice', on the other, a story could be said to belong to the listener as much as to the speaker. On the one hand, we have the attempt to share personal experiences, on the other, we have the aim of making collaborative sense. In the perspective of socio-cultural theory (Daniels et al. 2007; Wells 1999), cultural tools (e.g. speech or narrative genre) are the 'bridges' between the individual and the collective (Kozulin 1998; Säljö 2005). This means that an individual's development can be seen in terms of the appropriation of cultural tools, i.e. his/her increasing ability to take over and use such tools in functional ways by him- or herself. Supporting children's appropriation, as seen in terms of a changed division of labour between, for example a teacher and a child, is what Wood et al. (1976/2006) refer to as 'scaffolding'. Also, even if (as in our second example) the story is primarily told by one child (with the assistance of the teachers), other children are also present and 'listen-in' (Rogoff et al. 2003) and it is important in a collective arena such as preschool that these children, too, can learn from the activity. It can be said that it is by 'listening-in' that familiarisation with the use of the narrative genre begins. Everyday opportunities like these during mealtimes therefore constitute important arenas for gradually learning to narrate.

In the analysis of the second narrative, we raised the issue of 'authoring' and co-participants supporting someone (e.g. a child) to tell *his* or *her story* or to build up a mutual story. This could be conceptualised as an inherent didactic tension between the particulars of individual experience and a form that could be shared and contributed to by others (cf. Pramling and Wallerstedt, this book). In terms of the identity of story-tellers, this could be seen as a question of 'Who am I?' versus 'Who are we (as a cultural community, group)?' In a concrete and didactic sense, the second narrative analysed in this chapter also raises the issue of whether teachers aim at helping children develop a good story (according to genre criteria) or an accurate account of personal experience. A teacher may ask herself, What skill do I want to facilitate when a child is engaged in story-telling? In part, different kinds of questions and support (scaffolding) will be needed, depending upon how the teacher answers that question. Neither 'form' (narrative genre) nor 'content' (personal experience) can be developed separately. However, in a didactic encounter, the teacher can choose to highlight a certain feature, a 'figure' as opposed to the 'background'. In that way, children's attention is directed towards something so that they are guided into discerning that feature of the conversation.

At the same time, when a person utters a word or a sentence, he or she will expect some kind of response (e.g. an answer, sympathy, antipathy, support or resistance). Utterances are given meaning in human interaction in the way others respond to them (Bakhtin 1986; Goffman 1981; Rommetveit 1992). A story-teller wants to tell, not only *something*, but also *to* someone. Hence, it will be of pivotal importance to a child's developing narrative skills to meet teachers (and others) who not only have the ability to scaffold the child's narration further but who are also interested and communicate that they are interested, in listening to these emerging narratives. This way of viewing narratives (and communication more generally) in effect questions the notion of the individual's personal story. All stories are in a way inherently dialogic in nature. This is a challenging notion when discussing issues concerning personal experience and collective knowing in educational settings.

The analysis of the two settings, the first one framed and planned as a collaborative story-making activity and the second one a spontaneous everyday language exchange, made visible a difference in the teachers' approach to the task if seen in terms of learning to narrate. In the first example, it is obvious that the teachers have certain basic skills in mind in developing narrative skills in young children. They arranged the setting for promoting these skills. In the second example, the teachers' skills are not as explicit. Here the narrative process could have, in part, taken place without such skills. Still the fact that the co-narration lasted for several minutes indicates that the teachers realised the importance of talking extensively with children. The long duration of the narrative could be due to the teachers' amusement, they were informed of the child's experience and enjoyed themselves by keeping the narrative conversation going (Ødegaard 2007b). An everyday co-narrative process like this, during a preschool mealtime, is fragile since there will be competing claims for the communicative floor (Goffman 1981). Even if children take the initiative to tell of and share their experiences, in order to be able to elaborate these experiences into stories, they will be dependent on the teachers finding it worth

supporting this skill, the making of a narrative. Even if teachers can support this skill through more informal conversations with children (as in our second example), supporting the development of narrative skills could also be facilitated by teachers promoting such skills more systematically (as in our first example).

Learning language and becoming part of a culture are ongoing processes in children's lives. When children take the initiative to narrate and are invited to participate in narrative practices, or when their verbal initiatives are extended by a more competent communicative partner, the participants' sense-making could be stretched beyond their immediate understanding (Dickinson and Tabors 2001). This is obvious when it comes to children. However, teachers could also learn from the process of co-narration. During everyday co-narratives, teachers have the opportunity to learn about children's world-making and lives and thereby have the opportunity to expand their understanding of children's experiences. Efforts to listen and interest in listening to elicit children's narratives may have the potential to broaden teachers' knowledge of the events. Narrative activities in preschool are therefore important not only to the learning of the children but also to the learning of the teachers.

In contrast to a 'paradigmatic' mode of speaking and reasoning (Bruner 2006; cf. Vygotsky 1987), the apparent omnipresence of narratives in human communicative activities (cf. Bruner 2002; Luria 1976; Tomasello 1999) may imply that this skill develops 'naturally' by itself. In part, this skill is developed in the child through participating in (and being socialised into) a speech community (Rogoff 2003; Rogoff et al. 2003). Many children may well be familiar with narration, for example through being told and read stories at home. However, narrative skills are very unevenly distributed among children of different backgrounds (Wells 1986). This is particularly unfortunate considering the important functions served by this skill (including literacy development and hence success in school). Also, Kozulin (1998, p. viii) reminds us that what appears 'natural' and developed by itself, upon closer scrutiny (and e.g. cross-cultural comparisons) in fact tends to be appropriated through participation and support in "specific educational or experiential practices". This important reminder implies that in an institution such as preschool we need to make sure that all children are given ample opportunities and support in developing this vital means of (mould for) sense-making and communication. The distinction between a 'paradigmatic' and a 'narrative' mode of speaking and reasoning (Bruner 1986, 2006) also suggests that genre is a key concept in considering communicative development in the child (cf. Kamberelis 1999). Learning to narrate means appropriating a cultural mould for sense-making and communication, through which we learn and make sense of the fantastic (e.g. strawberry-eating cats and chimney-sweeper-eating squirrels) as well as the ordinary (e.g. the baptism of one's sibling), ourselves and each other.

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Chapter 3
Early Mathematics in the Preschool Context

Elisabet Doverborg and Ingrid Pramling Samuelsson

Introduction

Hjalmar (1.3 years) opens a large drawer in the kitchen, exploring all the objects inside, and turns all the knobs on the stove. He then takes out a lot of kitchen utensils. All the plastic bowls are sorted according to size. He tries things out, changing his mind a few times. He then begins to put back all the kitchen utensils and bowls into the drawer. Suddenly he bends down and lifts up a plastic bowl with both his hands, pretending that it is heavy by groaning "oh, oh!" He does this twice. He then stands a little bit away from the drawer, concentrates and throws a small plastic tool into the drawer. (Sommer et al. 2010, p. 202)

Hjalmar himself initiates the whole project, and he makes his own decisions and seems to enjoy it. He approaches this drawer for the first time. He explores, and we can see basic mathematics when he compares sizes. But in what way is it mathematics for Hjalmar? Of course, not at all. He focuses his attention on aspects in the world around him that make sense. At the same time, we can see that he pretends that a bowl is heavy, he groans. This means that he plays and learns simultaneously. What about mathematics learning? We can see that he categorizes the bowls according to similarity, but we also notice that he tries to order them according to size. Finally, when he throws the utensil into the drawer, he estimates distance. In a way, we can say that he lives and acts and uses early mathematics, but at the same time we could claim that, in a good pedagogical setting, the adult would have put his actions into words and communicated with him about aspects of mathematics. According to Schwartz (2005) early mathematics is neither pure imitation nor pure invention, but that children need to learn from their own experiences in a way that makes sense to them. "However, they can only learn the language of mathematics by listening to adults and peers" (Schwartz 2005 , p. 2). Listening is, however, not enough for understanding or making sense, there is also a need to interact with objects and communicate with others.

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The purpose of this chapter is to show, among other things:

- How the fundamental aspects of mathematics can be found all around us, and can be used to develop children's early learning in this area;
- How communication and interactions are key features for learning mathematics;
- How visibility, concrete objects, and teachers' skills in mathematics and teaching young children play a decisive role in children's learning;
- How variation is a resource for making mathematics visible to children.

In recent years, early mathematics has been put on the agenda for various reasons. First of all, research has shown how early learning makes a difference for children encountering mathematics later in school (Duncan et al. 2007; Hannula and Lehtinen 2001; Sylva et al. 2004). Secondly, it has been reported that teachers working with young children have insufficient knowledge of early mathematics learning and do not feel competent to teach mathematics in preschool. Besides this, many preschool teachers experienced mathematics as something negative during their own schooldays and therefore have no wish to work with it (Doverborg 1987; Doverborg and Emanuelsson 2006; Doverborg and Pramling Samuelsson 2006; National Research Council 2009). Thirdly, the teachers' attitude to mathematics seems to be one of the main reasons for very poor emergent mathematics in early childhood education. The National Research Council (2009, p. 2) states: "When early childhood classrooms do have mathematics activities, they are often embedded in the curriculum, in which the teaching of mathematics is secondary to other learning goals."

We will now describe different aspects of mathematics, drawn from various research projects and work in preschool. First, we will analyse a theme (trolls) in preschool focusing on children's possibilities of meeting mathematics in their first years in early childhood education. Second, we will follow a specific intervention dealing with the concept of number and children's learning of this and follow up their knowledge 3 years after the intervention took place. Third, we will again meet 1- to 3-year-olds and their various conceptions of some mathematical aspects and notions. Fourth, we will follow mathematics in everyday situations, for example, at lunch-time and during afternoon snacks. Finally, we will discuss what didactics in the area of early mathematics means, and how the teacher can contribute to children's interest and learning.

Mathematics Learning in Early Childhood

The most distinguished researchers in the USA in the field of early mathematics have reviewed all evidence-based discussions on what difference the learning of mathematical concepts in early childhood makes to the learning of mathematics in school (National Research Council 2009). They there claim that the foundational mathematics content is basically: (1) number, including operations and (2) spatial thinking, geometry, and measurement. These are the two aspects early years' education should be focused upon. The Swedish preschool curriculum clearly states that

teachers should strive to develop each child's understanding of the fundamental characteristics of the concept of number, measurement, and shape and their ability to orient themselves in space and time (Ministry of Education and Sciences in Sweden 1998). The child's progress in learning has to be regularly assessed and evaluated in some way. Assessment and evaluation are always a part of children's learning, as two sides of the same coin (see Pramling Samuelsson and Pramling 2009).

The studies we will present highlight evaluation in different ways. Allowing children to document their experiences and perceptions in different content areas is a means of evaluating children's knowledge creation. It also gives some indication of what tools the teachers believe are required for developing children's mathematical thinking and what kind of preschool activities they think are important. The teachers see many opportunities for the children to develop their mathematics learning, both in terms of numbers and experimenting with numbers, for example, during the troll theme, dividing fruit during breaks and setting the table for lunch. We will occasionally take part in the way children face numbers and how they solve problems such as: "How many should I set the table for?" Measurement, shape and ability to orient themselves in space are areas of the troll theme that the teachers highlight and let the children think about. Through a variety of relevant experiences, encounters and challenges, the children are enabled to develop an understanding of different mathematical areas. During the fruit division the children are also given many opportunities to familiarize themselves with numbers, but it is just as relevant to reflect on shape and measurement (Ministry of Education and Sciences in Sweden 1998). This does not happen automatically but requires teachers with didactic skills and an awareness of the fundamental aspects mentioned above.

Making Early Mathematics Visible in a Theme

In this section, we will follow a group of young children in their daily work with trolls and see how the teacher makes aspects of early mathematics visible to children from the perspective of developmental pedagogy (Pramling Samuelsson and Asplund Carlsson 2007).

The preschool studied has a lot of out-door work every day, since it is located close to a small wild park. Visiting the park is associated with joy and discovery. The teacher noticed an interest in trolls among the children since someone fantasized about trolls when they collected stones, sticks, leaves, moss and other things in the park. This made the teacher decide to introduce some aspects of early mathematics in a troll theme. The children were under 3 years of age.

Back in the preschool, children had to put all their collected objects on a table and were asked to sort them into different categories, something that was decided after negotiations between the teacher and the children. This brings in a lot of comparison between differences and similarities. Differences were about the largest and the smallest one, the longest and the shortest one, but also about which one was the heaviest and which one was the lightest. Children also laid out a series of ob-

jects from the smallest to the largest (stones) and compared the longest and shortest (sticks), the shapes in terms of which stone had most corners, and which one had the smoothest form (Björklund 2008, 2009; Malmer 1999).

The teacher then introduced the story about the *Three Goats*, which also involves a troll, and together they decided to make trolls out of the objects and materials they had brought from the wild park. Someone began with a stone and so did the others. In a dialogue with the teacher, they then realized that they needed one more stone, one for the head and one for the body. "That means you need two stones," said the teacher and they all agree that they needed two. Then the question was: Which stone should be used for the head and which one for the body. Everybody chose the largest one for the body and the smallest one for the head, which the teacher commented upon and drew the children's attention to. With some help from the teacher they glued the stones together and then a dialogue started about the shape and size of the eyes, the length of the hair and the tail. The teacher, for example, asked: "How long do you want your tail, Cecilia?" They also began to measure the length of hair and tails to see which troll had the longest, shortest or were equal. When everybody's troll was completed they were asked to place all of them on a low table. The teacher then again challenged the children to compare size, length, weight, color and form and talked about this and also counted how many trolls they had made all together.

The children went on to construct a forest together with their teacher where the trolls were going to live. Children gave suggestions about mother, father, and child trolls and how they could become different troll families. In the end the 14 trolls constituted five families, similar to each of the children's own families. Two families had a troll mother and two troll children, two other families had mother and father trolls and one child troll and finally the fifth family had a mother, a father and two troll children. The children then constructed five huts in the forest for their troll families. This project provided many opportunities to approximate for example size, extent and height, as well as recognize different shapes. Children's first hut turns out to be too small for the troll family, but the two smallest trolls could stay there. Then the teacher suggested to the children that it was necessary to both approximate and to measure when constructing a hut for each troll family. All 14 children were divided into five groups and each group had to decide how to go about measuring their trolls in order to construct a hut large enough for each family. Children started to measure either with their hands, a stick or a block. Here, they already showed awareness of the principle of measurement, that is, to use one and the same unit although the measurement was still not standardized, but the hand, stock or block utilized the unit for measurement.

The children often played with their trolls, which were sometimes also taken away from the forest to be involved in other play scenarios. When the trolls returned to the forest, they once again had to measure the sizes of the troll and compare with the huts in order to find the correct one for each family. The teacher questioned the children repeatedly about how many trolls there were in each family and who they were. Here children met numbers up to five and they were given many opportunities to discern and distinguish between both trolls and huts. During the whole autumn the children played with their trolls in the constructed forest, they communicated

Fig. 3.1 Santa Claus trolls in the forest

and used their imagination in play settings. Close to Christmas they began to make Santa caps for their trolls to turn them into Santa Clauses. Once again they had to estimate and measure to make caps for their trolls, responding to the question, "How large cap does your troll need?" When all the trolls had got their caps the teacher suggested that they should place all the Santa Claus trolls in a long row, from the smallest to the largest (Fig. 3.1).

We have here seen how children have had opportunities to compare, experience size and count numbers up to five, an exercise that helped them to begin to make sense of words for position, such as, with reference to the Santa Clauses, stand beside each other, behind or in front of, last or first, in the middle, etc. (Malmer 1999). To also give the children an opportunity to make sense of the numbers, the teacher drew the children's attention to how the number four (the size of many families of trolls) could be distinguished in different ways, like two adults and two children, one mother and three children. This helped the children to become aware of numbers (Reys and Reys 1995; Sterner and Johansson 2006). It should be noted that researchers describe children's understanding of numbers and counting in a variety of ways (Ahlberg 1997; Fuson 1992; Neuman 1987).

To work thematically provides many opportunities to highlight different aspects of mathematics in natural settings. In this theme, the teacher's intentions were to show the aspects of spatial thinking, geometry and measurements (Ministry of Education and Sciences in Sweden 1998), but despite that, the children still met the concept of number, as it was a part of understanding the world around them (Doverborg and Emanuelsson 2006; Doverborg and Pramling 1996).

Number Conceptions in a Toddlers Group

Here we will give an example of how a teacher systematically works in order to develop eight 2- to 3-year-old children's conception of numbers and what impact this work has on their mathematical learning during the preschool years. In this example, the work with the "star cards" during the daily assembly is in focus, a project that lasts for just over 3 months. After about 8 months, the project is evaluated and this child group is compared with another group of children of the same age and from a preschool that is considered to be of similar quality regarding the pedagogical work. However, there is an essential difference between the two groups in regard to the content that the teachers focus upon. The group that works with the "star cards", here called the experimental group, has a teacher who focuses on children's

learning of basic mathematical concepts, while the other group, here called the comparison group, has a teacher who is of the opinion that language development is more important and that learning mathematics will come automatically when the children are ready for it. After 3 years a follow-up takes place and the children in the two groups are interviewed again. Now the children are between 5 and 6 years old and it is their last semester in preschool.

The Actual Work with Numbers

The work is initiated when the children one day show their great fascination with stars. One child has brought golden plastic stars of various sizes to preschool. The teacher takes this fascination as a starting point to challenge and develop the children's understanding of numbers (Fuson 1992; Gelman and Gallistel 1978; Neuman 1987). She makes cards with 1, 2, 3, 4 or 5 stars and keeps them in a box divided into five compartments, one for each type of star card. The stars are placed on the cards in the same way as the spots are on a dice (Fig. 3.2).

Every day the teacher lets each child choose a star card, which he or she puts up on a notice-board next to his or her name. Almost every day for more than 3 months the teacher works together with the children, in different steps, which are partially developed from the children's comments. One sequence of activities is developed in interplay between the children and the teacher, in which the teacher considers the children's reactions and interests. The sequence of activities can be summarized as follows:

- Each child can take a card with a pattern of stars they like.
- Each child has to pair his or her own card with another card with the same number of stars.
- Each child has to count the stars on his or her card.
- Similar cards are put in a row on the board and children can compare the lengths of the rows, which vary depending on how many children have chosen a particular card.
- They count how many cards there are in each row.
- After a while the children can choose their own card, but are also asked to take a card with a different number of stars.

Fig. 3.2 Star cards

This becomes a routine in which there are continuous dialogues and children are asked to express their views. The teacher never says that anything is wrong or correct; she just keeps this as a play situation which children seem to enjoy. It is just as important, however, that the teacher challenges children's ideas by asking open questions and asking children to narrate an experience or express their thoughts (for an extended version of the study, see Doverborg and Pramling Samuelsson 2000). Children are involved in similar activities during other parts of the day.

Evaluating Children's Understanding—After 8 Months

We will here just give a few examples of the evaluation that the researcher made in the form of open interviews about numbers with one child at a time in a room at the preschool. The situation was video-recorded as a basis for analysis. The first task for the children in both the experimental group and the comparison group was to pick up cards with dots up to five at random.

Cards with 1 to 5 spots on them (Fig. 3.3) are placed on a table in front of the child. There are two of each spot card and each number is represented by spots in three different ways, which gives six spot cards for each number. As far as possible, the spots are placed differently from the way they are placed on a dice, in contrast to the star cards, on which the stars are placed in similar positions to the spots on a dice. To start with the child can choose any card he/she likes and tells how many spots there are. After making his/her own choice, the child is asked to pick one card with 3 spots and then another one with 3 spots placed differently from those on the

Fig. 3.3 Alex working with spot cards

Table 3.1 Percentage of correct answers in the two groups

Numbers of spots	A	B
1	100%	93%
2	100%	87%
3	100%	38%
4	86%	40%
5	86%	44%

A experimental group, *B* comparison group

first card. This procedure is repeated with two different cards with 1, 4, 2 or 5 spots, respectively.

This task aims to find out if the children can see the number, whatever the patterns are. In Table 3.1 we can see the correct answers from both the experimental group and the comparison group.

When we compare the children's answers, we can see great differences between the groups. There are larger differences when there are cards with 3, 4 or 5 spots than when the cards have 1or 2 spots. It is astonishing that there are already large differences when children are supposed to take a card with only 3 spots. Wynn (1990) believes that children can distinguish numbers up to three in the very first year of life. This was not, however, confirmed in the results of our comparison group. On the other hand, this could be a question of these young children not being able to understand the language that the interviewer used in her instructions.

When teachers and children in preschool worked systematically with the numbers 1 to 5, both in relation to the "star cards" and also to other objects, we chose to go beyond the numbers that they had worked with when we evaluated their knowledge. Children in both groups were asked to take two cards that together showed 6 spots and again where the spots totalled 7. Here, too, the differences between the groups became obvious (Table 3.2).

Picking two cards that have 6 spots together was something the children in the experimental group (A) mastered to a considerably larger extent than the children in the comparison group (B). In the experimental group the percentage of correctly paired cards was 88%, compared with only 26% in the comparison group. It is not only that they mastered the task better that is interesting, but also which cards they paired. In the comparison group the children paired two cards with 3 spots to make the number 6, while the experimental group used three different ways to make the number 6. They paired two cards with 3 spots, or one card with 5 spots and one with 1 spot, or one card with 4 spots and one with 2 spots to make the number 6.

When it came to pairing two cards that have 7 spots together, both groups found it more difficult. Nevertheless, 75% of the tasks were mastered in the experimental group, while only 13% in the comparison group got it right. This is a large difference. While a few children in the comparison group did manage to pair one card

Table 3.2 Percentage of correctly paired spot cards in the two groups

Number of spots required	A	B
6	88	26
7	75	13

with 4 spots with one card with 3 spots to make 7 spots, those in the experimental group found different ways of making up the number 7 as well the number 6. They paired cards with 3 and 4 spots, or cards with 5 and 2 spots. Some children said that they paired cards with 4 and 3 spots, or 2 and 5 spots. Seeing all the alternative combinations of number for a wholeness is an important ground for developing understanding of numbers and counting something according to Neuman's (1987) study.

When we claim that children have developed an understanding, their understanding must, according to Gelman and Gallistel (1978), include five principles. These are: (1) The one-to-one principle, (2) the stable-order principle, (3) the cardinal principle, (4) the abstraction principle and (5), the order-irrelevant principle. When children worked with the star cards these five principles were visible. Children made pairs between their fingers and the stars on the cards (principle 1). The stars were counted since the children use the counting words (principle 2). When it comes to principle 3, many children counted the stars as follows: "1, 2, 3, 4…4 four it is." This means that children then knew that the last number counted was the total number of stars. All the children grasped how the stars could be counted, principle 4, and that one could begin counting anywhere on the card, but each star had to be counted only once (principle 5).

Three Years Later

We interviewed the 16 children from the two preschools 3 years later, as we were interested in finding out whether the differences between the children in the two groups remained. During the last 2 years in preschool all the children, both from the experimental group and the comparison group, had had other teachers than the ones they had had at the beginning of the study. We would like to emphasize that the view of learning, especially of mathematics, as *discerning* was something that imbued the whole preschool, not only the youngest age groups. That is, the preschool was influenced by developmental pedagogy (Pramling Samuelsson and Asplund Carlsson 2008). The same goes for the comparison preschool, where the teachers believed that there was no need to encourage mathematics in preschool but emphasized the importance of challenging children's language awareness.

This time the tasks included rote counting, giving an explanation why it is necessary to be able to count, dividing nine buttons into two boxes, solving the problem of dividing ten buns among three children.

We will not give all the results here, but just point to some interesting differences between the two groups when they are 5 to 6 years old.

After the analysis of the children's response to the function of being able to count illustrated by the question: "Why is it good to be able to count?" their perceptions were categorized as follows in Table 3.3.

The main differences between the groups are that all of the children in the experimental group thought the task aimed to solve a problem in everyday life, like for example, knowing that you have got the correct number of fruit slices, counting

Table 3.3 Perceptions of the function of counting

Category	A	B
1. Solve everyday problems	8	4
2. Do not know	–	2
3. Rote counting	–	2
4. A school subject	2	3
Number of perceptions*	10	11

A experimental group, *B* comparison group

* Some children expressed several perceptions and therefore the number of perceptions is larger than the number of children. Eight children from each group participated.

the children to check that they are all back from the excursion, making diagrams and tables of birthdays etc., while only half of the children in the comparison group said so, but instead pointed to a school subject or did not know. The children who perceived mathematics as good for everyday life saw it as something they would have use of right away, while children who saw it as a school subject perceived it as something they would need in the future. The same differences in the responses were also seen in another study with a larger group of children of the same age (Doverborg and Pramling Samuelsson 1999a). Similar perceptions have been found in connection with learning to read; some children perceived the function as something related to their everyday life, while others saw it as a school subject. What does the difference between these perceptions imply? Does it matter whether children think they should use mathematics in the future in school or adult life, or if mathematics is something to use in everyday life? The answer is yes if children find it meaningful at the age of five, they will also be motivated to learn more advanced mathematics. Dahlgren et al. (2006) showed in their studies how children's perceptions of learning to read were related to their reading skills. So what could be said here is that, although very few children who have been followed for a period of years in regard to their mathematical skills, the results are supported by similar studies with larger groups of children (Doverborg and Pramling Samuelsson 1999). Later in this chapter we will also come back to what experiences children in the experimental group gained, which might explain why their lead in mathematical knowledge continued and developed. The challenges and experiences children meet are closely related to their teacher's competence (Pramling and Pramling Samuelsson 2010).

The same difference was seen when the children from the two groups were given the task of dividing ten buns among three children. In our experimental group half of the children solved the problem mathematically, by saying that the children got three buns each and then they have to divide the last one into three pieces. There was only one from the comparison group who solved this task. Here, too, the results are comparable with those reached in an earlier study with an experimental group of 24 children and a comparison group of 20 children (Doverborg and Pramling Samuelsson 1999b).

The next result focuses on dividing nine buttons into two boxes. Here children first count all the buttons together with the researcher, so they can be sure of how many they have. She then hides some buttons in one of the boxes and asks children

how many she has hidden. The rest of the buttons are still visible and touchable on the table. The children in the experimental group did this correctly in 89% of the trials while those in the comparison group succeeded in doing this in only 44% of the trials. However, it is not only a question of answering correctly, but also of how the problem is solved. Seventy-six percent of the answers in the experimental group were based on what children visualized in their minds, while this was the case for 18% from the comparison group.

In this study, the teacher's knowledge about the object of learning, what children's learning should be focused on, as well as the act of learning, how children learn, became visible. From a developmental pedagogical perspective, this means that the teacher must have a deep knowledge of mathematics as well as having mathematics teaching skills. Both the content and the process are very important aspects of didactics, as has been clearly shown in this study of children's knowledge of mathematics in the experimental and the control group.

One- to Three-Year-Olds' Knowledge of the Notions Small/Large and How They Sort Objects

In the project *Children's Early Learning* (Sheridan et al. 2009), we have studied how children's understanding and experience of early mathematics appears in the context of different preschools. That study shows how the quality of their preschool plays a decisive role when it comes to how children develop their mathematical skills. The 38 preschools included in this investigation have been quality assessed with ECERS (Early Childhood Environment Rating Scale; Harms et al. 1998).

It became clear that ten preschools were assessed as being of high quality while nine preschools were of low quality, leaving 19 of medium quality. When it comes to early mathematics, the differences between high- and low-quality pedagogy was illustrated in the way the teacher communicated with each child. In preschools of high quality, the teachers introduce new notions and challenge the children to think, talk, reflect, argue, count, solve problems, and recognize shapes and patterns related to different activities during the whole day. The teachers use questions where children need to reason logically and draw conclusions. There is also a rich variety of relevant objects and materials available in the preschool. The teachers use everyday life experiences as starting points for dialogues about mathematics content. In preschools of low quality, the teachers seldom focus on mathematical notions or problems, or take part in children's games and other activities where it would be natural to focus on mathematical aspects. There is also a limited amount of materials and there are few activities where children's communication and reasoning are challenged.

Totally 225 children, 1.0–2.11 years old, 115 girls and 110 boys, participated in the study. Altogether the children had to work on six different tasks. These were the notion of large/small and first/last, number conception (up to 3), to represent numbers on paper, count objects and sort objects.

A structured communication and play situation was arranged with one child at a time. This means that the researcher had a set number of questions to ask, but their

order or wording was changed depending on how the child reacted to or approached the tasks. It all began, however, with a moment of excitement, when the researcher opened up small boxes and bags containing different toy animals and other objects. The child was always first allowed to touch and play with the objects. The communication and interaction between the researcher and the child were video-recorded so the tapes could be used repeatedly during analysis to interpret small nuances in verbal and non-verbal communication. The session took about 15 minutes for each child, which is quite a long time for young children to elaborate and communicate with an adult around some objects. But most children were engaged and interested in the tasks and some wanted to continue when it was finished, but let us first follow the communication in the data material.

Since children's modes of communication (verbal and non-verbal) differ, a number of qualitatively different categories of children's ways of dealing with each task appear in the analysis. These categories characterize the different ways children have made sense of the tasks. We will illustrate these categories with reference to some of the tasks.

The Structured Communication and Play Situation

The chosen tasks children had to deal with were based on aspects from research about early mathematics that have proved to be decisive for children's understanding of numbers, such as distinguishing size, words for comparisons and position finding and sorting (Doverborg and Pramling Samuelsson 1999; Fuson 1992; Gelman and Gallistel 1978; Malmer 1999).

When children worked with the task of the notions small and large, they were given two toy pigs of different sizes, fences for constructing an enclosed pasture and a food-trough (cf. Fig. 3.4). The researcher and the child talked about the pigs, they constructed an enclosed pasture, and discussed the pigs going in and getting some food. The

Fig. 3.4 A boy with the pigs and the enclosed pasture

teacher asked the child various questions about small and large, for example, could he let the large pig jump over the fences, or the small one have some food and vice versa, until she had an idea about what the child's understanding of the notions was.

Let us follow a short dialogue between the researcher (R) and Alex (A), 2.2 years:

R: Shall we see if we find a pal for him (taking out a bag)? Well, do you think he has a pal?
A: There (the child takes out the big pig).
R: A pig.
A: Hello.
R: They are saying hello to each other (the child makes kissing sounds).
R: Kissing each other.
A: Ehh.
R: Ye-es, this time they run in here (points inside the pen). Shall we see if the big pig can go in and eat a bit of food?
A: …(moves the big pig into the pen).
R: Yes, he could.
A: Look.
R: Yes, a little one.
R: …little (the child puts the little pig in the pen).
R: Is the little pig also going in and eating a bit?
A: …eating a bit.
R: Oi, how good.
A: Oh (takes the pigs out of the pen again).
R: Yes, are they going out again now? Can the big pig be allowed to come to me (holds out hand).
A: Me then (places the big pig in the researcher's hand).
R: Yes, look, he could.
A: Aa.
A: And then he comes to you again (hands the pig to the child). Can the little pig be allowed to come to me (holds out hand).
A: … (places the little pig in the researcher's hand).
R: He could.
A: Aa.

We can see that the researcher goes on asking questions until she perceives that the child shows by his actions that he knows which pig is large or small. The situation is playful with a lot of interaction. Alex shows that he has an understanding of the concepts large and small, without using the actual words for these concepts. His understanding is expressed in his actions.

When children are to solve the task of sorting objects, they are given two green and two red toy bears of two different sizes (Fig. 3.5). Here, too, the researcher and the child talk about and play with the bears for a while. They talk about what colors the bears are and that they are of different sizes, for example: "Look, here is the little bear." "Do you have a large bear?" Children also get two small boxes in which they are asked to let the bears go to sleep. We will now follow the continuous dialogue between Alex and the researcher.

R: Yes. What do the teddy bears look like then?
A: Oh…lived
R: Yes, a red bear

Fig. 3.5 Sorting bears

A: Oh… bop (lets the teddy jump)
R: Do teddy bears jump?
A: Hophop
R: Yes. Is there any small teddy bear then?
(The child picks up the big green teddy bear and shows the researcher)
R: Is this one small?
A: Ophop
R: Is this one jumping too, ha, oops
A: De (is holding up the big green one and shows the researcher)
R: Yes, that one was big.
A: Upup
R: Hop, hop says the teddy. A green, green teddy (points)
(The child picks up the small red teddy bear and shows it to the researcher)
R: Oh, what was that, was there a small teddy too?
A: Opop (lets the small red teddy bear jump too)
R: Hop, hop did they say? Shall we see if they can jump down into the boxes (takes out the boxes and places them in front of the child)
(The child puts the big green teddy bear in the blue box)
R: Oh, does the big green one jump?
(The child throws the small red one into the turquoise box, but it bounces on the rim and out again) ooh, ooh.
R: Ooh.
(The child picks up the red one again and puts it in the turquoise box) hop
R: And the little red one jumps down there.
A: Oh, wop (throws the small green into the turquoise box)
R: And the little red one (she says the wrong color here)
(The child throws the big red one into the turquoise box) Oops.
R: And the big red one there.
A: And the red
R: The big red one, yes.
A: …
R: Have all the teddies jumped into the boxes?
A: Down in box.
R: Mm.
A: The lid.
R: Shall we put on the lid?

A: Yes.
R: Mm.
A: This (places the blue lid on the blue box)
R: So, good.
(The child places the turquoise lid on the turquoise box)

We see above how the researcher and the child, together, first talk about the teddy bears, their colors and size. Alex refers to the red teddy bear as blue. The researcher corrects this indirectly by repeating the child's response but using the correct color of the teddy bear, which is red. The boy places all the teddy bears in a row but also plays and jumps with them. The jumping is something that the child initiates and the researcher picks up and spins on. The jumping becomes central to Alex in his play with the teddies. When he is asked to put the teddy bears in the two boxes, he puts the two small teddy bears and a big red one in one box and a big green teddy bear in the second box. Finally, Alex places the blue lid on the blue box and the turquoise lid on the turquoise box. Alex is not categorizing the bears, neither after color nor size, but he is anyhow sorting them into two boxes.

We also see that the situation is open and responsive. Alex is given the opportunity to play with teddy bears in various ways before the researcher introduces the task of letting the bears jump into the boxes. Sometimes the researcher tells the kids that some teddy bears can live in one of the boxes and some in the other. How the researcher puts the questions depends on what the children do with the teddy bears. On this occasion it seemed most natural for the researcher to relate to the jumping because Alex himself introduced this (Doverborg and Pramling Samuelsson 2011).

To summarize, we would like to point out a few things about the procedure of evaluating children's skills and knowledge. First of all, the data production is based on interaction and communication between each child and the researcher. While the researcher is the one who asks questions and sets the stage, she is also extremely sensitive to the child's interest and own ideas. The intention is that no child should feel unsuccessful. They all succeeded in their own way, based on how they perceived the question, their interest and cognitive skills—dimensions intertwined in practice (Hundeide 2006). The interaction and communication support children's possibilities of solving the problems. The main idea behind this data production was that it could also be used as a source for teachers in practice, which we will come back to in the discussion.

Children's Understanding of Small and Large

With this task we wanted to find out children's experiences of the two notions small and large. It turned out that the children either had an idea about both or neither of the notions. We could not find a single child who knew one of the notions but not the other, which is interesting in itself. These are related notions, but we also looked at first and last and here we could find children who knew first but not last (Doverborg and Pramling Samuelsson 2009). Some children immediately named the pigs small

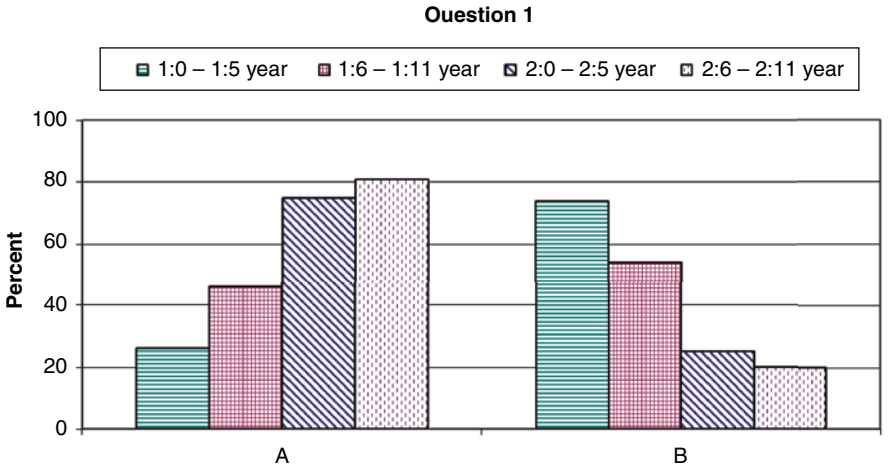

Fig. 3.6 The age trend in understanding the notions of small and large

and large, while other children related the pigs to family members, like, Daddy pig for the large one and baby for the small one. In the analysis of this task, we could only distinguish two categories:

1. Children have an understanding of the notions small and large, which means that they experience the relation between the two pigs.
2. Children do not solve the problem, or do not relate at all to the questions.

In Fig. 3.6 we can clearly see that the ages of children and their response is important for how they solve the different issues.

Of the 225 children, there were 128 who demonstrated, verbally or by their actions, an understanding of the notions small and large. This is the task where the clearest age-trend is shown in the data, when children are divided into four age levels. Twenty-six percent of the children in age group 1.0–1.5 years solved this task, 46% of children aged 1.6–1.11 years, 76% of children in the age of 2.0–2.5 years, and finally 81% of the children 2.6–2.11 years old. If we specifically look at the age group 1.0–1.11 years, about one-third of the children solve the task, while more than three-fourths of the children in the age group 2.0–2.11 solve the task.

Sorting Bears

The aim of the task with the bears is to study how children sort some objects. The bears are taken out of a small brightly colored bag and the researcher talks about the bears (see above). The situation is open and permissive.

The intention of the researcher is to draw the children's attention towards sorting the bears according to one criterion they themselves recognize. In the analysis we

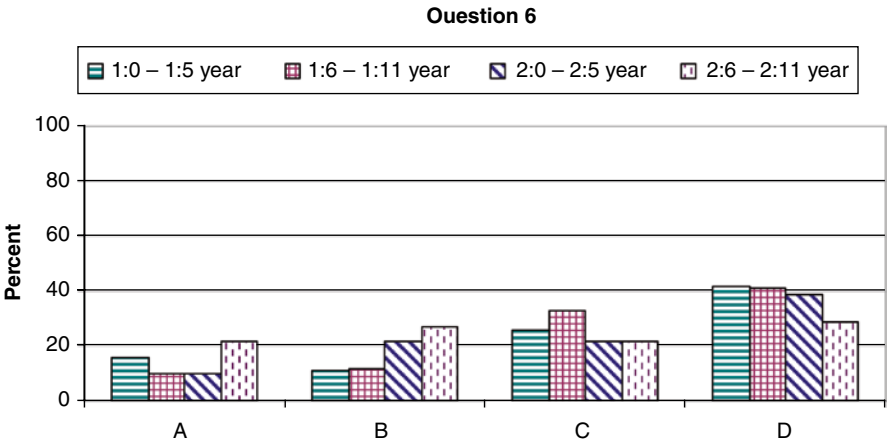

Fig. 3.7 Percentage of children sorting bears in different ways distributed by age groups

found four qualitatively different categories for how children experience the task of sorting (Fig. 3.7).

1. Sorting the bears according to size
2. Sorting the bears according to color
3. Mixing colors and sizes of the bears
4. All bears in one box
5. Do not relate to the task (This category is not included in the figure)

This task is the easiest one, which is shown by the fact that 215 of the 225 children are found in categories A to D. Only ten children did not respond at all to this task so this category, E, is not included in the table. This is also the only task where all children in the oldest age group (2.6–2.11) acted and solved the task. In the youngest age group (1.0–1.5) 95% of the children sorted the bears in some way. Since so many solved the task the age-trend is vaguer. There are more children sorting the bears according to color than according to size. Forty-two percent of the children in the age group 1.0–1.5 put all the bears in one box, while only 29% of the children in the age group 2.6–2.11 did so. The researcher asked the children if any bears should sleep in the other box. But most of the time children put all the bears into the other box without separating them.

Sorting objects in many different ways is something children are involved in at an early stage. In preschool, children have to categorize objects when expected to tidy up all the toys, e.g. blocks are sorted by color. Categorizing things is something children often do spontaneously and experience at early age. This may account for the large number of children who were able to categorize the bears in one way or another. When children categorize objects they are given an opportunity to develop logical thinking. When children learn to see connections and discern qualities, they also develop an understanding of basic mathematical notions (Björklund 2008, 2009; Curcio and Schwartz 2006; Kilpatrick et al. 2001).

In the results we can see a dramatic development of children's early mathematical skills in the years between 1 and 3. This means that this is a critical age for introducing the basic concepts of mathematics as a sound basis for the later learning of mathematics. This is why it is extremely important that children meet teachers in their early years who put the children's actions into words and challenge all children in their language and mathematics learning in everyday practice. In our study, we have seen the large variation within a specific age-group when it comes to understanding of the concepts large and small and their ability to sort objects. A question one can ask is how these differences at an early age affect children's further development of mathematics and their interest in it. Duncan et al. (2007) have shown how preschool children's informal knowledge of mathematics and literacy is strongly correlated to later knowledge development. The authors also point to the importance of the child's ability to concentrate on something. This might be one aspect of children's ways of solving the tasks that we have not specifically examined.

Children's Documentation of Laying the Table

The teachers in the preschool studied have experienced that the various aspects of mathematics can be problematized, documented and reflected on in the regular routine situations. They use these aspects as a starting point in recurrent meal situations, such as breakfasts, lunches and fruit or snack breaks. The children help to lay the table for lunch and at each table one of the children is responsible for laying the table. In this group there are 18 children aged 3 to 6 years. They are seated around three different tables.

The teacher starts by letting the children reflect upon how many children there are at their table. How many children are here today? Is someone missing? How many children should they lay the table for? In this preschool documentation is considered very important and is frequently used to follow up on the group's and each child's mathematical learning.

The three children in charge of the three tables discuss each other's different solutions to the task of laying, to make sure that each and everyone gets a plate, a knife, a fork and a glass. The teacher also takes part in the discussion, but in order to be able to follow the children's mathematics learning the discussion alone is not enough. Here the children's documentation of the laying of the table adds important information. By letting the children document the laying of the table by making drawings, both children and teachers are given opportunities to see and reflect upon the different ways the children represent numbers (Doverborg 2006).

This group illustrated numbers in different ways in their drawings. Some drew a circle for each place that was laid, others drew each child at the table or a short line representing each child, while some wrote down a numeral for each and everyone who should be seated at the table. There are also children who have developed an understanding of mathematical symbols and the cardinal number principle, and they document the number of children at the table by writing, for example, the number

Fig. 3.8a–d Stina's various documentations of laying a table during one year

9 for the nine children that are going to eat at their table. Since the children lay the table several times during the week they are "table hosts/hostesses", and also several weeks during a semester, their documentation can be followed by the children, the teachers and the parents. The teachers can follow the children's development (cf. Figs. 3.8a–d) and reflect on and plan what challenges each child needs for further development.

Another occasion when the children document an activity is their fruit break. The children are given, for example, half an apple, which they can get divided into any number of slices (wedges) they wish. It should be mentioned that the children in another group of 2-year-olds were also given half an apple, but at that time it was never divided into more than three slices since the teachers' goal was to develop an understanding of numbers up to three among the children in this group. When the children were able to elaborate with these first numbers they could have their apple half divided into five slices. If a child asks for four slices, the teacher sometimes gives them the correct number, but may also give the child three or five slices. In this way the teacher tries to problematize the dividing of the apple to get the children to create patterns of different numbers (Doverborg and Pramling Samuelsson 1999).

> Liz (3.9) wants four slices but is given two. When the teacher asks if she has got all the slices, she answers: 'No, there are just two—two missing'.
> Peter (3.1) wants four slices but is given three. When the teacher asks if he has got all the slices, he answers: 'No, there are two and one, so I want one more'.

This could be seen as a beginning of developing an understanding that numbers can be divided and that the parts can be regrouped. The teachers' intentions are

also to give the children opportunities to develop an understanding of the concepts increase—decrease, double, half, quarter and third.

Even though the children have been dividing their half apple since they were 2 years old, the exercise still remains an exciting and fascinating one since the teachers deliberately create new challenges. The apple half can eventually be divided into ten slices.

> The teacher asks Peter (5.1) how he wants his apple to be divided. Peter says: 'I want ten slices'. 'How should I cut the apple to make ten slices'? asks the teacher. 'First you cut five slices', says Peter. 'Then what do you do'? asks the teacher. Peter tells her to divide each slice in the middle and it will make ten (half)slices. 'How do you know that'? asks the teacher. Peter thinks it is very easy, you cut each piece in the middle and that makes it double.

When the children have finished eating their fruit they are asked to take a small card each, on which they are asked to illustrate how they have divided their half apple this time. In Figs. 3.9a–d we will show all the different ways in which the 18 children illustrated numbers of slices.

There are children who illustrate each slice by drawing them, those who give each slice a number and write 1, 2, 3 etc. Others illustrate the slices with just a

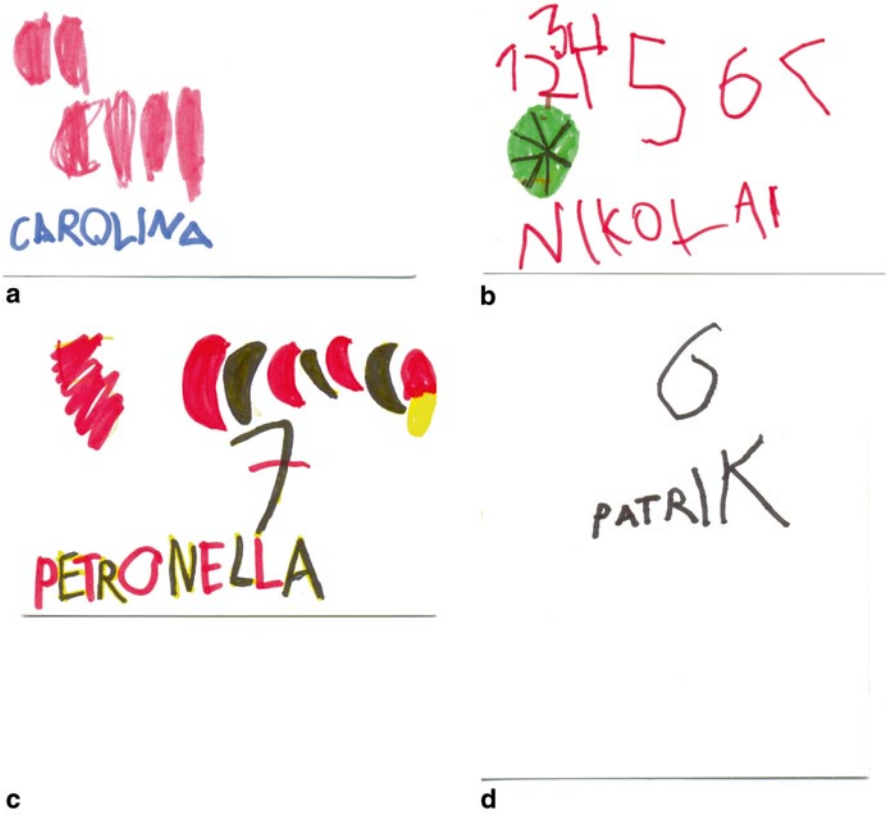

Fig. 3.9a Carolina. **b** Nikolai. **c** Petronella. **d** Patrik

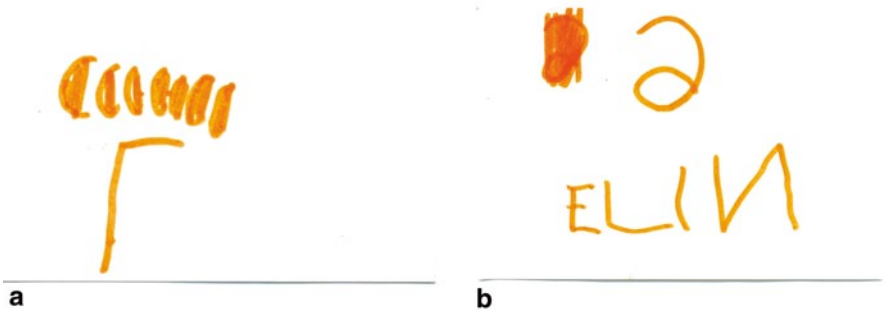

Fig. 3.10a Documenting dividing before eating the fruit. **b** Documenting dividing after eating the fruit

line (a mark) and then write down the number with the corresponding symbol, and finally, children who have developed an understanding of the cardinal number principle and only write the digit which indicates the number of slices in which they have chosen to divide their apple half into. The variation found among the children in the group is the same as the variation among individual children when each and every one of the children is followed up over time.

In order to let the children meet new challenges, the teachers sometimes change the conditions for the documentation and let the children do their illustrations before they divide the fruit (Doverborg and Emanuelsson 2006). They will then have to ponder over and try to imagine how they want their fruit divided. For many of the children it is easier to illustrate the number with a symbol (digit) after they have had their fruit divided into slices, as they can see the slices and count them. It is more difficult for them to just imagine the number and try to illustrate it. This becomes obvious in Elin's (5.9) documentation (Figs. 3.10a, b).

We have seen examples here of how children also manipulate with objects to make their thinking visible. It is important that young children have materials to work with, but this is not enough, they also need teachers who communicate with them about the concrete material and, not least, use adequate mathematical notions. Being skilled in mathematics also requires repetition, that is, that the children get the opportunity to work on the notions and ideas over and over again. Lundberg (2010) claims that it takes about 5000 hours of reading to become a skilled reader and, of course, it also takes a long time to become skilled in mathematics.

Discussion

Vygotsky (1978) claims that the social context of learning constitutes a critical component of the way learning may be understood. If we here look back at the children's working process and the teacher's actions, as well as the way children's learning has been evaluated by the researcher, we have to bear in mind that the research has been carried out in Swedish early childhood settings. Although the quality of the pre-

schools in Sweden may also vary (Sheridan et al. 2009), there is a tradition of child-centeredness, well-educated teachers and a long-established policy of integrating education and care (UNICEF 2008). With this background or context in mind, we will now return to the four main areas we raised questions about in the beginning of our chapter and discuss this in relation to the studies presented. Under each heading related to the studies, we will also draw conclusions for practical application.

First of all, we will remind the reader of the fact that this chapter is based on four different studies of our own. They differ in their approach. Some are more descriptive (about trolls and documentation) where practice has been made visible through analysis, while others were intended to specifically develop certain notions among the children (cf. Star cards). There are also pure evaluation studies, where children's different understandings are traced (Children's early learning). The results of such studies have implications for how we talk about children and their learning and development. Our results clearly show both a development trend and how children of the same age may have developed different understanding of mathematical notions. It is important to bear in mind that many of the children in the studies referred to are below 3 years of age, which means they are in the process of developing their language, implying that cultural aspects become complementary to biological age. Nelson (1996, p. 325) expresses this as: "It is during these years that biology 'hands over' development to the social world." Another researcher (see Feldman 1994) talks about learning and development in early years in similar ways.

The Fundamental Aspects of Mathematics can be Found All Around Us and can be Used to Develop Children's Early Learning in this Area

In both the project about young children working with the theme of trolls and in the project where everyday activities, like lunch and snack-time are focused on, we can see how the teachers grasp and use what is there right in front of them in order to direct children's attention towards mathematical notions and problems to solve. This means that the everyday life should be considered to be the curriculum (Pramling Samuelsson and Asplund Carlsson 2008), that is, the education of everyday life, which may be compared with, for example, Montessori's view (1989) where education is focused on materials, or Reggio Emilia which is focused on the education of listening (Rinaldi 2001), or High/Scope which is focused on a specific structure (Schweinhart et al. 1993). It is not a question of saying that something is good or bad, but of seeing what ideas underlie the different curricula. This does not mean that Reggio Emilia or developmental pedagogy do not use materials like Montessori, but the main focus—the figure—is on something else, on communication and everyday life, respectively. At the same time, one could say that Montessori used everyday objects when teaching children to polish their shoes, but this was not about phenomena that could be understood as in developmental pedagogy. This

means that in every preschool approach (program) some ideas are the so-called figure, while others may constitute the background and vice versa.

The education of everyday life could be viewed as a main feature of developmental pedagogy, based on children's experiences (actions) and what children experience (mind) (Pramling Samuelsson 2011). Education in the early years is not about subjects, although here we deal with aspects of early mathematics, but about phenomena in the world around children that make sense to them. The whole idea of didactics in the early years is that children should become aware of things around them. In this process the teacher can help to focus children's attention and give them opportunities and support to enable them to discern aspects of mathematics that will later be integrated into their notion of mathematics as a school subject or as a means of solving problems in life. Mathematics does not just arise of its own accord but its various aspects can be observed in everyday life and assimilated even at an early age. Let us recall Hjalmar in the introduction to this chapter; he handled objects in a kitchen-drawer in a way that we as adults could interpret as basic mathematics. However, a teacher (or other skilled person) is needed to help the child to assimilate these new notions by talking with him about what he was doing. This means the adult in the child's world must be able to see the mathematical principles that are embedded in everyday life to be able to draw the child's attention to them.

Communication and Interaction as Key Features for Learning Mathematics

In the different studies we have seen how the teacher puts the children's actions into words, for example, both during the theme work with the trolls and when working with star cards. She also asks questions in order to encourage children to think, act and draw conclusions, which they have to verbalize. The strategy is the same when they work with dividing apples into slices. The teacher is active in communication and this helps the children to also become active partners (cf. Pramling and Pramling Samuelsson 2010).

Also in the data production the focus is on interaction and communication. Why? Because children learn by being active in solving problems. Young children need support or scaffolding from more able persons to show their skills and knowledge (Vygotsky 1978). This also applies to evaluating children's knowledge or skills. They need support. Evaluation in this perspective means that the child has the possibility to learn in the situation that the adult is evaluating. In another study (Pramling Samuelsson and Pramling 2009), we saw how a young boy was asked to represent two animals on a piece of paper. From the beginning he obviously believed this meant drawing the animal on paper, but during the communication he suddenly realized that he could make two lines representing the animals on the paper instead. This means that evaluation of children's knowledge is a "touch down" in time, that is, changeable and temporary. If we apply this argument to the situa-

tion where young children's knowledge of small and large or sorting teddy bears appears, we used communication and interaction to give each child an opportunity to expand their ideas as far as they could. This means that we simply do not know if they knew the answer or if they developed it during the communication. The point here is that we can say: "this is as far as we could get with each child under the conditions provided". And is this not what education for young children is all about? Being able to perceive basic aspects or notions of mathematics in meaningful situations, around which to communicate, ask questions, argue, and reflect.

How Visibility, Concrete Objects, and Teachers' Skills in Mathematics and Teaching Young Children Play a Decisive Role in Children's Learning

Young children need concrete material to manipulate in order to make sense of different things. This principle applies to all teachers in early childhood education. Having concrete materials is, however, not enough for children to make them understand if the intention is to get them to construct knowledge and be active in their own knowledge formation (Gärdenfors 2010). That is to say that children need to develop an understanding about knowing why, or knowing how one knows (metacognition) (Pramling 1983, 1996). A preschool that only activates children to handle and experience objects by themselves would be considered to be of low quality today (Sheridan et al. 2009). Children also need challenging and communication in order to learn to argue and formulate their own explanations and draw their own conclusions.

In order to create learning opportunities where a specific learning object is focused on and where children's ideas are challenged, the teacher needs two kinds of skills and knowledge: (1) *To know what early mathematics could be*, which we have seen in many studies that they do not (see e.g. Doverborg and Pramling Samuelsson 2006; National Research Council 2009). In this chapter, the learning objects focused upon the concept of numbers, measurement, shape and children's ability to orient themselves in space and time. (2) *To know how to communicate and challenge children* with tasks that interest and give children a meaning in their everyday life (Ministry of Education and Sciences in Sweden 1998). This includes not only getting children to talk and reflect and share their ideas but also knowing how to ask questions and communicate in order to strengthen children's understanding. One may call this didactics for young children (Pramling Samuelsson and Pramling 2008), that is, both how there could be a relevant content (learning object) and a pedagogy (learning act) that become intertwined and integrated into a whole. This is didactics based on children's own experiences and the meaning they themselves can produce about different aspects of early mathematics.

Although two of the main features of developmental pedagogy are communication and interaction, we have to bear in mind that children cannot necessarily

articulate what they know. As a teacher or researcher, one also needs to be able to interpret children's bodily expressions (see Chap. 7). Teachers can, however, foster progression from intuitive to conscious knowing in children's minds, by being sensitive to what interests children and their experiences.

Variation as a Resource for Making Mathematics Visible to Children

In some of the projects, we have seen how the teacher uses variation to make different aspects of early mathematics visible to children. For example, when children worked with the troll theme, we saw how a variation was ensured by the stones having different sizes. All the children in one of their normal daily activities had to take two stones to make them into one troll, one whole. The trolls they constructed differed in size, height and width. If all the stones had been the same size, the variation would not have been visible. In the same way, the huts of each troll family differed in size. If all the families had had the same number of members, the huts would not have varied in size and the opportunity to bring this fact up for discussion would have been missed.

In the group that worked with the star cards, the children had not experienced number and they were only given cards with 3 stars all the time. Numbers have both to vary and be invariant for children to be able to experience and learn the concept of number. The number 4 can, for example, vary in terms of what is counted, resins, cars, socks, etc., but four things of the same kind such as stones can differ not only in size, length and weight but also in other ways such as color, texture and so on. This provides endless opportunities for discussion.

Using variation as a resource for children's learning can be viewed both from the teacher's and from children's perspectives. Variation is necessary for children to be able to discern one thing from another and reach an understanding about something. What does not vary cannot be discerned. If the bears (we saw in one of the studies) had not varied in size and color, they could not have been used for evaluating children's understanding of categorizing. Not all the children were able to discern these features yet, but most probably they will with more experience. What we can say is that this is a task that most children do engage in both at home and in early childhood education, since putting away their toys belongs to everyday life.

Variation is vital to children's learning, a variation that children partly achieve themselves when they try to solve different tasks. Without variation they will not be able to make sense or learn, since the differences will not be visible. How can teachers use this key factor in children's learning? As we understand didactics, the teacher could use variation as a resource for designing learning situations. In a learning study, Palmér (2008) designed a situation intended to teach young children division by varying a number of situations where division was focused upon in many different ways. The reason for focusing on division was that many researchers have

shown earlier how children believe division to be a question of sharing equally and fairly, that is, they interpret it as a question of morality (Ahlberg 1994; Doverborg and Pramling 1999). To be able to use division in a mathematical task, it was necessary to develop another idea. For example, in the task divide equally or unequally, the material used had to be kept invariant, or for dividing equally or unequally that numbers had to be kept invariant. What was kept invariant could be what should be divided, the numbers that should be divided, or the amount to divide it into. Different objects have different qualities for being divided, for example, cookies can be cut in the middle, but buttons cannot. What was kept variant was to divide equally or unequally. Palmér, however, first staged a series of occasions where children should divide equally, which made the children's perceptions visible to the teacher so she could create new situations and understand their meaning-making.

In the different studies, we have shown the importance of children meeting teachers with both didactic competence and knowledge of what mathematics for young children can be. Didactic competence includes utilizing everyday life and children's experiences. Everyday life is full of challenges where play and learning are intertwined, but also possibilities for documenting and expressing themselves by different means. In some of the studies described here, the children have handled different materials, made drawings, talked and discussed with peers as well as with teachers, as well as using both informal or formal symbols in developing their thinking and understanding in mathematics.

In this chapter we have described the didactics that is based on a developmental pedagogical perspective of early mathematics as an educational encounter and firmly established within the Nordic context of early childhood education and research in the field.

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Chapter 4
Opening Doors for Learning Ecology in Preschool

Susanne Thulin and Gustav Helldén

Introduction

```
Chris:    Here is an animal
Eddie:    No, take it Caroline (the teacher)!
Cassie:   It's a silverfish, a silverfish!
Chris:    A worm.
Eddie:    No, it was something that long, with a lot of legs
          (shows with his hands).
Teacher:  Yes, look! (finding the animal in the stub)
Cassie:   It is a silverfish!
Teacher:  Look!
```

The children have found a millipede in a stump. They reveal that they had previous experience of a primitive insect, a silverfish in a kitchen or in a bathroom. Could it be a worm? They talk about the creature with fascination and curiosity.

Different content areas necessary for a child's conceptual development are mentioned in the Swedish National Curriculum for Preschool (Ministry of Education and Science in Sweden 1998). One such content area concerns science. This has not always been the case during the historical development of the preschool. First, the act of learning and learning methodologies has taken precedence over discussion about the content that we assume to be a part of children's knowledge (Pramling Samuelsson and Asplund Carlsson 2003). A possible explanation for this is that preschool teachers lack relevant knowledge about the content area of emergent science in the same way as it is argued that teachers have not enough knowledge in early mathematics learning (see Doverborg and Pramling Samuelsson's chapter on early mathematics, this book). Therefore they feel insecure concerning how to deal with practical work, and the teachers' attitudes influence their work together with the children. Still another reason could be the way in which preschool teachers look upon their mission, and whether conceptual development within different content areas is given space in preschool (Fleer 2009; Thulin 2006, 2008; Thulin and Pramling 2009). In this, there is a hidden concern that preschool could become

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too similar to later schooling. It is hard to say what this implies but it could reflect a concern that preschool may be taken over by schools' traditional way of organising teaching, instead of giving space for playing, creative activities and thematic/multi-disciplinary work. Subject matter could appear to be simply too difficult, boring and serious for children in the early years. In the light of this background the purpose of the research presented in this chapter is to describe and analyse how preschool teachers and children address content matter within a science context.

Everybody who has had the experience of meeting young children can certainly recognise a curious child who wonders what happens, perhaps pointing at a lamp with a questioning expression saying: "Lamp?" or shouting when a cat comes running: "Doggy!" Children test new experiences in comparison with old experiences. They try to order and sort out their impressions and organise their understanding. Research has also shown how learning happens. Because the child's consciousness is directed towards something, their curiosity is aroused, new experiences are compared with previous experiences, and the child's frames of references are developed. When we reflect upon this, this view of learning appears to be fairly natural and something that is always going on in children's lives from birth and, hopefully, for a lifetime. With this as a point of departure, we agree with what is said in the introduction chapter of this book and mean that children's learning also is an obvious part of the work of preschool. The big question is therefore "what should children learn in preschool?" What kind of experiences shall children meet and what kind of knowledge domains shall be opened for their interests?

It is important that educators do not make the mistake of taking what is appropriate content for primary children and just water it down in order to use such content in early childhood education. Instead, educators should choose appropriate content that in itself is suitable to be used as the starting point for early childhood science education. Even if the question concerning the work within a limited content area in preschool can in some respects appear to be controversial, we argue that there should be a learning environment that could in a natural way take advantage of and open the doors to children's curiosity about scientific phenomena.

Children are constantly having experiences of the world around them that challenge their curiosity and ability to understand their world, including scientific phenomena. From the earliest days of their lives children have developed ideas about the natural world. For example, they experience what happens when they drop or throw a ball and how different objects float or sink. Children develop ideas about the world around them from experience of toys, water, light, shadows, animals and plants. In other words children have a lot of experiences that can be used as points of departure for science education. The field of science has always been exciting and stimulating. It challenges the child's curiosity and invites her to investigate the phenomena through creativity and experimentation involving all the senses.

It has often been assumed that young children are less effective learners although we know that a child's first 5 years represent an immense growth of both linguistic and conceptual capabilities. Also some science educators argue that science is inaccessible to young children implying actually that it is not worth spending much time on (Chaillé and Britain 2003). Based on an extensive review of existing research

literature, Eshach and Fried (2005) express a completely different opinion, and formulate a set of explicit justifications for science education in early childhood. They use the following question as a point of departure. Why should children in preschool or in the first years of elementary school be exposed to science?

As a result of the review, Eshach and Fried (2005) give six assertions that support the idea that even small children should be exposed to science. Firstly, they suggest that children naturally enjoy science, and secondly that early exposure to science develops positive attitudes towards science. A third reason for early exposure to scientific phenomena is that it leads to a better understanding of scientific concepts studied later in a formal way. Further Eshach and Fried argue that the use of scientifically informed language at an early age influences the eventual development of scientific concepts. They also suggest that children can understand scientific concepts and reason scientifically and that science supports the development of scientific thinking.

For many early childhood educators, an emphasis on living organisms and ecology is a natural way to bring science into the activities in the preschool. Discussion of, for example, conditions for life and growth among plants gives many opportunities to experience and talk about the properties of the non-living environment including the nature of water, air and light. In Sweden, the seasonal aspect is of great importance because the children feel the changes throughout their surroundings, in the neighbourhood of the preschool.

The children often have personal relationships with the organisms that they come in contact with during, for example, studies of conditions for plant growth. The second author experienced this when he carried out an interview sequence with children about conditions for plant growth in small transparent plastic boxes sealed with a glass cover on the box. Two children were quite upset when the interviewer told them that they should put plants in sealed boxes. One child took a deep breath herself and said: “Then they don’t get any air. The plant can’t get any oxygen and it can’t grow. You can’t, the plants can’t breath. And we can’t water them”. The children compared their own breathing with the plant’s breathing. Thus they had developed a feeling for the plants’ survival. They described the living organism as the “end station” for matter and not as a part of a cycle. The interviewer promised the children to take away the glass cover if the plants could not grow inside the sealed box. The children’s consideration came to be a resource in their study. Their natural curiosity spurred their interest in conditions for life and moved the children towards an understanding of a scientific process (Helldén 1992, 2005).

The two children’s responses to the suggestion to grow plants in sealed terraria indicate that they feel themselves as a part of nature. Depending on their understanding of conditions for life in a sealed environment and probably as a result of previous experiences of plant growth, the children thought that the plants could not get any air and water. This is not a passive observation but an observation that includes sensitivity, alertness and awareness of different qualities of the world. It is an active observation of the natural world and a result of a sense of wonder that children naturally have (Carson 1965). Instead of talking about observation, we can talk about participation. Participation means that one is in some way involved with

what one is observing, like the two children's feeling when they were confronted with the suggestion to grow plants in a sealed terrarium (Chaillé and Britain 2003).

Ecology Deals with Relationships

We can define ecology as the study of organisms in relation to the surroundings in which they live. These surroundings are called the environment of the organism. This environment consists of different components, including other living organisms and their effects, and purely physical features such as climate and soil type (Chapman and Reiss 1999).

When children are studying conditions for growth, they are studying how different ecological factors influence plants' growth. The child can choose to grow plants under different conditions of temperature, moisture and light. Depending on the child's previous experiences of plant growth, their interpretation of the result of the investigation can be quite different compared with a scientific explanation. A couple of children investigated the importance of light for successful growth of garden cress. They grew the cress on wet paper on the bottom of two glass jars with covers. One jar was placed in a dark cupboard and the other jar on a table near a window. After a week and a half the children compared the growth in the two jars. The cress that had grown in darkness in the cupboard was yellowish and 3–4 cm high, while the cress in the jar on the table near a window was green but only 1.5 cm high. The children interpreted the result that the plants preferred to grow in darkness because the plants were twice as high compared with plants that had grown in the jar on the table. They thought that length was a sign of wellbeing. According to their opinion, a lack of green colour did not mean a disadvantage.

A group of children had discovered some woodlice and millipedes under the bark of a partly rotten birch trunk lying on the ground. When the children lifted the bark carefully, they could see the woodlice creeping deep in under the bark. They talked about the reason why the creatures crept deeper under the bark. After a while, they suggested that the woodlice and millipede preferred the more dark and humid environment. In both the investigation of the importance of light for growth of garden cress and the one about the woodlice's preference for a dark and humid environment, the children worked with ecological issues. Thus they studied the relationships between the organisms and their physical environments.

Ecology also concerns the organism's relation to other organisms. There is a competition between individual organisms of the same species for food and space as well as between organisms belonging to different species. Some organisms are food for other organisms. Rabbits eat plants of different kinds, and rabbits can be food for foxes. This can be illustrated as a food chain. The grass, the rabbit and the fox are also parts of a cycle. When the fox dies, its body is decomposed, and nutrients from the decomposition will become part of the soil and absorbed by the grass. The grass can be food for rabbits, and a cycle is formed. By using pictures of the organisms

involved in this cycle, you can talk to 5–6-year-old children about the relationships between organisms.

Pramling (1994) carried out a study of 6-year-old children's learning about an ecological cycle. Four groups of children participated in an interactive presentation of a cycle at a museum. During a follow-up interview with each child, the children were given five pictures representing a bird, bugs, a worm, leaves and soil. At first, the children were asked to talk about the pictures. Children who did not spontaneously talk about what happens were asked what the animals could eat. As a result of this follow-up interview, it was possible to identify four different levels of understanding. One category of understanding comprised children who had understood inter-dependence of different components in the cycle. Another category of children understood that some components were food to somebody else as parts of a food chain, but they did not describe the inter-relationship as a cycle. A third group of children only talked about separate fragments of a food chain. A fourth group of children talked about organisms in the cycle without mentioning the relations between the different parts of a cycle. One group of children had previously worked on the concept of food chains and most of these children could talk about a food chain (Pramling 1994). It was obvious that the didactical approach had influenced the children's possibility of understanding the cycle.

Pollination is an example of a mutual interdependence in nature between plants and insects. There are many opportunities to show children how different kinds of insects visit flowers to get nectar or pollen and quite often both nectar and pollen. These opportunities can include flowers in a garden or in a park or in a meadow. The fireweed (rose-bay willow herb) is a common plant that invades cleared land and edges of woods. It flowers in late summer and early autumn, attracting different insects, that children easily can see. When we talk to children about the relationship between plants and insects, there are obvious possibilities to give other examples of the interplay between plants and animals. Children have an astonishing ability to discern different life-forms in nature. It is important to give them time to talk and reflect about their observations, in order to develop their feeling and fascination for the diversity of organisms (Helldén and Helldén 2008).

Children in early childhood start to develop an ability to read nature by discerning what organisms are typical for different environments, such as fungi, plants and animals, but also concerning environmental factors that influence the organisms, for example, the water flow in a stream, the shadows in a deciduous forest in summer or the lawn in a park (Magntorn and Helldén 2007).

During the Earth Summit in Rio in 1992, a convention on Biodiversity was signed by 157 countries. Biodiversity concerns the variability among living organisms in all ecosystems on earth. Also, in the proceedings of the International Conference on Education for Sustainable Development in Johannesburg in 2002, it was argued that people need to develop "an understanding of, and ability to apply the concept of biodiversity as the diverse and interdependent composition of life forms in an ecosystem that is necessary for sustaining flows of energy and materials indefinitely" (UNESCO 2004).

As previous research has documented, children's early experiences of biodiversity are of great importance for their future appreciation of the variability among plants, fungi and animals in nature (Helldén and Helldén 2008). By letting a child experience biodiversity of different complexity, she develops preparedness for the future and an ability to discern changes in biodiversity. Such experiences in childhood are important for the development of a person's future environmental sensitivity (Chawla 1998). These experiences can also be a point of departure for the development of life-long learning about the necessity of preventing an impoverishment of biodiversity. Barker and Elliott (2000) argue that children are more receptive to new ideas than adults and can influence the behaviour of the adults they come into contact with.

For several years, there has been a growing awareness that education for a sustainable future need to play an important role in the life-long learning process that starts in early childhood. An important part of such an education concerns knowledge about basic ecological processes of conditions for life, growth and cycles in nature as well as experience of the diversity of different organisms.

In the report from the UNESCO conference in Johannesburg 2002 on Education for Sustainable Development, it is argued that education is the most powerful instrument we have for bringing about the changes required to achieve sustainable development (UNESCO 2004). We suggest that in this context, early childhood education has a key role in supporting children's learning of ecological phenomena and that such learning should serve them well in the future.

By experiencing different species of butterflies, the child learns to discern critical features that are characteristic of organisms we call butterflies in comparison with other organisms. Similarly, the child experiences other groups of organisms such as flowers, beetles and birds. Even here the child can discern both the critical features of each group and the variation of species within the different groups of organisms. Thus variation is a source of learning since it gives the child the prerequisites to discern and experience biodiversity, and develop preparedness to meet new situations. We do not know what children will experience in the future. Therefore we need to give the children a range of experiences that will equip them to meet future needs (Pramling Samuelsson and Asplund Carlsson 2003). We have every reason to pay attention to the importance of giving children experiences of ecological phenomena in early childhood education.

Children's Learning and Participation

Children's learning can be discussed from different perspectives. In developmental psychology children's learning and development often are linked to and discussed in terms of maturity and age (Piaget 1964). However, new research has shown that what and how children learn largely depends on the environment and the quality of the interactions with others (Sheridan et al. 2009). Pauline Gibbons expresses

it thus: "in a very real sense, what and how we learn depends very much on the company we keep" (Gibbons 2002, p. 8). From this perspective children are seen as active in their own learning and in the development of their understanding in communication with others.

Children are born with a desire to understand the surrounding world (Sommer et al. 2010). Prerequisites for learning and development are created in the environment and in relations to others, children and adults (Bruner 1996; Marton and Booth 1997; Pramling Samuelsson and Asplund Carlsson 2008). But it is the individual child who creates her own meaning and understanding. From this perspective children's development and learning had to be understood in the light of the present culture and context (Rogoff 2003). In the following the aim is to explore our theoretical framework. For this reason we turn to developmental pedagogy[1] and take our point of departure in research which has focused on children's learning in preschool (Sommer et al. 2010). Our special interest concerns children's learning about a specific content, in this case of an ecological phenomenon. What can then be said about children's learning from this approach?

Developmental pedagogy has its roots in phenomenography (Marton 1981; Pramling 1983). Three didactic core principles for developmental pedagogy can be derived from phenomenography (Pramling Samuelsson and Mårdsjö Olsson 2007). These principles are (1) to create and catch situations around which children can think and talk, (2) to have children think, reflect and express themselves verbally and in other ways and (3) to support diversity of children's ideas. Children's own experiences are seen as an important starting point in the learning process. Individuals meet the surrounding world with different experiences. Those experiences are also of importance for how the world, different situations or phenomena are understood. Because of different experiences children can get different understanding of the same thing. Within developmental pedagogy these variations of understandings are seen as important for learning practice (Marton et al. 2004; Pramling Samuelsson and Asplund Carlsson 2008). It is in the divergence between different views that development is possible. Learning is seen as a change of perspective. Research from developmental pedagogy shows if it shall be possible to make any change in a child's way of experiencing and understanding, for example a phenomenon the child at the same time has to be aware of different ways to relate to this phenomenon. The child's own experience will often be visible if it can be exposed together with others. Developmental pedagogy emphasises the importance of the expectations that children meet in their environment from other children and from adults, and the ways of interaction and communication that are offered (Pramling Samuelsson and Mårdsjö Olsson 2007). Communication and dialogue are seen as necessary for the learning process. Pramling Samuelsson and Asplund Carlsson (2008, p. 631) express it in the following way: "Both the child and the teacher must be involved in the process". Teachers must encourage the child to put words on his

[1] The name developmental pedagogy stands for a pedagogical approach aiming at a development of children's values, skills and understanding as knowledge formation (Sommer et al. 2010, s. 163).

or her experiences, and on their possibilities to think of, reflect upon and express their ideas, "to make the invisible visible for children" (Pramling Samuelsson and Asplund Carlsson 2008, p. 635). Research about pedagogical strategies has shown that the quality of the verbal interaction between adult and child has an impact on the development of children's learning (Sheridan et al. 2009; Siraj-Blatchford et al. 2002). Both children and teachers shall be involved in a mutual dialogue with the content in focus. Those learning situations can be characterised as "sustained shared thinking". Even Vygotsky (1934/1986) put forward the importance of language and interactions. He meant that the development of conceptual understanding had to be linked with reality and also had to be studied in specific contexts. According to Vygotsky (1934/1986) the development and understanding of a concept is not constant, it changes in line with extended experiences and new understandings. Vygotsky (1934/1986) also pointed out that in the moment a new word is learnt the child is never at the end of a development, but rather at the beginning. When you as an individual have learnt a new word, starting to use it can be taken as a sign of also wanting to understand the meaning of it. Dewey (1956/1990) asserted that language could be the most important development resource for children's learning.

When talking about the what and how aspects of learning in developmental pedagogy two different concepts are used. "The object of learning" is the concept of the what-aspect of learning and is used when a content in focus is discussed or dealt with. When the how aspect of a learning situation is discussed the concept of "the act of learning" is used (Marton and Booth 1997; Pramling Samuelsson 2011). When we use these concepts in the following text the reader can relate to these definitions.

The Empirical Study: The Preschool, Settings and Participants

The thematic work about "Life in a tree-stump" starts. Teacher and children are standing round a table, on the table there is a big black sack. Inside the sack there is a tree-stump with decaying leaves, soil and moss from the woods. The teacher starts to open the sack with help of the children.

```
Teacher:  It is a bit exciting. Shall we turn this one upside
          down now?
Eddie:    Leaves!
Alex:     Leaves and moss.
Teacher:  What?
Eddie:    Leaves and grass!
Teacher:  What?
Alex:     Bark
Teacher:  I feel there is a lot of bark (She takes the stump
          out of the sack.) Do you think what I believe this
          is? There is a lot of bark from a tree.
Alex:     I knew that it was something like this.
```

```
Teacher:  What kind of thing can this be? A small tree, a
          small piece of a tree?
Eddie:    Yes.
Teacher:  I think it is a stump.
```

In this chapter our aim is to give some examples of what emergent science can mean for preschool practice. For that reason we use results from a previous study with the purpose of studying how the teacher and children communicate about scientific phenomena (Thulin 2006). Communication here means verbal speech. The aim of the study was to describe and analyse how preschool teachers and children address content matter within a science context. The analysis of the study was focused on the object of learning (the what aspect)—*what are they talking about?* and on the act of learning (the how aspect)—*how are they talking?* The study was conducted at a preschool with three teachers and 21 children, 10 girls and 11 boys (aged 3–6 years). The preschool is located outside a medium-sized Swedish town with citizens of different national and socioeconomic backgrounds. Six of the 21 children do not have Swedish as their first language. The preschool was studied using video observations over a period of two months, while working on a theme about "life in a tree stump". The preschool teachers' intention with the theme was to enable the children to grasp the idea about the great diversity of life in a tree stump. At the beginning of their work the teachers had put big black sacks on the tables. Children and teachers sat around the tables, one teacher said: `Here is a big secret. It is almost as if Santa Claus has been here. Do we dare to open the sack?` With these words the work began. In the next step children and teachers opened up the sacks, and there they found a real tree stump from the woods, and the journey of discovery started. At the beginning of the thematic work, the children were free to discover life in the tree stump themselves. Later their attention was focused more on the small animals and especially on the woodlice they found in the stump. Teacher and children together decided to find out what kinds of food the woodlice prefer to eat and designed experiments in pots with woodlice and different kinds of food. Activities with teacher and children interacting were videotaped and later transcribed and translated to English, focusing on the verbal dialogue. The video data consist of six video observations (each lasting 30–60 min), in totally four and a half hours.

The aim of this study was to describe and analyse how preschool teachers and children address content matter within a science context. The results show a great variation of different conversation themes. Three overall different themes were identified: (1) talking about the leaves that they found in the stump, (2) talking about the tree stump itself and (3) talking about the animals that they also found in the stump. Our aim is not to put forward and discuss the whole study in this chapter but to report on some of the results. By doing so we hopefully can show what emergent science and especially what ecological phenomena can mean for preschool children and for the didactic approach in preschool practice. In the next part we are going to show one of these conversation themes. Let us open up with talking about animals in the tree stump.

Animals in the Tree Stump

```
Teacher:  Do you know what a stump is?
Lisa:     Yes
Elvin:    This is a stump (points at the tree stump).
Teacher:  What is a tree stump (takes out the stump of the
          sack)?
Chris:    A broken tree.
Eddie:    If you chop down a tree, there can be a bit left.
          That is a stump.
```

The animals in the tree stump were a great talking theme for the children. Of special interest were the woodlice. There were a lot of them in the stump. The utterance above is an example from a discussion between the teacher and some children about what a tree stump is.

When the children and the teacher were talking about life in a tree stump, three different talking themes were visible: (1) Life conditions of animals, (2) What happens to the food, (3) Animals' appearance and behaviour. In the following part we want to present results from the study. We have chosen excerpts that in a way illustrate what science and especially ecology can mean and how it can be discussed with preschool children when talking about animals in a tree stump.

(1) Life Conditions of Animals

Life conditions of animals were of great interest when the teacher and the children examined the tree stump. There were a lot of small animals found in the stump and especially a lot of woodlice. The food of the woodlice was of special interest. In order to find out what the woodlice prefer to eat, experiments in some glass jars with woodlice together with different kinds of food were designed and followed up over time. The children suggested that leaves, soil and moss could be food. These experiments led forward to a discussion that even other conditions than food were necessary for the animals. The children and their teachers talked about the following questions: What does a woodlouse eat? Why is there a need for water in the jars? Where is the air in a jar? Let us start with an example from the conversation about the food of the woodlouse.

In the following example the teacher and the children have decided to design an experiment to find out what a woodlouse eats. As a first step the teacher put a bit of wet paper in each jar.

```
1 Teacher:  First, do you know what? We take some water so
            there is some water here (in the jar) because all
            animals need to drink.
2 Teacher:  Now we are going to find out what they eat and….
3 Lars:     How.
4 Teacher:  How they eat. We are going to put leaves in one
            jar as you said, and moss in another. (The teacher
            takes a jar that Otto holds)
```

```
5 Lars:     Yes.
6 Teacher:  What else can we take?
7 Lars:     Soil.
8 Teacher:  We can take soil.
```

In this way experiments are designed. Woodlice and different kinds of food are put in different jars. Teacher and children go on talking to each other. The teacher says: `A woodlouse we have here.`

```
9 Child:    I wonder what they eat?
10 Teacher: Who?
11 Lars:    This one. (He shows Disa).
12 Per:     I think they eat bark.
13 Lars:    Yes.
14 Teacher: Shall we put it (a piece of bark) down (in the
            jar) and check?
```

Then teachers and children talk about food of the woodlice. They talk about what the woodlice eat and how they eat. Different hypotheses with implications for what the children shall try in each jar are discussed. The example above shows how the children are focused on the situation. Lars for example (in turn 3) filled in the teachers talk and said that it is also the how aspect that they should investigate. The teacher moves the dialogue forward. On one hand she talks to the children about what to do like in turn 2: `Now we are going to…`, and on the other hand she confirms the children's talk such as in turn 8: `We can take soil.` It seems as if the children know what's going on. Their awareness is directed towards the content, trying to find out what and how a woodlouse eats. In the end of this excerpt the children (turns 9 to 13) interact with each other. They talk about what they think the woodlouse is going to eat and Lars seems to care for Disa and shows her a woodlouse (turn 11). The teacher follows it up and suggests that they try their ideas (turn 14). The children seem to be engaged and to enjoy the situation, the "expedition with new discoveries" has started.

One issue for the designing of experiments is to create a good environment for the woodlice in the jars. Woodlice need water and a damp environment for living. Therefore the teachers put a piece of wet paper in each jar. In the following situation a teacher asks Eskil what he thinks about putting wet paper in the jars with woodlice. Eskil answers: `So that they can breathe.` The teacher confirms this answer by repeating it: `They need it so they can breathe.` This excerpt focuses on a short dialogue about the woodlouse' need for water in the jar. The teacher challenges Eskil and asks what he thinks about that. Eskil then presents an idea, that has to do with the woodlouse breathing. We do not know exactly why Eskil says this. We can only speculate, but it seems like he has some idea about a connection between the water in the jar and breathing. The same idea is formulated by Sam in the next sentence, but he takes the explanation a step forward and says: `And there is a damp paper, so that can be the air, so it becomes water so that is water`. Sam here talks as if it is a kind of cycling process going on in the jar; first from water (the *damp paper*) to air and then from air to water again.

When designing the experiments with the woodlice in the jars there is a lot of talking among the children and teachers about the air in the jars. Some children are worried if the woodlice have enough air in the jars. In another case there are leaves in a jar and Lisa expresses a concern that there are too many leaves. Lisa: They (the woodlice) don't get any air when there are so many leaves. The teacher asks Lisa: Don't they get any air? And Lisa answers: No I don't want any leaves in there. This example shows us that Lisa materialises the air in a way that the leaves take space from the air. A boy, Eskil, is also worried about the health of the woodlice. In one situation he asks the teacher to take off the lid from the jar so the woodlouse can get air. The teacher asked if they do not have enough air. Eskil then wonders: Where is the air then? (He holds up the jar and looks in it.)

It seems like the children are engaged in thinking about the animals' life conditions. They reflect and ask questions about the food and the animals need for air and space. The children also present different kinds of explanations and comprehensions about the ongoing processes and put forward hypotheses.

(2) What Happens to the Food?

When teachers and children talked about this phenomenon they first related to the tiny black dots found in the jars and then to a woodlouse as a part of a food chain. It was difficult for the children to see how a woodlouse eats but the teacher directed their attention to small black dots in the jars. At the beginning some children thought the dots were dirt. Let us look at one example.

The teacher starts saying: These black dots what is this? (The teacher looks into the jar.) Ella answers that it is dirt.

15 Teacher: What kind of dirt?
16 Ella: Yes, what you have on your self.
17 Teacher: From where did the dirt come?
18 Ella: Well, that they are down in the soil of course.

Ella's explanation (in turn 18) sounds logical, and perhaps she compares the situation to her own experiences of working with soil. In the next excerpt Ville opens up another explanation about the black dots in the jars. Ville thinks it is excrement and says: It is number two. The teacher confirms Ville's saying: Number two, that comes from… when they eat leaves.

In the situation that follows the teacher and four children discuss the dirt or the excrements in the jars and the role of a woodlouse in a food chain. The teacher starts looking into Eskil's jar.

19 Teacher: Oh, how dirty it is here Eskil, why is it so dirty in your jar?
20 Eskil: (Looks down into his jar) Because…

The teacher turns to all four children and asks them what they think about why it is so dirty in the jars.

21 Teacher: What do you think it is, why is it so dirty in your jars?
22 Ville: It is number two.
23 Fia: It is because they have eaten.
24 Teacher: Is it number two?
25 Eskil: No, if they have eaten… (someone interrupts him.)
26 Ville: They crumble.
27 Fia: They must have eaten a lot on that leaf. (She points at a fibrous leaf that Eskil holds.)
28 Teacher: Yes they have, so you mean that it is number two that came out.Do you believe that too Eskil?
29 Eskil: Yes.
30 Ville: I think so too.
31 Fia: And I too.

In this situation the teacher directs the children's attention towards why it is dirty in the jars. She challenges the children's experiences starting with a question. The dialogue (turns 21–31) above shows how children interact with each other. Through listening to each others suggestions and using their own experiences they develop the discussion.

The teacher then describes what happens to the leaves and woodlice. The teacher says: So you mean that leaves fall down to the ground (let her hands slowly fall down to the table) and to the tree stump where all the woodlice live? And then the woodlice begin to eat. The teacher pretends to eat and do some sound-imitating.

The teacher goes on and asks: `And then the leaves disappear, don't they?` Ville fills in and answers the teacher: `So it comes out […] in the jar out of the stomach.` Sam followed up by saying: `As number two.` In the next step the teacher asks if the excrements are good for the soil and Ville knows: `That is good for the soil.`

A little later this discussion goes on and the teacher comes back to Ville.

42 Teacher: Ville you told us before that it is good for the soil.
43 Ville: With number two.
44 Teacher: Number two from leaves that the woodlouse eats and then drops as number two on the soil. But what do you think it does for the soil?
45 Ville: That the grass grows more.
46 Teacher: That the grass grows more.
47 Teacher: Think how good, woodlice make the soil feel good that it grows
(The teacher looks around at each child).

This excerpt shows how a dialogue ends up with the woodlouse in a food-chain. The teacher is the one who directs children's attention to the black dots (turn 19) called dirt. In turn 21 she problematises this `dirt` by saying `why is it so dirty…?` and asks for the children's thoughts. Ville knows that it is excrements (turn 22). Fia responds to Ville's comments and says that it is because they have eaten (she probably associates with the woodlouse) (turn 23). Later (turn 28) the teacher confirms this and also asks Eskil to say what he believes. Eskil believes that it is excrements

from the woodlouse (turn 29) and also Ville (turn 30) and Fia (turn 31) confirm this. Even in this situation the teacher drives the dialogue forward by telling something about what happens in the jar and then by asking questions. She directs the children's attention to what happens to the leaf if the woodlouse eats it up. In next step Ville is the one that says that it comes out from the stomach. At the end it is also Ville who tells the others that the excrements are good for the soil. Near the end of the dialogue the teacher also comes back to this and asks Ville to tell why excrements are good for the soil (turn 42). Ville says that soil is good for the grass' growing (turn 45), and the teacher confirms. This dialogue shows a mutual discussion between four children and their teacher. Some children like Ville looks more active verbally, but we can also see how the children interact with each other as in turns 22–31. This excerpt is an example of teacher and pre-school children working with an ecological phenomenon. What happens to the food took its starting point in the situation with woodlice eating leaves.

(3) Animals' Appearance and Behaviour

When animals' appearances were discussed different content, like animals' construction and size and the name of the animals were discussed. Let us take a first look at a dialogue about a small animal found in the tree stump. That small animals can have wings is probably something that Disa has heard before.

```
48 Disa:     Now he (a small animal) disappeared.
49 Teacher:  What? Perhaps it flew away, did it have wings?
50 Disa:     No, because it was no beetle.
```

In turn 49 the teacher puts forward the concept `flew` in relation to an animal that has been seen in the tree stump. Disa's answer (turn 50) shows that she almost certainly has some experience of animals that can fly. She also knows that especially beetles can fly and that it was not a beetle that was seen in the stump. This excerpt shows—at least—two interesting things. On one hand *what* the teacher and the child talk about—the object of learning. Even in this situation the teacher chooses to problematise the content, here if small animals have wings and are able to fly. On the other hand, this way of handling the learning object challenges the child—Disa—to explore her thoughts and make them visible to herself and to the teacher. We see this as an important didactic approach and will come back to this later in the discussion.

In the next excerpt it is evident that Disa gets further use of her knowledge about beetles. This is a discussion between the teacher, Lars and Disa. They have found an animal in the stump that they have not seen before.

```
51 Teacher:  Look what a big beautiful.
52 Lars:     I want that.
53 Disa:     It is a beetle.
54 Teacher:  There is almost like gold on it.
55 Disa:     Daddy beetle.
```

When talking about different sizes of one species, the children often use family names to discern and perhaps explain why there are differences between animals of the same species but with different sizes. This is shown in the next situation. The teacher and some children are looking in the tree stump and discover a creeping thing—bigger than a woodlouse. Then the teacher tries to problematise this and says: `Why is this so big and the others so small?` In their answers children relate to how it can be in a family, where the father is seen as the big one, the mother of medium size and the baby as the small one. We can look closer at a discussion as an example. The children are here excited about their findings and try to name creatures in some way.

```
56 Disa:     It must be the daddy.
57 Teacher:  Is it the daddy in the family?
58 Otto:     No, it can be the mummy.
59 Teacher:  Is it the mummy?
60 Disa:     Mummies used to be smaller.
```

This dialogue shows how the children handle talk about different sizes of animals and especially animals of the same species. Probably this is not so notable. Children use the word they know and are used to. We can also assume that it is a way to talk about discoveries in some way, to classify and make differences. As we can see the teacher interferes in this talk (turns 57 and 59) and the value of this can be discussed. This excerpt shows the children engaged in examining different animals and talking about their discoveries. Maybe this could be a situation—a meaningful context—for the teacher to take the opportunity to introduce new words, and to introduce children to concepts that are used in relation to animals and specific species. Instead the teacher in a one-sided way chooses to use everyday language and anthropomorphic terminology. The reason for that we do not know and perhaps there are many reasons. Working with children is always a balance between different choices, and it is only the teacher who has the answer. But as analysts we can allow ourselves to discuss this situation from different perspectives. This excerpt could be an example of a unique situation where maybe it is possible to introduce scientific language in a meaningful context. We return to this in the discussion.

When teachers and children talk about animals in a tree stump they also discuss the animals' behaviour. These situations mostly arise from the experiments with woodlice in jars and are mostly about the woodlice feeling good or bad in their environment in the jars. In the situation that follows the teacher makes the children reflect on the animals' situation in the jars and what they will need. The teacher starts the conversation by asking the children about how it is possible to see if the woodlice feel good in the jars. Sam has an idea that is based on what the children do for the woodlice which Fia fills in.

```
64 Sam:      We give them some food and some light then they
             feel good and so we open the lid so they have
             such air.
65 Teacher:  We give them food and they get air.
66 Fia:      And give them to drink as well.
```

By asking *how* it is possible to see if the woodlice feel good the teacher challenges the children to think over and try to discuss this problem. Sam in turn 64 presents a possible way to handle this. Sam finds the solution in the same way the children handle the situation with all the experiments. We give them…, We open…. This way of expressing is interesting in the way it can be interpreted as the children—and specially Sam—feel like they are an active part of the situation and in the process concerning the woodlice feeling good in the jars. Sam uses his own experiences.

In a situation where the learning object concerns how many legs a woodlouse have the teacher says: Now in winter you need shoes don't you, I wonder if woodlice need shoes? Several children take part in the conversation and answer the teacher and say: No! The teacher follows up and asks: What do they do to get warm then?

67	Per:	They put it in to get warm.
68	Lars:	Don't think so, I think they put their hands inside the shell.
69	Per:	I think they go inside the tree stump.
70	Lars:	No they went into the shell.
71	Teacher:	Is it warm there then?
72	Lars:	I think they go inside the shell and get warm.
73	Lars:	As a tortoise does.
74	Teacher:	Like a tortoise does.
75	Disa:	Snail
76	Teacher:	Snail, snails also go inside and lie down when they are cold.

This dialogue above describes the turn taking. Even here the teacher is the one who directs the children's attention from if woodlice need shoes to how they get warm. It is also worth noting that the teacher starts the conversation by connecting to the children's every day experience. The children's answers and their listening to each other contribute to creating new views (see e.g. turns 67 and 70). This excerpt also shows the children like Lars' (turn 73) and Disa's (turn 75) way of going outside here and now comparing with their experiences of other animals in similar life situations and moving from the concrete to the abstract (see also, Thulin and Pramling 2009).

Discussion

The Swedish preschool curriculum advocates different content areas as necessary for children's learning and development. One such content area is science (Ministry of Education and Science in Sweden 1998; Promemoria 2008, U2008/6144/S). Preschool teachers in Sweden experience this as something new, even though biology has traditionally been a popular domain. This change can be interpreted as a strengthening of the pedagogical commission for preschool teachers. During the history of the Swedish preschool the act of learning and the teaching methods have

often been discussed in the first place (Pramling Samuelsson and Asplund Carlsson 2003). Now dealing with a specific content possibly evokes different kinds of feelings among the preschool teachers. On one hand feelings of worry in relation to a more scholastic approach for preschool and missed playtime for the children and on the other hand questions concerning *what* kind of content and *how* to deal with the didactic approach that may arise (Broström 2006; Thulin 2006; Thulin and Pramling 2009).

The purpose of this chapter is to give examples of what emergent science can mean for preschool practice. We have here limited our presentation to science concerning ecological phenomena. Ecology can be defined as the study of organisms in relation to the surroundings in which they live (Chapman and Reiss 1999). The empirical examples which are used build on preschool children's (3–6 years) investigations of "animals in a tree stump" with special relation to three talking themes concerning: *Life conditions of animals*, *What happens to the food* and *animals' appearance and behaviour*.

While investigating the tree stump the teachers and the children talk about concrete objects discovered in the stump like animals' appearance, their colour, form and size or about the dirt and excrements found in the jars. But there is also a discussion on a more general level. With the purpose to make connections visible, the teachers direct the children's attention towards questions about animals' need for survival, a woodlouse in a food chain, family relations and meaning of concepts. Several researchers have emphasised the quality of the verbal interaction between an adult and a child to be an important pedagogical strategy for the development of children's knowledge and abilities (Pramling Samuelsson and Asplund Carlsson 2008; Sheridan et al. 2009). The examples above do not show a passive teacher. Instead the teachers act like a motor in the conversation. They point out the problems in the situations and in the phenomena and try to direct the children's attention towards different learning objects.

In theories about learning children's own experiences often are seen as a crucial point of departure for the didactic approach (Harlen 2006; Marton et al. 2004; Pramling Samuelsson and Asplund Carlsson 2008). The above examples from the conversation between a teacher and a child also show how the teacher connects to the children's experiences and asks for their opinions like, for example with the question *What do you think?* The teachers accept contributions from the children, repeat them and use them in the following conversation or ask for explanations. Previous research has shown that what and how children learn to a large degree depends on prevailing patterns of adult–child interactions (Sheridan et al. 2009; Siraj-Blatchford and Mac Leod-Brudenell 1999). Siraj-Blatchford and Siraj-Blatchford (2002) characterise this kind of communication as "interactions that emphasise mutual engagement, and involvement as well as instruction" (p. 211). We argue that a mutual engagement includes the exploring and use of children's experiences and an ability to enter into the current situation and object of learning.

The excerpts above also show children as contributors. They listen to the teacher and each other, and they observe, examine and express their meaning. In several pieces of dialogue it is clear how children make connections to earlier experiences.

They use prior experiences to explain their ideas such as Ella describing how the woodlice get dirty or probably Disa knowing that beetles have wings or a way to classify woodlice with different sizes. These examples also show how the children can move outside what they experience here and now. With the help of earlier experiences they extend the communication to include new dimensions.

When working with science together with young children the question about when to introduce new concepts inevitably comes up. Vygotsky (1934/1986) argued that children's development of conceptual understanding has to be linked to reality and a meaningful context. In our investigation we can see examples of situations where it might have been possible for the teacher to present scientific language in the particular context, but instead the teacher chooses to use everyday concepts. Understanding of a scientific language provides, according to Vygotsky (1934/1986), a considered relation between the everyday understanding of a concept and the new scientific concept—caught in one concept—and that this actual concept is included in a system of concepts with relations to other concepts. From the examples mentioned above we argue that talking about an organism in relation to other organisms and their physical environment offers a great opportunity to open up the development and learning of further concepts. Working with ecology—for example animals in a tree stump—in a meaningful context seems to interest children and catch their curiosity (Thulin 2010). The results presented in this chapter show that children have a growing curiosity to learn more about different scientific phenomena. It also shows that teachers need to recognise the children's endeavour to understand scientific phenomena, in order to make use of the possibility of challenging children to develop a deeper understanding of the world around them. Such an approach, together with treating children's questions seriously, could be a foundation for the development of lifelong learning for a sustainable future.

Dealing with meaningful content in a natural context seems enough to engage children. At the same time, while this perhaps sounds simple, the situations above show the complexity of the process including teacher competence and the need for space for children's perspectives. Working with ecology like this does not need any artificial artefacts or any traditional school organisation. As Dewey (1916/1986) pointed out, nature itself is exciting enough. Through mutual teacher–children communication, looking closely at a piece of nature, the doors are open for learning ecology in preschool.

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Chapter 5
Pictures of Spring: Aesthetic Learning and Pedagogical Dilemmas in Visual Arts

Marie Bendroth Karlsson

Introduction

The present work, which is an example from a larger ethnographic study (Bendroth Karlsson 1996), explores visual arts education in a Swedish preschool setting. Visual arts in early childhood education have been motivated by different reasons over time. In the curriculum for preschool in Sweden, aesthetic learning processes and visual arts are seen as important tools for both learning processes in general and for cultural democracy reasons. Traditionally, visual arts have been used both as a method and as a content in Swedish early childhood education.

The predominating ways to understand children's picture making are based on either developmental psychology and the view that the ability to make realistic pictures will unfold with age or that children's art is seen in the light of the importance of "free expression". In neither of these views is the role of the teacher considered important. In the present study I will scrutinise a visual arts activity in a Swedish preschool and reflect on it as a cultural practice. In terms of the socio-cultural perspective I will draw upon the teacher is considered a more "competent other" who will provide the children with tools relevant for the task. I will view the activity from three levels: a socio-cultural, an interpersonal, and an individual level. The socio-cultural level concerns the overriding cultural values that are performed. The interpersonal level deals with teacher and children participation and dialogue and finally the individual deals with the artistic process of the individual child.

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Research Questions, Theoretical Framework and Method

The major questions posed in this study are:

- How are art activities performed, what kind of mental tools do teachers offer and what kind of guidance do they provide for art and visual communication?
- How do teachers talk about art and art making?
- How do the children respond to and participate in visual arts activities?

The theoretical framework is based on a socio-cultural perspective which assumes that the conflict between teaching strategies and children's art strategies reflects socio-cultural differences in how children and children's competencies are viewed (cf. Rogoff 1994; Wertsch 1991). A basic premise is that classroom discourse provides children with mental tools for thought (Vygotsky 1978; Säljö 2009). Seen in terms of socio-cultural theory, a visual arts project ought to provide children with *tools*, both mental tools such as new ways of seeing and words and concepts to talk about art, and physical/technical tools appropriate for aesthetic and visual communication. If we see the mediated action as fundamental for learning, one has to "focus on the interaction between the child and significant others in the socio-cultural environment; mental processes are social in origin and they are mediated through interaction" (Ivarsson et al. 2009, p. 201).

Therefore, I will make micro-analyses of video documentation of interaction. Since a particular interest here is to focus on the context and the process, a close observation has been important. During the fieldwork, at ten different pedagogical settings, all art activities during an entire week were videotaped, in each setting. In addition to the video documentation, the teachers were interviewed about their attitudes towards art and their personal experiences of art and art activities. The teachers in preschool are mostly generalists in education, that is, they have a general knowledge of many domains of knowing rather than being, for example, art teachers per se.

The primary focus has not been on the art products, but rather on the teaching and learning processes revealed in teacher–child and child–child dialogues. My work is based on the premise that context and social interaction are essential components of human communicative processes and strategies. Action is used as a primary unit of analysis (Wertsch 1991). Therefore, I have analyzed participation in terms of who initiates, who chooses material/techniques, who terminates the activity, etc.

Lindström (2002, 2009) has provided us with a useful model of four types of aesthetic learning strategies: learning *about*, learning *in*, *with* and *through* visual arts. While learning *about* and learning *in* are medium-specific, learning *with* and learning *through* are medium-neutral. Lindström's model helps us to discern different kind of pedagogical approach and to decide what kind of tools is needed for different visual arts projects. The activity studied here is defined by the teachers as a visual arts project, that is, a medium-specific project in accordance with Lindström and ought to provide tools for art education.

I will suggest that visual arts activities are often made subordinate to goals other than aesthetic learning and that pedagogic dilemmas will occur due to the teachers'

unclear aims and views of children's aesthetic learning, and to the teachers' ignorance of aesthetic matters. When using aesthetic and visual arts in an unreflected way, we unintentionally risk following a tradition of naturalistic norms, and a view of artistic and creative skills as innate.

Swedish Preschools and Visual Arts Education

In early education for young children, art has for long been part of the core activities. During the twentieth century there have been two predominating pedagogical traditions concerning visual arts education in Swedish preschools: on the one hand picture- and object-making activities with adult-run instructions and which have been marked by naturalistic preferences. This kind of art activity is rooted in a Froebel tradition with emphasis on technical skills. On the other hand, Read (1953, 1956) and Lowenfeld and Brittain (1969) had a major influence in Sweden through their concept of child art and arts as expression, stressing creativity and imagination, arguing that all individuals have their right to be creative in their own way. Consequently, this movement of free expression in visual arts made the teacher as educator unnecessary. She/he became mostly a supplier of material. At the same time a Piagetian cognitive theory of children's pictorial representations has had a great influence on preschool teachers' art practice. The theory implies that children's graphic development unfolds in stages from scribblings to visual realism. The idea of unfolding ability and the idea that an ability to make art is innate rather than learnt are two obstacles in the improvement of art education (cf. Wallerstedt, this book). I have, in my research, found that both ideas are rather common amongst preschool teachers (Bendroth Karlsson 1996). Wertsch (1991) points out the didactical consequences of what he calls "the metaphor of possession" and compares it with a different kind of idea concerning children's abilities namely "the tool kit analogy". This means that relevant cultural tools are mediated in interaction and one learns in social practice (Wertsch 1991). In the last decades the pedagogical philosophy of Reggio Emilia has had an impact on aesthetic learning practices in a large number of Swedish preschools (Häikiö 2007; Lind 2010). The Reggio Emilia approach is characterised by Piazza (2007, p. 103) in terms of four principles: "the multiple possibilities children possess for forms of communication […] connections between different languages […] creativity as process rather than product […] and research based aesthetic activity". In her thesis, Lind (2010, pp. 367–368) claims that "In Reggio Emilia they look at the aesthetic quality not as a question of style but as a quality of the connections" of "aesthetic links" with reference to Gregory Bateson and his meaning of "aesthetics"; i.e. "sensitive to the pattern, which connects". I would say that both in attitude and practice the Reggio Emilia approach has become a part of the discourse of aesthetic learning in Swedish preschools. In the teacher training programmes there is a mix of pedagogical traditions concerning visual arts activities for early childhood and this mix is performed in preschool practices (cf. Änggård 2005; Bendroth Karlsson 1996; Löfstedt 2001).

Pedagogical Dilemmas and Aesthetic Learning

In my study I have noticed that pedagogical dilemmas often occur in aesthetic activities. The example I have chosen to present in this chapter is an example where the dominant pedagogical dilemma is the difference between what the teacher intends to teach and what the children seem to learn. In the following section, the visual art activity is introduced to the entire group, 11 children (aged 4–6 years), together with music. My interest here is to point out what kind of mental tools are mediated, i.e. how does the teacher communicate how to think about music and the connection between images and music. I present the activity using extensive excerpts. The names of the children are fictitious.

Vivaldi Used as an Activity Impulse

Teacher A is leading the activity of the day and begins by reflecting on an assignment the children had completed earlier. In this assignment the children had painted pictures of winter (now hanging in "the gallery") after they had listened to music by Vivaldi. Teacher A explains that Vivaldi has written other music as well and asks the children if they know which season follows winter. Notable is that it is, at the time, still winter in Sweden. A few children answer "spring" in unison, at which point Teacher A says that they will now listen to Vivaldi's Spring from *The Four Seasons* and talk about it afterwards.

Excerpt 1 Listening to Vivaldi and talking about springtime rather than music

1 Teacher A:	Now you can lie down or sit up, which ever you think is most comfortable and I will start the tape so you can listen to music about spring. After the music, we can talk about it. (The children lay down on mattresses on the floor. Most of them lay on their stomachs, holding their heads in their hands.)
2 Teacher A:	This will take a while so lie down or sit so you're comfortable. You should think about what this [the music] is all about. Teacher A turns on a little portable tape recorder and we listen to Vivaldi's "Spring". When the music is over, she begins the discussion time.
3 Teacher A:	Now I wonder if any of you could hear what Vivaldi meant when he wrote this music that is supposed to remind us of spring? [At first the children are quiet, but then begin to move around as if they are uneasy. They yawn and seem to be generally uninterested.] When Teacher A doesn't get any spontaneous responses, she begins to single the children out, asking them questions about the music.

4 Teacher A: What did you think about, Emma?
5 Emma: [inaudible] they had fun.
6 Teacher A: How could you hear that?
7 Emma: It was just the violin.
8 Teacher A: Did it sound happy?
9 Emma: un huh [affirmative].
10 Teacher A: Leo, what did you think?'
11 Leo: [inaudible].
12 Teacher A: Okay, how did you hear that?
13 Teacher B: Excuse me Leo, what did you say?
14 Leo: I heard the sunrise and the flowers waking.
15 Teacher A: How could you hear that?
16 Leo: [inaudible] the violin.
17 Teacher A: You thought it was the violin. It was played a lot, don't you think - almost all the time. Can anybody else think of something that sounded like spring? Victor?
18 Victor: Uhh the trees and bushes got their leaves.
19 Teacher A: How could you hear that?
20 Victor: Well, because [inaudible].
21 Teacher A: You just think it sounded like that? Anybody else? Linus, was there anything you thought about while you were listening to the music? Something that sounded like spring?
[Linus looks straight ahead.]
22 Teacher A: Nothing?
[Linus turns towards teacher A].
23 Linus: The grass growing. The outdoors.
24 Teacher A: Un huh. Joel, did you hear anything that seemed just like spring?
[Joel shakes his head.]
25 Teacher A: No, okay.
[Johan raises his hand and teacher A turns to him.]
26 Teacher A: Johan?
27 Johan: It was windy.
28 Teacher A: It was. I heard it too. Is it usually like that in the springtime?
[Johan nods].
29 Manne: A little, but it's really windy in the autumn!
30 Teacher A: Yes, then it's even windier. What about you Manne, was there anything you heard in the music that made you think of spring? I thought the stream ran like this [she illustrates this by moving her arms in the air]. It sounded like water rippling along. What did you think, Petra? Did you think it sounded like spring was on its way?
[Petra nods.]
31 Teacher A: What usually [Teacher A starts to ask the group a question but notices that Petra wants to say something]. Yes?
32 Petra: I heard butterflies.
33 Teacher A: What did you think, Sara?

[Sara waits before answering. Loud yawning is heard from Leo. The boys that are on their knees on the mattresses cannot hold still, they change positions, first lay on their stomachs then get back up on their knees. They turn around and look at the camera, flop down on their stomachs and then get back up on their knees again.]

34 Sara: [inaudible] the flowers.
35 Teacher A: What about them?
36 Sara: That there was snow on the flowers.
37 Teacher A: Yes, a little snow fell on the flowers. Elin?
38 Elin: A little snow fell on the grass too.
39 Teacher A: Right, it can snow a little even when it's been spring for a while. Lotta?
40 Lotta: It felt cold.
41 Teacher A: You thought it felt cold. How did it sound when it felt cold?
[Lotta doesn't answer].
42 Teacher A: It's hard to explain. You know what we gonna do now? A few of you at a time, first six of you then five, get to go to the painting room. You'll each get paper, paint, and a brush and then you'll get to listen to the music again and paint what you hear in the music about spring. We painted on really big pieces of paper last time, but today you'll get smaller pieces like this [shows size with arms]. So, we'll start with Joel, Linus, Johan, Lotta, Sara and Emma, you can go to the painting room. The children that will be in the painting room are told to put on a painting smock or an apron.

Comments on the Vivaldi Talk

At the beginning of the discussion time there are a few children who answer so quietly that I am unable to hear them; others don't answer at all or simply repeat the response of another child. From the children that did answer, Teacher A also asks for an explanation of why they interpreted the music in the way they did (turns 6, 12, 15 and 19). The discussion Teacher A tries to initiate requires that music be verbalised, that a musical experience be transformed into words. This is an advanced task in which one type of symbolisation process must be translated into another. Also, in this case, the children are asked to translate in two steps, first from music to words and later from music to pictures. One reason why this discussion was so slow and difficult might be that it is hard for children to verbalise their experiences, to express in words the music they have heard. A more common transference between modalities occurs between music (or speech) and colour (both abstract symbol systems). This fact has affected our use of language; we say, for example, vowel colour (for

more on transduction between modalities, see Pramling and Wallerstedt 2009, also in this book). Another reason for the children's hesitation might be that it was required of them that their musical experience be about spring. Furthermore, Teacher A asks for literal answers, not symbolic. I follow Winner (1982) when she argues that "With few expectations, music is entirely non-referential: musical pitches do not denote anything" (p. 195.) But exactly that is what Teacher A expects from the children.

It seems as though Teacher A has two projects underway at once. The first and most explicit could be called a "world orientation project" (henceforth WO project) and deals with children's images and knowledge of springtime. The second project deals with allowing the children to use their imaginations and create expressive pictures of spring. The question is: is it possible to bring these two projects together? To use Lindström's (2002) terminology, the WO project could be an activity *with* art, i.e. where the learning about springtime in relation to other seasons, is the pedagogical goal. Art is then used as a method. But the activity is defined as a visual arts activity by the teachers and therefore ought to provide tools for learning *in* art. In terms of the WO project, the questions Teacher A poses to the children after the music are very clear: `What happens in the spring?, Is it usually like that (windy) in the springtime?.` The focus of her questions is not on the children's musical experiences. Instead, the discussion time takes on the character of an examination in which there are correct and incorrect answers. She asks for factual information about springtime in Sweden. When Teacher A asks, `What did Vivaldi mean when he wrote this music about spring?` (turn 3), she is asking the children to speculate on the composer's intentions. As I described in the introduction of the activity, at the time of this activity a typical winter in the southern part of Sweden was still underway. It could, therefore, hardly be expected that the children would be experiencing any genuine "spring feelings". Consequently, Teacher A's questions are cognitive in nature, drawing on learning and knowledge, rather than being directed at the children's emotions or sensory experiences. The activity becomes an exercise in making the "right" associations and correctly denoting musical symbols, a traditional classroom discourse. What then is the role that music is intended to play in this context? One can guess that Teacher A's intention is to give the children a musical experience but there is hardly any room left for diversified ideas and personal experiences and associations. It could hardly be taken for granted that the children's musical experiences give rise to associations to springtime events (cf. Chap. 6 in this book, on teachers' attempts to facilitate children's music-listening skills). Can it be taken for granted that children have a clear idea about what spring is? Can it be assumed that such a clear picture is based on children's own memories from earlier spring seasons? Do children 4, 5 or 6 years of age, even remember past springs?

The intention with the musical part of the activity could have been to let Vivaldi's music function as an inspiration or as an aesthetic impulse for the art production that was to follow. Such an approach would have been an occasion to create a possibility for a cultural experience with the potential of becoming a personal experience, which in turn could be tied to the children's earlier knowledge and experi-

ence, and also to their imagination. Early in the dialogue about the violin, `Did it sound happy?` (turn 8), Teacher A does react to Emma's comment on emotions. But, for the most part, very little room is left for the children's own experiences, emotions and associations during the discussion time. Teacher A's questions suggest that she has defined the musical experience as an interpretation of what happens in the spring, and her questions are based on that definition. It would have been possible for the children to have had personal musical experiences, but in a context such as this, in which music was used as an instrument through which to talk about spring, such an opportunity was probably missed. The meaning of music in this case is constructed as an art form possible to listen to and understand in one right way. The way in which Teacher A poses questions is typical of a language genre called formal instruction which is common in preschool and elementary school settings (Johansson and Pramling Samuelsson 2007). The characteristic aim of formal instruction is that it is expected to guide children's mental processes, such as attention and thought, in a certain direction which is thought to suit the pedagogical context (Wertsch 1991). It is especially clear in this case, as several of Teacher A's questions have a school-like, WO project character. This is exemplified by her telling the children what the music was about before they were able to listen for themselves. If we consider the children's answers, it would seem that they are well aware of the answers their teacher is looking for; thus, they are not reflecting on their emotions and experiences, but rather guessing about what the teacher want as an answer.

Teacher's Introduction of the Painting Task for the Entire Group

It is now time to introduce the painting task. Teacher A lowers her voice and speaks in a way that lets the children know they are about to do something special, something they like to do. She says that `You get to paint now, paint what happens in the spring`. The instruction is unambiguous: the children are told to paint what happens in the spring. Later in the painting room, the instruction is further reinforced when the children are told to think about what happens during springtime (see the section on implementation below). Using Bakhtin's terminology, the instruction could be described as authoritative or as a monologue, but regardless of which description one chooses, the instruction is a discourse which leaves no room for dialogue or creativity and which infers an unambiguous interpretation (Wertsch 1991). As I see it, there is a contradiction built in to the teacher-constructed context of painting pictures of spring. On the one hand, freedom of expression is communicated and, on the other hand, clear restrictions on expression are imposed. The children are encouraged to think about, reflect upon and listen to what the music is saying, but the result of their thinking, reflecting and listening must be a picture of spring. The contradiction lies in the fact that there is a two-fold and simultaneous goal: (1) to give the children the opportunity to freely develop thoughts and emotions (in this case a personal art expression) and (2) to lay the groundwork for and foster certain proficiencies and attitudes in anticipation of the children starting school.

Cultural Tools

Seen from a socio-cultural perspective, an individual's actions can be said to be contingent upon the social interaction taking place within a specific situational context. Thus, in this study, the social interaction is children's art activities and the situational context is a Swedish preschool. In every social interaction, we communicate with each other using various "tools", of which spoken language is the most common. But tools can also consist of different types of visual signs and they are used in different ways in different social contexts. The important point here is that tools are an essential part of what is said and how it is said. In this case, the tools are both psychological and physical. The verbal instructions mediate tools for the children's thoughts concerning how they should think about their assignment. Even the physical tools (paper, paint, brushes etc.) play an important role in how the art activity process will develop and in how the resultant pictures will appear (Wertsch 1991). The physical tools used in the activity consist of white A4 paper, liquid tempera paint (in bottles) and thin brushes (water-colour no. 10). Activity materials and tools are determined by the preschool teacher to the extent that she decides the size and quality of the paper; the children do not take their own paints, but Teacher A goes around to each child and pours out the colours they choose. She also decides the brush size to be used. Tools are provided and used on two levels in this activity. The first level deals with thought processes and has to do with the teacher's way of giving instructions. Her choice of words and expressive style influence the children's thoughts about what is to be done and perhaps why it should be done. The other level deals with how the task is to be completed and even if this is not verbalised (as in this study), the physical tools provide the answer. It can be assumed that these circumstances influence the children's pictures.

In the following two sections I will give a broad outline of the painting activity which is done in two separate groups. Thereafter I will focus on one of the children (Manne) whose activity differs from the rest.

Conducting Teacher's Project—Group I

After the introduction, the children are divided into two groups and the first group of six goes to the painting room together with Teacher A and an apprentice. Because the painting room is rather small, only a part of the original group can be there at a time. After putting on their painting smocks, the children in group I (three girls and three boys; 5–6 years of age) sit down at the table, three on each side. This resulted in a boy and girl side. Teacher A asks the boy to her left which colours he would like. She pours these colours into the cups on his pallet. Then she asks the next child and works her way around the table. All of the children sit quietly and calmly and wait for their turn. When everyone has his/her paint, Teacher A hands out the brushes and then reminds the children about their painting assignment. Teacher A

says that Paint what you think happens, what you hear about spring. I'll turn on the music now and you can think about what you heard before when we played it, about how it sounds and how it is during springtime. Think about what you want to paint.

The tape recorder is turned on again and Vivaldi's music fills the painting room. The teacher and the apprentice sit at one end of the table, though back a bit from the table as they do not participate in the painting. They are there to see to it that the assignment gets done and to supply the children with water and paint, etc. The teachers are the children's helping hands. The children in group I paint quietly, but fumble a bit in the beginning. Lotta, the youngest in the group, looks around rather insecurely at the other children's paintings in order to see how they approach the task. She concentrates, for the most part, on her older sister who is sitting next to her. After a short while, Lotta starts to paint and in exactly the same manner as her older sister. But it is not only Lotta that is looking around at the other children's work, everyone is doing it. This checking of the work of others seems to be a way for the children to confirm for themselves that they have understood the task and are on the right track. It looks like the children take a long, deep breath together and then begin to paint. Suns, ground, sky, flowers and houses timidly emerge on the paper. All of the paintings are rather similar. The activity is completed in less than a half-hour. Afterwards, the children leave the room one by one as they finish their pictures.

Conducting the Child's Project—Group II

Group II consists of five children (two girls and three boys; also 5–6 years of age). The mood in this group is a bit different from that of group I from the very beginning. It seems as if Manne's (one of the boys) obvious enthusiasm and willingness to experiment have warmed up and stimulated the group. During the entire activity, Manne talks about what he is doing and about his discoveries, something of an elongated, thinking out loud monologue which is, for the most part, not directed to anyone in particular. In this case, the children do not have to wait as long before they can begin to paint, the paint is out and ready to use, left over from group I. Teacher A turns to Manne and asks him to name the colours. Manne looks at his pallet and names the colours in order Yellow, red, blue, green, white! Teacher A then turns to another child, Petra, if I want to use the colours, can I just dip like this from one to another? [she demonstrates with the brush over the pallet]. Petra answers by saying that you must rinse off the brush between colours and that is precisely what Teacher A wants all the children to remember. Then Teacher A reminds this group about the picture assignment. Teacher A says to the children, Paint this music that's about springtime. Before starting, you should think about what we said about what happens during spring.

Leo and Victor sit beside each other at the table. They are both concentrated on their painting and seem to like what they are doing. Leo paints the ground, the sun, part of a house along one side of the paper and large expressively painted flowers that reach half-way up to the sky. He mixes colours, blue and brown in order to paint dirt, and says out loud `little bitty buds`. I am not sure that I hear him correctly and ask what he is painting. He says with a big smile `little bitty buds so there'll be more flowers!` He plants little painted bulbs in his painted dirt and seems to enjoy the thought of more flowers, an example of imaginative play with pictures. Across from Leo sits Petra and paints, keeping to herself; her best friend was in the first group. Beside Petra sit Elin and Manne. Manne paints and experiments in a concentrated and engaged manner and, throughout the activity, talks out loud about his experiences. Elin attends to all of Manne's doings and from time to time comments on them, participates in his experiments or initiates new ones.

Cave Painting: A Child's Project

The above course of events happened in parallel to the work done by Manne, and to some degree Elin, which will be described below. During the pictures of spring activity, it became obvious that Manne had developed his own project. My interpretation of the events taking place in the painting room on this particular February morning is that two projects are under way: (1) realisation of the teacher's WO project and (2) Manne's realisation of his own project (to be described below). At the same time as the other children are involved in the WO project (described above), Manne has begun to paint a picture that is completely different from those of the other children's. He stirs his brush around in one of the colours on the pallet and looks carefully on the hairs on the brush. The following five sections (Excerpts 2–6) are "close-ups" on Mannes visual arts activity.

Excerpt 2

```
1 Manne:       White!
               [He paints on his paper with the white paint.]
2 Elin:        It doesn't show, Manne.
               [Manne continues to paint without looking up.]
3 Manne:       This doesn't show, it doesn't show. BUT there's
               a little blue in it so it shows [he turns to the
               teacher] it's daark (.) white!!
4 Teacher A:   Is it dark white?
```

Manne seems content with his discovery and makes up a new word for what he sees. He works untiringly at his own project, despite Elin's objections. His work is partly legitimised by the fact that the new colour `dark white` has actually become conceptualised. This is also seen in the teachers question `is it dark white?` (turn 4) which legitimises and validates the new concept. This is the start of Manne's own visual arts project, a project carried out on paper that is both narrative (a visit to Spanish caves) and experimental in terms of colour and form. In Lindström's (2009) terminology a project *in* art.

Manne continues to explore mixing colours alone and in collaboration with Elin.

Excerpt 3

1 Manne: If you take more white it gets white.
2 Teacher A: Yes, you can try and see.
3 Manne: I'll take a little more white.
[Elin glances at him. Teacher A gives him a new brush.]
4 Manne: And I'll take a little white with it [uses the new brush. Teacher A changes his rinse water].
5 Elin: Look at this now, Manne [slowly dips her paint filled brush into the clean water. Manne laughs loudly with delight when the paint slowly spreads into the water.]
6 Manne: The colours are mixing!
[Elin takes the jar and turns to Petra.]
7 Elin: Look at our water, Petra!
[Manne continues to giggle and dips the brush into the water jar.]
8 Manne: It turns, let's see what happens now.
9 Teacher A: Are you listening to the music and hearing how it sounds?
10 Manne: It turns green!
11 Teacher A: Manne? Manne listen to the music!
[Elin dips her brush again and Manne declares that her addition didn't change the water's colour.]
12 Manne: It's the same now I'll take yeellow. It turns another kind of yellow!
13 Elin: Manne, Manne look!
(Manne is very busy and continues to work eagerly.)
14 Manne: I want to mix a little WOW! If we mix the whole time then it turns to something else He continues to mix colours in the rinse water and Elin follows suit. They dip their brushes in the rinse water at the same time and watch with interest as the colours spread in the water. This is a collaborative exploration.
15 Manne: It'll turn black soon!
[Now they advance to simultaneously mixing colours directly on the pallet.]
16 Manne: I'll take blue.
17 Elin: Should I show you how to make purple? First take blue there [she points and Manne follows her instructions] and then that one there [she takes Manne's brush and guides it into the rinse water] and then take red [she releases Manne's brush over the red paint].
18 Manne: It turns orange! [mixes red with blue paint] now a little red I mix in a little bit of each.

In the above excerpt, Manne seems to be intensely busy with his second project. If the first project was pictures on paper, then the second must be mixing colours

in water. By mixing the colours, Manne creates his own knowledge; he learns the characteristics of various colours and their relationships to one another. His activities reflect, to a great extent, the first motto of activity pedagogy learning by doing (Dewey 1958). His attitude and behaviour are also in line with the constructivist school of psychology in terms of the stress it places on the child's own activity and experimentation, and Piaget's "anti-pedagogical" psychology in which the child's self-teaching is stressed (rather than adult models and teachers). One can also argue that Manne's talking aloud is an example of the dialogic nature of learning and that the collaboration with Elin is a co-construction of meaning and knowledge *in* visual arts. It seems as if Teacher A thinks that Manne's experimentation has gone too far when other children begin to be involved. Despite her repeated attempts to reach Manne, he does not respond to her, his attention is concentrated on his colour experiment. Teacher A tries to bring him back to the assigned pedagogical task when she encourages him not just to experiment, but also to devote himself to the task at hand. `Are you listening to the music and hearing how it sounds?, Manne? Manne listen to the music!` (turns 9 and 11). A while later, Teacher A says that it is time to start thinking about finishing up and one child gets up and leaves the table at once. Manne does not respond to her, finishing up is not on his agenda quite yet. He is still engrossed in his and Elin's colour experiment.

Excerpt 4

```
1 Teacher A:  You can tell me when you're done.
2 Manne:      Now it turns black.
3 Elin:       Look at this water, Manne.
4 Manne:      Here is black [he fills the brush with paint and
              dips it directly into the water]. I mix with the
              colours. I mix with other kinds of colours I mix
              a lot of paint in it. WOW! Now I'm going to this
              colour. Oh, oh, it turns into another DAARK. …
              it turns light blue it should be a little light.
              I mix a lot of colours so they become a lot of
              other colours. I mix that one and that one and
              that one and that one [points with the brush at
              the different colours to show Elin which ones he
              means].
5 Teacher A:  What are the colours called?
```

It seems as though Teacher A has reacted to Manne's not naming the colours properly as he points to them; she takes the opportunity to be pedagogical, in the derivative sense of the word (turn 5). She asks Manne what the colours are called even though she had posed the same question to him at the beginning of the activity and he had answered correctly. In his study of daycare, Ehn (1983, p. 91, my translation) writes, "Everything is pedagogised, every situation is a potential learning opportunity, every activity is a possible means through which to create order!" My observations, exemplified by Excerpt 4, confirm this idea. It is clear that Teacher A does not ask this question in order to find out the extent of Manne's knowledge of colours or to challenge him in any way. Rather, it is a question of creating order. Training colour concepts is an important part of the preschool training agenda and

this was an opportunity to reinforce these concepts. Perhaps she made the task more school-like by letting the children simultaneously practise colour concepts. If this is the case, then her colour training project has a somewhat different character from Manne's more experimental and sensuous colour project. After almost half an hour, most of the children have completed their pictures. One after the other, they have declared that their pictures are done and left the table. All of the children have painted flowers, buds and the sun or other similar things that can be interpreted as falling within the boundaries of the WO project, all except Manne. He has not painted flowers and the sun and he still does not appear to have any plans to quit.

Excerpt 5

1	Manne:	Now I'm gonna mix paint [looks at the different colours on the pallet]. It'll be a lot of paint. Where's everybody else? (looks quickly around and then continues to mix)
2	Teacher A:	We can save that until later Manne if you want to continue to paint with all you have mixed.
3	Manne:	Hmm I'm gonna, I'll just mix and twirl [twirls the brush in the paint].
4	Teacher A:	Yes, we will save it for you Manne.

Now Teacher A tries to get Manne to end his colour mixing experiment in a friendly way by promising him that he can continue some other time. This is an example of a situation that Ehn would probably see as a manifestation of "cultural hesitation", a phenomenon that he considers to be typical of daycare settings. This hesitation implies that "adults are torn between letting children do what they 'feel like' and teaching them to conform to social norms" (Ehn 1983 p. 18, my translation). This results in a type of negotiation with Manne. If he is a good boy and ends his experiment, thereby adhering to the general rules (that everyone should complete a common activity together), then he can continue with what he likes to do some other time. This could be seen as a type of compromise between the individual and the collective. But Manne is not ready to give up on his project yet. Considering the possibilities of participation in an activity one can argue that Manne is not the one who decides when his painting is finished.

Excerpt 6

1	Teacher A:	Are you done with your picture?
2	Manne:	No, because I need to draw around the edges.
3	Teacher A:	No, because if you do it now, you know now it's almost…
4	Manne:	Yes, I'm gonna [begins to paint on his picture]. [Manne is now the only child left and Teacher A is cleaning up after the other children.]
5	Manne:	It's not done yet cause I need to draw there too [points at the unpainted portions of his paper]. And a little [touches the pallet with his brush]. My drawing is almost done. I'm gonna mix a lot.
6	Teacher A:	I think we should change your water now, it's really dirty [removes the water jar].

```
7 Manne:       There's so little of that colour [looks at the
               pallet].
8 Teacher A:   Un huh.
9 Manne:       I've used almost all the paint to mix.
10 Teacher A:  Un huh.
```

Manne has now had to end his project of mixing paint in the water jar and begins to complete his picture; completion implies that he must cover every empty space on the paper (turns 2 and 5) and use all the colours (turns 5 and 7). When the picture is complete, he continues with his brush in the pallet and dips and mixes and talks out loud. Teacher A brings the activity to a halt by taking the water jar. Nevertheless, Manne continues with the pallet for a while, but then gives it to the teacher as well. Manne's painting is the only one of all the children's paintings that is completely filled with paint. It looks to me like an abstract, nonfigurative painting, but will turn out to be a definite geographical location, as will become evident (see below, Excerpt 8). Manne has completed his own project. He created his own meaning, outside the boundaries he was given. Manne was conducting the activity in a playful way and the importance of play in young children's learning has been pointed out by several researchers (cf. Anning and Ring 2004; Johansson and Pramling Samuelsson 2007; Vygotsky 1930/2004). When Manne and Elin did their experiment with the paint and Manne painted the caves, it was obvious that he/they were playing simultaneously as they were learning. His attention was much focused and he was giggling and talking, in contrast to the children whose focus were on conducting the teacher's task. They were silent and insecure because of the lack of relevant tools, unclear task and small possibilities to really participate in the activity.

Reconstruction and Talk About the Art Works

The day after the painting activity the entire group is gathered. The gathering begins like the inspiration phase, the children and adults sit in a circle on the floor. It is Teacher B that leads the finishing activity and since she was not present in the painting room, she starts by reconstructing and remembering yesterday's art activity with the children.

Excerpt 7

```
1 Teacher B:  What music did you hear? Was it the same that you
              heard here during sharing time and later in the
              painting room?
              [The children are quite at first.]
2 Child:      No.
              [More children shake their heads no.]
```

Because the answer was wrong, Teacher B repeats her question. Perhaps the children have misunderstood her question? Again she gets negative answers. It seems as if the children have not experienced it as the same music. The preschool teachers appear to be surprised and Teacher A comments thoughtfully to Teacher B that

they should provide more listening training for the children. When it is time to talk about the children's paintings, the teachers bring out a large cardboard box which they have prepared by cutting a hole the size of a TV screen and a slot on the top and bottom through which the children's paintings can be passed and then seen on the "TV screen". They have mounted a spot light behind the box that backlights the paintings. Teacher B picks out the first picture to be shown. It happens to be Manne's. Manne is the only one who had made his own interpretation of the project and he had conducted a project in visual arts, an aesthetic project.

Excerpt 8

```
1 Teacher B:   And who has painted this nice picture?
2 Manne:       [quickly] Not me! [changes his mind in seconds]
               Yes, it's me!
3 Teacher B:   Can the person who painted this picture tell us
               what he has painted?
4 Manne:       Caves.
5 Teacher B:   Oh really, and where are they?
6 Manne:       There! [Manne stands and points at his
               painting.]
7 Teacher B:   Yes, but are they out in the woods or something?
8 Manne:       In Spain.
9 Teacher B:   Were they the caves you and your mother visited?
               [Manne is still standing, pointing at and tell-
               ing about his painting.]
10 Manne:      Yeah, you can go the whole way... [Manne is
               pointing at the painting following a painted
               line].
11 Teacher B:  Were you inside them?
12 Manne:      It was slippery in there cause there was water.
13 Teacher B:  Have you painted the water?
14 Manne:      Yes, is rises up like that, the blue part
               there.
15 Teacher B:  What is it that makes this spring?
16 Manne:      [resolutely] It is not spring!!
```

Teacher B poses a number of questions to Manne, giving him the opportunity to explain the meaning of specific colours (turns 12 and 14). Similar to the questions about what is `spring-like` in the music (Excerpt 1) are Teacher B's questions about what is "spring-like" in the painting during the talk (turn 15). She does not ask for *his* narrative and Manne emphasises his last response, `It is not spring!!` (turn 16).

The final excerpt below shows how children try hard to understand the pedagogical task they are participating in. They have painted everything they remembered from the talk they had after the Vivaldi introduction; the flowers, grass, snow etc. Mercer (1995) argues that meaning and knowledge is socially constructed in the classroom. Below we can see how the knowledge of spring has been constructed in the initial talk after listening to Vivaldi.

Excerpt 9

```
1 Teacher B:   Let's see if we can look at the next one now.
               Thank you very much, Manne. [She lays aside
```

		Manne's painting and places a new one in the 'TV screen']. Now here we have new artwork by a new artist. Who has painted this picture?
2	Elin:	Mine.
3	Teacher B:	It's Elin's. What have you painted Elin?
4	Elin:	Summer.
5	Teacher B:	How can we see that it's summer?
6	Elin:	The sun is out and the flowers and a cloud.
7	Teacher B:	And what colour are the leaves on the trees?
8	Elin:	Green.
9	Teacher B:	They sure aren't now when it's winter. [Elin shakes her head.]
10	Teacher B:	The trees are little green in the springtime too. Is there anything else you want to tell us? Thank you very much. [Teacher B picks out a new painting and hangs it in the 'TV screen'.]
11	Linus:	That's mine.
12	Teacher B:	What is it you've painted?
13	Linus:	A house.
14	Teacher B:	What else have you painted besides a house?
15	Linus:	Flowers and grass.
16	Teacher B:	What is this [points at spots]?
17	Linus:	A little snow.
18	Teacher B:	It's a little snow. Why is there a little snow?
19	Linus:	You can see it.
20	Teacher B:	What time of year is it in your picture?
21	Linus:	Summer.
22	Teacher B:	Is it summer? Do you think it usually snows in the summertime?
23	Linus:	Yes. It can also be a little windy in the summer.
24	Teacher B:	Yes, it can be windy in the summer. It's more likely that there's a little snow in the spring. Maybe it's a little warmer in the summer. Do you have anything else to tell us Linus?
25	Linus:	No.

All of the children's paintings are shown. Teacher B asks every child what is depicted in the painting, what the different parts of the painting represent and as a final question she asks which time of year is shown. Only two of the children say that it is spring; the others answer summer. A reason for this could be that the sun, flowers and green trees are symbols of summer for the children. In Turn 5, Teacher B asks for a definition of summer. Elin's answer `The sun is out and the flowers` (turn 6) is not quite adequate and Teacher B brings up the colour of the leaves. Defining summer can be seen as part of the overriding WO project dealing with how the seasons can be recognised (turns 5, 7, 9, 10, 20 and 22). In a few of the children's pictures snow is falling on the flowers (see Excerpt 1). Teacher B, doing her best to direct the picture analysis to the topic of spring, the "correct" interpretation, latches on to the snowflakes, clarifies her question and wonders if it usually snows in the summer in reality (turn 22); Linus answers her with a definite

`Yes!` In response to that question he also answers that `It can also be a little windy`. It is obvious that Linus remembers their talk about both snow and wind during the inspiration phase (Excerpt 1). But, despite talk about snow and wind, the pictures of most of the children have become pictures of summer. Images of the sun, flowers and greenness signify summer for the children.

The theme for the activity was springtime and after the final talk the teachers seemed confused of the result and one could argue that the children's idea of summer is not quite right. However, this is not discussed or questioned at all, nor are aesthetic matters thematised.

Discussion and Conclusions

The activity presented is intended to be a visual arts activity, as defined by the teachers, but I have argued that it is instructed as a WO project. The children are expected to illustrate springtime. But even the WO project seems to go wrong in some way; misunderstandings appear in the final talk. I will finally suggest possible explanations to why this activity ended up in an unexpected way for the teachers, and in a conceptual confusion and a non-visual arts activity for the children. I suggest that visual arts activities are often made subordinate to goals other than aesthetic learning (see also, Pramling Samuelsson et al. 2009) and that pedagogic dilemmas will occur due to the teachers' unclear aims and views of children's aesthetic learning and to teachers' ignorance of aesthetic matters. The pedagogical dilemma appears when the pedagogical intention, to create an art activity, fails. There are basically three problems related to the teacher's theories about children's learning processes, visual arts/aesthetics and knowledge hierarchies.

Learning and Teaching Models

Rogoff (1994) suggests three models of teaching and learning: "adult-run" and "children-run" instruction, and "community of learners". She draws attention to the notions underlying the models, namely development as *transmission* of knowledge, as *discovery* of knowledge by oneself or as *transformation* of participation, respectively. Following Rogoff, I argue that what is learned differs in the three models and that for artistic learning and aesthetic experience, guided participation seems to be the most fruitful model. In my data (Bendroth Karlsson 1996) there is a tendency for adult-run instruction in which the teacher-defined task is sometimes difficult for the child to understand or of very little interest to the child. And though the activity is "teacher-run" there are hardly any tools mediated for developing knowledge *in* or *about* visual arts. Anning and Ring (2004) argue that "narrow versions of drawing at school entry deprives them of a powerful mode of meaning making" (p. xi). I suggest that this is the case in the present study.

Visual Arts/Aesthetics

Efland (1979) points out the relationships between aesthetic theories, contemporary psychology and teaching traditions. Different aesthetic values call for different teaching methods. Pedagogic dilemmas arise when different traditions are mixed; for example, when mimetic products, which call for models to imitate, are asked for but the teaching method is more in line with the expressive tradition. This could be the case in this study. I will argue that the "Picture of Spring" task is teacher-run and one in which the teacher is asking for facts, a cognitive task which calls for an academic tradition with naturalistic preferences, in this case *illustrations* of springtime. But no models are provided, not in any kind of images, photographs, fine art, etc., or in nature. If the children were to make pictures of their emotional experience of Vivaldi's music, it would have been more in line with an expressive tradition. The expressive tradition can be conducted more as a child-run activity.

Knowledge Hierarchies

Here, the dilemmas are related to the way in which teachers prioritise knowledge which seemed more "useful" (see also, Anning and Ring 2004). In this study, the WO project is the goal. The activity loses its aesthetic potential. The visual arts activity is subordinated and one can ask: What did the children learn?

According to a socio-cultural perspective something is learnt. Is it possible that the children after this activity think that music can be understood literally and that visual arts activities are to illustrate or reproduce nature without seeing it? And it might snow in the summertime. One activity of this kind can be seen as harmless but if this is a common way of conducting visual arts activities for young children, which my previous research (Bendroth Karlsson 1996) suggests, we are laying a foundation to an attitude that visual arts are not important and that symbolic languages can be understood only in one way. For education in early childhood to promote the ability to communicate in and about visual arts adequate tools have to be provided.

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Chapter 6
Didactic Challenges in the Learning of Music-Listening Skills

Cecilia Wallerstedt

Introduction

Music education needs to challenge two things that appear to be common misconceptions of musical ability. Musicality is often spoken of as an inherited talent that a person either has or has not and as something that develops of its own accord regardless of the opportunities for learning the individual might encounter. In contrast, for a music education as proposed and exemplified in this chapter, the first premise is that human beings are not born musical or (incurably) unmusical (Howe et al. 1998). All people have the *potential* to develop musical behaviours. "The notion that anyone is 'unmusical' in any absolute sense runs contrary to the findings of the many research studies that have examined the benefits of supportive pedagogical strategies and environments on musical development" (Welch 2000, p. 2). Musical skill is something that you *learn*, it is not a 'gift'. The second premise is that the teacher has an important role in facilitating children's learning in music. From research that describes the interaction between a mother and an infant (Trevarthen 2002), we know that this interplay can be seen as having musical features. Turn-taking and imitation of pitch are aspects of the mother–child interaction, but also of musical communication. This finding has tended to be over-interpreted (Young 2005). It is an exaggeration to say that we are born musical and do not need any help to develop musical skills. To put it bluntly, to be able as a child to 'proto-musically' interact with your mother is not sufficient to be able to play an instrument in an orchestra as an adult.

Music in pre- and primary school is often regarded by teachers (and researchers) as a pedagogical tool, or a method. Integrating music (or some other aesthetic form, e.g. drama or visual art) with learning processes is said to facilitate learning in other domains, such as language or mathematics. Such reasoning is often grounded in research that started the so-called 'Mozart effect' (Olsson 2002). Rauscher et al. (1993, 1995) investigated if listening to music by Mozart could affect the result on

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a test in spatiotemporal ability (a kind of IQ test). The result showed that music listening had a positive, but brief effect on the spatiotemporal ability. Rauscher et al.'s finding soon won a hearing, with the ready help of the media, under the motto, 'Mozart makes you smart' (Črnčec et al. 2006). The music industry has tried to capitalise on this and music teachers have used it to legitimise their work (Črnčec et al. 2006). When discussing music in a didactic context, one question to pose is: Why should we have music in early schooling? The arguments are seldom based on the concept of music considered as a content, a domain of knowing in its own right. Instead, music teachers justify their work by emphasising music as an activity. Aesthetic activity is said to facilitate learning in mathematics, to support the development of language, to influence the social atmosphere and to be practical and therefore act as a counterbalance to the supposedly more important 'theoretical' subjects in school. It is well-known from research that teachers talk about music and aesthetics in this way (from a Swedish perspective, see Lindgren 2006). But it is far more uncertain that music has these beneficial effects on learning (Črnčec et al. 2006).

In this chapter I will lay the foundations for a didactic approach to music where the musical content is at the centre. I will start with a consideration of what the content of learning in music can be, that is the learning objects. I will then introduce a theoretical framework for learning, *Variation theory*, which also includes a method for studying teaching and learning called *Learning study*. To find out what the didactic challenges faced by teachers working with learning objects in music are, I will use an empirical study of three teachers trying to develop the ability to discern musical time (metre) in their pupils. The teachers in the study are not specialised in music and the school has no music profile. The children are aged 6–9 years. From the analyses of the data three themes appear. Challenges in the music teaching practice concern (1) dealing with the temporality of music, (2) posing promoting questions and (3) managing the visual and auditory dimensions of music.

What Are Learning Objects in Music?

A study of the didactics of music involves a consideration of what the 'content' of music is or could be. What should children learn within this domain? Imagine a teacher in preschool who plays Swedish folk music for the children and tells them about how life was in former days. Learning here is focused on culture and history. The music is used to enact the subject of history and make it come alive. It helps exemplify aspects of our cultural background. The music becomes a part of the *act of learning*, but not the *object of learning*; to use an important distinction I will introduce and use in this chapter (see also Bendroth Karlsson's example of painting to music where the music is the background and the painting is the figure of attention). The same activity could contain different objects of learning. When the Swedish folk music was played, the teacher could have directed the children's attention to aspects of the music instead. Questions such as the following could have been raised:

Is the tempo fast or slow or is the dynamic nuance loud or soft? Potential objects of learning could be to be able to recognise Swedish folk music as a genre, to discern the sound of a violin or to use musical terms such as piano (soft) or forte (loud).

We have now considered listening as a musical activity. Perhaps singing or playing is mostly associated with the content of music in school. But what does it take to be able to sing, or play an instrument, such as, for example, a drum? *What* has a person learned if he or she can play a drum (again, the premise must be that the drummer is not *born* with this knowledge)? What learning should the teacher facilitate? Variation theory offers a theoretical point of departure that helps us to answer questions such as these. Marton et al. (2004, p. 5) write that "powerful ways of acting spring from powerful ways of seeing". A powerful way (or maybe beautiful, rich or expressive) way of *playing* drums, springs from a powerful way of seeing, understanding or *listening* to music. If we have discerned fine nuances in pitch, then we will be able to notice if we sing out of tune, i.e. have a different pitch from the person who sits next to us in the choir. If the members of a rock band have not discerned different dynamic nuances, they probably play at the same dynamic level constantly. One way for them to develop as a band would be to discover that they can differentiate their play dynamically, i.e. start softly, then let the volume reach a climax and then fade out again. How you listen to music, even the music you play on your own instrument, determines how you can play (Bundra 2006; Cook 1990; Molander 2009).

Anthropologist Goodwin (1994) introduced the concept of *professional seeing,* which is said to characterise those who are skilled in specific professions. For example, archaeologists are experts at discerning aspects of humus and the painter is expert at discerning aspects of colours. In analogy, the knowledge of a musician could be described in terms of a professional way of listening, i.e. the ability to discern aspects of music (Pramling Samuelsson et al. 2009).

If the teacher's goal is to develop children's music-listening skills, where can he or she start? Children's everyday life is filled with music (Lamont 2008). Music is heard from toys that play melodies, the family's TV, the ringing phone, the radio in the car and in the public room (Young and Gillen 2007). The fact that the music is there does not necessarily mean that the children are listening, nor should it be presumed to be sufficient for them to learn to listen. Some authors even claim that children learn *not* to listen, to 'switch off' (Sims 1990). A way to start developing children's listening skills is to pay attention to the music that is present in children's everyday life, for example, in the melodies of toys or the songs that are sung in the preschool. From an ecological perspective, musical meaning is constituted in the relation between the listener and the music (Clarke 2005). The music gives affordances (Gibson 1979/1986), but these affordances pass by the listener who lacks the interest, experience or tools of the domain. From this theoretical view of meaning in music, the next step in facilitating children's meaning-making would be to direct their attention to *aspects of the music*, that is, to give them access to the tools of the domain. There are many ways of analytically understanding the phenomenon of music. Firstly, we have the aspects that capture the temporality of music, the extension in time: tempo, pulse, duration (rhythm) and form. Secondly, we have

the aspects that deal with tones and sounds, its 'vertical' structure: pitch, harmony and timbre. There is a large body of research describing how and when children are able to discern these aspects of sound (for an overview, see Forde Thompson and Shellenberg 2002; Trehub and Hannon 2006; Pouthas 1996). For example, the ability to discern a regular pulse has been tested in children only a few hours old. It has been shown that the child's heart rate is influenced when an irregularity appears in the pulse (Pouthas 1996). There are several problems with trying to build upon this kind of research result from a didactic or pedagogical perspective. One of the most conspicuous problems is that this kind of study is carried out in laboratories and not in classrooms or other settings close to children's everyday life. There is general agreement that the context in which the listening takes place has a decisive effect on the listening experience (North and Hargreaves 2008) and labs and classrooms are without doubt widely different settings. In school, the child does not exist in a cultural vacuum and is obviously under the influence of peers and, of course, the teacher. From a didactic perspective, it is of great interest to consider the child's perspective and this point of departure differs from that adopted in most psychological studies. What children say about music is normally judged from the professional adult musician's norms and is not explored for its own intrinsic value (Kellett 2000). Children are said to fail or succeed in music listening tasks. This is also problematic.

> Analysing children's responses in terms of the analyst's perspective, i.e. in terms of right or wrong according to a predefined criterion, does not help the teacher to 'get hold' of the children's understanding so that s/he can develop it further. (Wallerstedt et al. 2011).

Theoretical Framework and Methodological Approach

In the study from which the empirical data for the present chapter come, musical *metre* was the learning object, or more specifically, the ability to discern double or triple metre (or *time* in music). This has been shown to be a complex ability. It is not comparable with, for example, discerning pulse, which has been mentioned previously as an innate ability (Wallerstedt 2010). A researcher planned teaching in co-operation with a work team with the aim of developing children's skill at discerning time in music. This ability can be seen as an example of what has been referred to as a higher mental process, a professional, or *structured*, way of listening. The aim of the larger research project is to investigate what it takes to be able to determine if a tune is in two-four or three-four time, as studied from the learner's perspective. This object of learning has been put into practice as a research object in the form of a so-called *learning study* (Holmqvist 2006; Marton and Tsui 2004). This specific form of studying teaching and learning is described as a meeting-point between professional development for teachers and basic research on learning. The point of departure is an *object of learning*, i.e. something specific that the teacher intends the children to learn. From that, a lesson is planned within the framework of variation theory (see below). The lesson held by one of the teachers is documented

with a video camera and analysed. The lesson plan is revised and carried out with a new group of pupils. This cyclical process is repeated three times. The focus is to be aware of what the *critical aspects* of the object of learning might be. In this study 27 children (aged 6–9 years old) participated and they were all interviewed afterwards about their understanding of what appeared to be critical in the lessons.

The theoretical basis for learning studies is *variation theory* (Marton and Tsui 2004; Pang 2003; Tan 2009), a recent development of phenomenography. In the 1970s, phenomenography emerged as a way of studying phenomena in pedagogy and other areas (Marton 1981). The point of departure was to study phenomena from the perspective of the subject, the one experiencing a phenomenon. Instead of looking directly upon the 'object', the internal relation between a subject and object was studied. This is called *a second-order perspective* (Marton and Booth 1997). Pramling (1983) did one of the first phenomenographic studies. She studied children's conceptions of *learning*. She interviewed children, not with the aim of testing their capabilities, but to get close to their perspectives of their own learning in preschool. The result was formulated in terms of different categories of conceptions: learning as *doing*, *knowing* and *understanding*. From a *first*-order perspective, we can see that some ways of experiencing phenomena are more powerful than others. A didactic question for a teacher and also the variation theorist, is how a certain (powerful) way of understanding a phenomenon can be brought about. The analytical problem is to understand the differences between different ways of understanding, or categories of conceptions. The decisive differences between a more powerful way of seeing something and a less powerful one are called the *critical aspects* of the object of learning. A theoretical premise is that some kind of variation needs to exist before anything can be discerned. One aspect of the object of learning has to vary against an invariant background. A fan that makes a constant noise in a hall is not noticed until it stops, i.e. the noise appears in contrast to silence. According to the same principle, we would not notice genre as an aspect of music if all music were of the same genre, e.g. rock music. An important question from the perspective of variation theory is then: What are the critical aspects of an object of learning? If the object of learning is to recognise rock music, we would search for the features that are critical, from the learner's perspective. What is it that makes music rock music, according to the listener? Several examples would be needed before any generalisations can be made. But importantly, we would also need other genres (e.g. jazz or folk music) as contrasts, to be able to discern rock music. Marked drums might be one critical aspect of rock music. In that case, marked drums would also need to be separated from rock. Not all music with marked drums is rock music (it could also be folk music, for example). Once again, what the critical aspects are must be informed by the learner's perspective. According to the ecological perspective, for instance, the meaning in music is found between the listener and the music. As a teacher or a researcher, one cannot simply investigate the music and decide what it is. For didactic purposes, we need to investigate what aspects are critical for the listener. It is how the child hears the music that we need to clarify (to him or her as well as to ourselves as researchers and teachers) in order to challenge and develop his/her listening further. The latter is the point of a second-order perspective.

As already mentioned, in the perspective of variation theory, the point of departure for studying teaching and learning is an object of learning. From this perspective, the object or content of learning is considered more decisive than the form of teaching. This fact makes it well-suited to a didactic approach. Analytically, the object of learning can be divided into the *intended* object of learning (what the teacher has planned for), the *enacted* object of learning (what is made possible to learn, as known from the researcher's analysis of the patterns of variation in the lesson) and the *lived* object of learning (what the children say about the object of learning). It is of crucial importance to find the intersection of the teacher's and the learner's perspective, or to coordinate the perspectives (as Pramling and Pramling Samuelsson write in the introduction to the present volume). It is at this intersection that the teacher is able to contribute to the children's understanding.

Didactic Challenges in Music-Teaching Practice

In this chapter, excerpts from the three lessons in the learning study and from the interviews will be used to highlight the problems that teachers and children face in the work of developing music-listening skills. The primary focus here is not on the concept of metre (or time) but more general challenges in the area of music-teaching practice. I will briefly introduce the three themes of challenges.

Metre is just one example of the temporal aspects of music. These demand particular attention. When adopting variation theory, comparisons are essential for discerning variation. To be able to compare pieces of music (hear the commonalities or contrasts), the listener must call to mind previous experiences of music listening. Comparisons demand some kind of simultaneousness, but in music comparisons are always diachronic, i.e. separated in time. We cannot 'see' or hear two tunes at the same time. This fundamental problem is not something that, for example, a teacher of mathematics needs to handle. He or she can easily show and point to, for example, two geometrical shapes, or two ways of solving a problem, on the board at the same time. A triangle can literally be displayed together with a rectangle. This is not the case for music and the examples of one piece of music in two-four time and one in three-four time. Comparing musical passages is a question of remembering music.

The second theme that the teacher of music will face is the relation between *music* and *speech*. Historically, this relation is long-standing and motley. Advocates of the so-called *autonomous* view of music have maintained that music is a language in itself. It is impossible and therefore unnecessary to try to translate to or from music (for a discussion, see Andersson 1995). At the same time, others (with heteronymous views of music) have argued that the meaning of music can be expressed in words (Andersson 1995). An example of this is the famous composition *The Four Seasons* of Vivaldi. He sets a poem to music. One can hear the rippling stream and the raging storm in his music. Regardless of whether the meaning of music (or illustrated by music) is seen as something that can be verbalised or not, the verbalisation of music fills important *pedagogical* functions. For example, the listener's focus of attention (cf. the introductory chapter of this book) can be changed by speaking about the music.

Finally, I will consider *dimensions of variation*. A theoretical point of departure for the following study, as already mentioned above, is that an aspect that varies against an invariant background makes the former aspect discernible. What does this imply for music pedagogical practice? In the empirical data analysed in this study, it becomes evident that the variation planned by the teacher (the intended object of learning) does not always correspond to the variation experienced by the children (the lived object of learning). A complicating factor is the relationship between what may be referred to as *the auditory and the visual aspects of music*.

Didactic Challenge 1: Getting a Grip on the Temporality of the Music

In all communication about music a complicating factor exists that can hardly be found in other forms of arts. If two persons stand in front of a work of visual art, one could highlight a detail by physically pointing at it. "Here, look at this line, see how it shifts from green to blue!" Speaking like this is comprehensible to interlocutors and observers standing in front of a painting or a sculpture. The same is not possible in the case of music (Young and Glover 1998). Firstly, music is transient (something shared with other performance arts such as theatre and films). Secondly, music is invisible. In fact, it could be argued that music has become increasingly invisible over time. About a hundred years ago the most common way of listening to music was to see the musicians playing. Today we often hear recordings of music, on the radio or from a CD. In this way, albeit paradoxically, we can say that music has become increasingly invisible over time (Bergeron and McIver Lopes 2009). A resource available to us for sharing an experience with others, when unable to point at it (e.g. the music), is to transduce our impressions to another modality (Pramling and Wallerstedt 2009). With our voices we can mimic a sound in the music, we can literally capture the music in signs or illustrate an aspect of the music with a gesture (like a conductor that shows the metre or the dynamic nuance with his or her hands, eyes or other part of the body (Sandberg Jurström 2009)). Two or more persons listening to the same CD can say to each other 'this' waving their hands. Communicating in such a way always implies a difficulty and uncertainty as to what 'this' refers to. Although the same term ('this') is used, it does not necessarily refer to the same aspect of, for example, the music from both listeners' perspectives. When it comes to music, this may not be an everyday problem, but in a pedagogical setting—and for a didactic purpose—it is of pivotal importance. The teacher who wants to make a certain aspect of the music audible to someone needs to figure out what aspect that is at play for a child who speaks about the 'this' or 'there' in the music. For many didactical purposes, verbal language seems to be a necessary resource (Pramling and Wallerstedt 2009, also this book). Speech (verbal language) offers finer possibilities for directing and coordinating attention between listeners (e.g. teacher and children). If, for example, a listener makes a gesture to 'point out' a piano in a piece

of music, it is hard to distinguish a piano from a grand piano, a harpsichord or a synthesiser. I will come back to this issue later and give empirical examples.

One way of representing the outreach of music in time is to count. Bamberger (1991) studied children's conceptions of what to count in a rhythm. She found two main strategies among her informants (children aged approximately 8 years). The first strategy is what Bamberger refers to as the figural way of counting, every sounding element is counted. This way of counting the music may be exemplified by the well-known song "Twinkle, twinkle, little star". In the first phrase, the one who counts in a figural way counts to seven. The second way of counting is what Bamberger refers to as the metric one, when every beat of the pulse is counted, irrespective of it coinciding with a sounding element. The first phrase of "Twinkle, twinkle, little star" has eight beats, seven that also are part of the motive and then an eighth beat that fulfils the metric phrase with a silence (or a long tone that rings). As effectively illustrated by Bamberger, asking someone to count to a piece of music can function as a way of getting access to how the music is perceived by the listener, i.e. finding out what is meaningful from his or her perspective. This is one way to gain access to the learner's perspective on the music as a perceived phenomenon.

Let us consider an example from the empirical study previously presented. The teacher has opened the lesson by showing the children two and three beats to a bar (double and triple metre) on a drum. She has played and the children (also using drums) have imitated. The teacher has mentioned that it could be a help to say "one, two, one, two…" while playing two beats to a bar and "one, two, three, one, two, three…" while playing three beats to a bar. The rhythms that they play are regular quarter notes (crochets). They stress every other beat when they play two beats to a bar and every third beat in three beats to a bar. The teacher continues the lesson in an exercise where she makes a movement and lets the children guess what time the movement is intended to illustrate. Several meanings of counting to music appear in this situation, from a child's perspective.

Excerpt 1: Counting as a way of representing the time

1. Teacher: Now I'm going to do like this, curtsy and then you have to guess if there are two beats or three beats to a bar (if it's in two-four time or three-four time). And then you can do it too, to see if we're doing the same (bends her knees and stands up keeping time).
2. (Several children copy the teacher's movements.)
3. Teacher: Does Eskil know what time this is in? What can you count to? (Still continues with the movements).
4. Eskil: Nine hundred.
5. Teacher: No, I mean if you can count to two or three, like we did before when we counted the bars.
6. Eskil: Three.
7. Teacher: Can you count to three when I do this, while I bend my knees?
8. Eskil: One, two, three (bending his knees at the same time as the teacher and counting the number of bends, i.e. every other beat in the two-four time that the teacher wants to illustrate).

9. Teacher: Watch me now! (Continues with the movements, saying one, two; one on the way down, two on the way up.) That's what I mean (continues to bend her knees and count, laying the emphasis on one). How many beats to a bar can that be? What do you think Cajsa?

10. Cajsa: Two beats to a bar.

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15. Teacher: I'm going to clap (starts clapping her hands).

16. (Several children copy her and clap their hands.)

17. Teacher: Listen first! (Places her hands over her ears. Claps two beats to a bar, accentuating every other beat.) Fredrik?

18. Fredrik: Two beats to a bar.

19. Teacher: (Answers by counting while she claps) one, two, one, two.

If we consider time signature from a *first-order* perspective, that is, from a previously known and generally accepted definition of the phenomenon, we can say that Eskil gives the wrong answer several times. But if we consider his responses from a *second-order* perspective instead, we get information about different ways of understanding the teacher's question. From a first-order perspective, the right answer to the teacher's question is two beats to a bar. When we get access to Eskil's perspective, certain aspects that seem to be critical for discerning time (the meaning of two beats to a bar) appear. In turn 4 he says how far he can count to, which is indeed a reasonable answer to the question posed by the teacher. Eskil's answer indicates that he has not yet discerned what should be counted in this case. The point here, from the teacher's perspective, is that her movement in keeping and illustrating time is what should be counted. In turns 6 and 8 Eskil shows that he now follows the teacher's movement, but does not pay attention to the accented beats that open every new bar. He counts full bars instead. Discerning the pulse and at the same time the accented beats that limit and mark out a bar appear to be critical aspects of discerning time in music as viewed from this child's point of view.

From the teacher's perspective, the movement is a clear representation of the time of the music that she wants to show. From the children's perspective, this does not appear to be clear. The teacher's verbalisation in the form of counting (turn 9) seems to function effectively in making the time audible (turn 10). In the next sequences (turns 15 and 19), the teacher chooses to clap, which is another way of representing the music. There is a remarkable difference between curtsying and clapping; curtsying is silent but clapping is audible. Is it possible to talk about the musical aspects of pulse and accentuated beats if they are completely soundless? The teacher does this in the lesson, but it seems to be confusing for the children. Time in music is something abstract; it exists so to speak in the listener rather than in the music. The related term *metre* is described in *Oxford Music Online* as if it were "more an aspect of the behaviour of the performers and listeners than an aspect of the music itself" (metre 2009). The forms of representation that are used in the lessons seem to function as tools (Vygotsky 1978) for the children when they try to

figure out what the time could be, in a similar way to a ruler functioning as a tool for measuring distances. In the lesson, the teacher and the children make movements, they clap, they count or they play on a drum along to the music, all to try to get a grip on the time of the music, to be able to discern if it is two or three beats to a bar. Later on, in the interviews, some further examples of this can be seen:

Excerpt 2a: Pretending to play as a way of representing the time

The interviewer plays two musical examples of two beats to a bar on a CD.

56. Anna: Two beats to a bar.
57. I: Two beats to a bar. How do you know that it is two beats to a bar?
58. Anna: (Clapping and swinging to the music. This maracas, it has, one, two, one, two… (Keeps the beat with her hand and stresses the word one).
59. I: One, two (counts along), well, yes. Ok. And then this (plays an example with three beats to a bar)?
60. Anna: (Clapping along the beats and counts) one, two, three… (With an accent on three).

Anna's way of answering indicates that she has paid attention to the percussion instrument in the recording, referred to as a maracas. She seems to follow the accents that it ('the maracas') is playing. They help her to decide when it is two or three beats to a bar. Other examples are played to her, for example, a version identical to the previous one (in instrumentation, melody etc.) except that it is in two beats to a bar and that the new arrangement has neither drums nor percussion instruments. Anna hears this music as two beats to a bar as well.

Excerpt 2b

63. I: Ok, how do you know that?
64. Anna: (Claps with very small movements and counts) one, two, one, two… It is something, something like, an, an instrument that sounds like two beats to a bar.
65. I: Well. What instrument do you think it is then?
66. Anna: I don't know.
67. I: No, but you hear something. And how does it play when it plays two beats to bar?
68. Anna: (Claps loosely and counts) one, two, one, two.

What Anna shows here is that she discerns the accentuated beats that constitute the time, without being dependent on the instrument (maracas) that she used as point of reference in the first place. Several children do not make this separation. In Bamberger's (1991) words, listening to music in a metric way is necessary for discerning the time. This implies that the pulse must be discerned even in the absence of a percussion instrument that has a rhythm identical to the pulse. Thus, it sometimes requires that one listens metaphorically to a sound that is not there. Note that the forms of representation (in this case clapping and counting) are ways for Anna to test out what time it is, a way of *thinking* and *listening*, but also a way of *communicating* about the time with the interviewer. In Vygotsky's (1978) terms, we can say that speech is a tool for communicating with others as well as for thinking and discerning.

Lars is one of the other children that has been interviewed. In similarity to Anna, Lars has taken his point of departure in a percussion instrument (he calls it a tambourine) and he pretends to play along to the different musical examples, as a way of trying out the time. When encountering an example without percussion instruments in it, Lars says:

Excerpt 3: The abstract aspect of time

59. I: Ok, and this?
60. Lars: None.
61. I: No time?
62. Lars: I only hear a trumpet.
63. I: Yes, yes exactly. Is there no time if it is no tambourine playing?
64. Lars: No (in a quiet voice).
65. I: How about this? (An example in two-four-time is played, a guitar plays the melody and there is a percussion instrument in it.)
66. Lars: (Makes a movement as if he was playing the tambourine and he pretends to play in sync with the music.) Two beats to a bar.

When the percussion instruments do not play, time seems to disappear from Lars' perspective (as far as we can tell from this situation). It becomes clear that it is necessary to be able to imagine the sounds that do not continuously sound, namely the pulse and the accents, to be able to discern the time. Anna has her own clapping and counting as tools when the percussion instruments stop playing, which Lars has not under these circumstances.

The issue of representation appears to be challenging to the teacher and the children. This is closely related to the verbal dialogue that follows in the 'footsteps' of the representation. I will come back to this excerpt.

Didactic Challenge 2: Asking Promoting Questions

Talking about musical experiences can encounter scepticism. The risk is assumed to be that the musical experience will be 'talked to death' (Zerull 2006). However, several studies have shown that verbalising listening impressions has facilitated the listener's attention. For example, children that verbalise what they hear when they participate in ensemble playing give evidence of more careful listening (Bundra 2006). In the pedagogical practice exemplified in this chapter, problems appear when the teacher does not clearly put into words what she intends children to discern. In the first lesson, time was spent on introducing the concept of 'being in time'. The teacher used the expression of being 'in time' in contrast to being 'out of step'. Movement was used as a way of representing the sense of being in time. The children were told to walk 'in time' and then change to move 'as they wanted'. In the second lesson, this activity was excluded. It was taken for granted that children spontaneously move in time to music. The plan was to focus on the accentuated

beats instead. The work team decided that the teacher should start the lesson by playing music from a CD and letting the children move freely to the music. From that she should move on by adding the accents. But when the children started to move to the music, many ways of moving were visible and far from all moved in coordination with the tempo of the music. The teacher stopped the music and asked the children what it felt like doing the movements and 'did it fit?' One of the girls said that it felt strange.

Excerpt 4: A question of feeling or listening?

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Teacher:  Why did it feel strange?
Ingela:   Because it was cold.
Teacher:  It has nothing to do with the tempo or the beat?
Carina:   I thought it was cold.
Ingela:   I felt that it hurts.
Teacher:  Lennart, what did you think of? Did it fit the
          music?
Lennart:  Yes.
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The same word—'it'—may concern completely different things from the teacher's and the children's perspective, as evident from this conversation. The conversation can go on in a functional way without the interlocutors necessarily realising that they might be talking about quite different things. The teacher never asks the children explicitly if they perceive that their movements fit the tempo of the music. In this lesson focused on listening, the teacher seldom asks how the children *hear* the music, but instead asks them how they *feel*. She wants the children to discover that something special will 'fit', but this intention is never explicitly formulated during the lesson.

The questions posed by the teacher direct the children's attention to (and from) different aspects of the act and object of learning. Therefore, what the teacher says, the kinds of questions she asks, are crucial for what can be learnt in the lesson. A didactic challenge for a teacher is to know *how* and *about what* questions should be asked. To be able to ask productive questions the teacher needs to be quite clear about what the object of learning is (i.e. what she intends children to discern) and what aspects of this 'object' might be critical and interesting. The questions that the teacher asks the children have at least three different functions. From a first-order perspective, the questions can give answers to whether the children have paid attention to what the teacher intended them to notice. In this way questions have a kind of controlling function. If we return to excerpt 1, where Elias counted to the music, we can see that he had not realised what the teacher had expected and his answer was 'wrong' if considered from a first-order perspective. If we look at the answers from a second-order perspective instead, we gain access to possible ways of understanding a phenomenon. In excerpt 4, we gained information about what it felt like for the children when making movements to the music. It reminds us of, or makes us conscious of, the fact that there are several ways of getting a movement to 'fit' the music, not only with respect to the musical tempo, but also, for example, in connection with the character, the melody or something else. The third function of the teacher's questions is

to help the children to pay attention to something that is interesting in a domain of knowing (in this case, music). In the next example we will see that when the teacher asks if there are any differences in the time (metre) in the musical pieces, the children start thinking about this aspect of the music (which is the point of the lesson). This excerpt is from the same lesson as above. The children have just finished an activity in which they moved to different pieces of music in two- or three-four time.

Excerpt 5: A directing question

Teacher: But are there any differences between the time in those tunes? In the first one I counted, did you hear: one, two, one, two…
(The children fall in with the teacher's counting and clap along.)
Teacher: But the next one was different. It went: one, two, three…
(The children count together with the teacher and clap along, in time.)
Teacher: Was there any difference? Carina, did you hear any differences?
Carina: Two claps or three claps.
Teacher: One, two, one, two… or one, two, three, one, two, three… It does not necessarily need to be claps, but two in two beats to a bar and three in three beats to a bar. Anton?
Anton: In two beats to a bar one can do forward two times and in three beats to a bar one can do backwards with your head three times. (He shows a movement with his head.)

The questions asked by the teacher help to direct the children's attention to the difference between clapping in two-four time and in three-four time. Anton makes a valuable contribution. His illustration shows that the time does not need to be represented only by clapping but also by head movements. This suggestion offers the possibility of generalising the features of the different times. One can count, clap or nod two beats to a bar as well as three beats to a bar. Carina expresses the difference between two and three beats to a bar through solely focusing on one form of representation. It is in the conversation between the children and the teacher that their different perspectives on the object of learning can be co-ordinated, a 'didactic contract' can be established. In the vocabulary of variation theory, the dialogue serves as an arena for the meeting of the *intended* (what the teacher has planned) and the *lived* (what the children have experienced) *object of learning*.

Three functions of questions have been mentioned here. Of course, there are other functions served by the teacher asking questions, not to mention children's questions. One purpose of asking a question could be to get the children involved in an interaction, but I will not elaborate here on this or other functions of asking questions in the classroom.

Didactic Challenge 3: Managing Dimensions of Variation

So far I have studied excerpts from the lessons with reference to the dialogue between the teacher and the children and I have tried to emphasise the important role that the questions play. In the framework of variation theory, it is also of great interest to pay attention to the patterns of variation that are offered in the lessons, that is, what is referred to as the enacted object of learning. A theoretical premise, as already mentioned, is that what varies can be discerned, as it constitutes a 'figure' against an invariant 'background'. In the lessons, two beats to a bar is constantly being contrasted with three beats to a bar, while, for example, clapping is kept constant. Through clapping (constant and background) two and three beats to a bar (varying and figure), the children are given the opportunity to discern time as a phenomenon. However, gaining access to the perspectives of the children in the lessons has revealed that the children discern other patterns of variation that are present in the lesson than the teacher (and researcher) was unaware of beforehand. This realisation is fundamentally what motivates studying critical features of objects of learning as an empirical rather than a merely theoretical issue.

The following excerpt is from the first lesson. First the children were introduced to the concept of being in time (as explained in connection with excerpt 4). They have continued with an exercise consisting of clapping two and three beats to bar. The teacher and the children sum up the lesson in the following dialogue.

Excerpt 6: Variation in the dimension of representing

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Teacher:  Were there any differences in the time?
Anna:     No!
Teacher:  Silla?
Silla:    I thought there was! There was a difference.
Teacher:  What was the difference?
Silla:    We did in different ways! When we went in time, we
          stood up and walked in a circle. When we clapped in
          time, we stood still.
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The variation that Silla remarked on does not concern the differences between two and three beats to a bar. She has experienced the difference between walking around and standing still (and clapping) to the music. The didactic challenge for the teacher, from this perspective, is to make the 'background' in the lesson as invariant as possible, so that the features that make the difference will form the figure that the children notice. Intuitively, it may seem that the more the aspects vary, the better it is for learning. Yet this example (excerpt 6) clearly shows that what is merely a detail or something arbitrary from the teacher's or researcher's perspective is the prominent aspect from the child's perspective. In excerpt 5, where two beats to a bar was being varied through counting, clapping and nodding, variation was used in a systematic way. The features of two beats to a bar have to be separated from the features of clapping. Clapping is not synonymous with two beats to a bar. Two beats to a bar can also be represented by nods and hands can also be used to clap three-four-time.

In one of the following interviews, further examples are given of how an aspect that varies can become the figure of attention for a child. The interviewer uses a drum and plays different examples of two and three beats to a bar, which she then

talks about with the child. The rhythm is constant—quarter notes only. The time (metre) is indicated by accents on the first beat of a bar, every second or third beat to the bar.

Excerpt 7a: Variation in the dimension of dynamic

115. Interviewer:	I'll play one and then you have to guess if you think that this can be two beats to a bar or three beats to a bar. What do you think about this one? (Plays two beats to a bar, using two hands.)
116. Dan:	It seems like four beats to a bar.
117. Interviewer:	Four beats to a bar? Why do you think it's four beats to a bar?
118. Dan:	It sounds so loud.
119. Interviewer:	Sounds so loud. Mm, this one then, what can it be? (Plays two beats to a bar in the same way but more softly)
120. Dan:	Two

Between the first (turn 115) and the second example (turn 119), the way of playing and the time are invariant, but the dynamic nuance varies. It seems to be the latter that draws Dan's attention, as seen in the following utterances (turn 121–124). From Dan's point of view, it appears that a principle could be analytically formulated as: the softer the beats on the drum, the shorter the number of beats to a bar.

Excerpt 7b

121. Interviewer:	Two, mm, this one then? (Plays even more softly.)
122. Dan:	One.
123. Interviewer:	OK, this one then?(Plays the same way but very loudly.)
124. Dan:	Five! (Lies down on the floor.)

The principle of variation seems to function in two ways. One is the interviewer's possibility of trying out if it is in fact the dynamics that Dan has paid attention to, thus finding it to be the decisive aspect of time in music. If the interviewer had varied the dynamic nuance as well as the tempo, it would have been hard to find out if it was the tempo or the dynamic that Dan focused on. Perhaps a fast two beats to a bar could be taken for a three beats to a bar and an even faster for five beats to a bar? From the interview data, we have sifted out basic data that support the conclusion that dynamics is the prominent aspect of the sound for Dan. Hence, the first function of variation here is that it can be used as a way of getting access to the child's perspective. The second function is linked to the first one. The interviewer (which could have been a teacher as well) gets a 'didactic clue' or indicator in this situation. To give Dan a chance to discern the critical aspects of time in music, the dynamic nuance has to be kept constant (invariant). When the teacher plays two beats to a bar and three beats to a bar in the same dynamic nuance, Dan is challenged in his idea of what constitutes time in music. At the same time, time/metre is discernable through a regular variation (within a bar between accentuated and unaccentuated beats).

I have previously argued for the transient and invisible nature of music as foundational to the domain-specific challenges to music education. In the pedagogical

setting, the teachers (and children) have to strive constantly to make the music visible or stable to be able to coordinate their perspectives. The listeners (the children and the teacher in the lesson) constantly transduce their impressions of the sound into other modalities, or forms of representation. We have seen examples of music being represented by counting, clapping and different forms of gesturing. These modes bring a visual dimension into the listening activity. For example, the children are asked to say what time the teacher is representing when she does her curtsies. The visual aspect appears on many occasions, as in the following short excerpt. In the third lesson, the teacher plays on a drum and the children play along. The teacher wants to make clear the concept of being 'in time' (or 'keeping time'). The teacher plays a steady beat and asks the children to imitate.

Excerpt 8: The auditory and visual aspect of being in time

(Everyone is drumming together, in time.)
Teacher: It feels like we do simultaneously, everyone in time!
Jonna: It sounds like that.
Lars: I do exactly the same hand as you.

Two ways of experiencing what the teacher and researcher refer to as 'in time' are revealed here. For Jonna it is a matter of a sounding 'sameness'. The teacher's, her and the other children's drumbeats are sounding simultaneously. It appears from this excerpt that Lars experiences 'in time' as something bodily and visual. The same hand does not have anything to do with the *sound* made by the hand beating on the drum. Being able to discern the auditory sense of being in time, as distinct from a bodily or visual sense, appears to be a critical aspect of discerning time in music. When the sound comes from a loudspeaker and the players are therefore out of sight, it would not be enough to 'look for' the time, as Lars does.

The matter of hands comes up again in another interview.

Excerpt 9a: Ella and the hand that hits the drum

45. Interviewer: And I thought I'd play a bar and then you have to say what it seems to be. What do you think this is, for example? (Plays two beats to a bar, alternating between the right and left hand).

46. Ella: Two beats to a bar.
47. Interviewer: It was two beats to a bar. OK, why do you think that?
48. Ella: Because you have two hands.
49. Interviewer: Yes, OK. What about this then? (Plays three beats to a bar. One beat with one hand and two beats with the other).

50. Ella: Three beats to a bar.
51. Interviewer: Three beats, OK. Why is that so? I still have two hands (holds up her hands). So what happened now?
52. Ella: You do one (beats a knee with one hand) and then two (showing this with the other hand).
53. Interviewer: Two with this (indicating the left hand), exactly. If I do this then? (Plays two beats to a bar, using only the right hand.)
54. Ella: One beat to a bar.
55. Interviewer: One beat to a bar. Why?
56. Ella: Because you are doing it with only one hand and then it sounds like one beat to a bar.

In the first two examples (turns 45–52) the number of hands that play on the drum is invariant, right and left hand alternating. The time of the music varies, from two beats to a bar to three beats to a bar, which means that the teacher plays the first beat with one hand and the other two with the other hand. In the first and third case time is invariant (two beats to a bar) and the number of hands that play varies, both the right and the left hand in the first case and only the right hand in the third case. In all three cases, Ella relates her explanation to something visual, namely the number of hands she sees playing on the drum. An explanation that Ella uses is that the number of hands that play shows the musical time. Two beats to a bar is played with two hands and one beat to a bar is played with one hand. This conception is challenged when three beats to a bar is also played with two hands. When challenged further, Ella pays attention to the placing of the hands.

Excerpt 9b

57.	Interviewer:	Yes, that's right. Er, we'll do this way then (three beats to a bar with one hand).
58.	Ella:	Three beats to a bar.
59.	Interviewer:	Really, why?
60.	Ella:	You beat once hard and then twice (slow?) lower (softer).
61.	Interviewer:	Yes, that's right. Yes, that's exactly what I did. And what about this then? (Plays two beats to a bar using one hand.)
62.	Ella:	Two beats to a bar.
63.	Interviewer:	OK, why?
64.	Ella:	Because you do it hard one time and loosely one time (demonstrating this on her knee).

In this sequence, the number of hands is invariant (one hand that plays) while times varies (from two beats to a bar in turn 53 and three beats to a bar in turns 57–60 and back to two beats to a bar in turns 61–64). In the latter two examples, Ella changes her strategy of explanation from being concerned with something visual to something auditory. She talks about hard and loose beats, which seems to refer to what are called *accented/unaccented beats* in music theory. The latter strategy leads to the right answer in the last example, to the same problem that she did not solve earlier (two beats to a bar played by one hand, turns 53–56).

The variation that is planned and experienced in the music lessons, or in an interview such as the one here, has two dimensions—one visual and one auditory. This empirical result poses a particular didactic challenge. If the teacher wants to plan the enaction of the object of learning in a way that will clarify a particular aspect, for example, the contrast between two and three beats to a bar, then it might seem to be simply a matter of contrasting these auditory aspects. But in the pedagogical setting, where music has to be visualised or 'fixated' for learners to be able to communicate about it, the visual aspect is also important and even tends to dominate the activity. In the present study, it is not the difference between how two and three beats to a bar *sound* that catches the learner's attention, but the difference in how they *look*. While visualising music in this way may lead to difficulties for learners, it is important to point out that it is not an end in itself to try to eliminate the visual aspect of listening, as paradoxical as this may sound. It is obvious that it is important to the listening experience (Davidson 1993). On the basis of the empirical data that have been analysed in this chapter, it is possible to say that the visual image of the musical time works as a tool for listening. It seems that visualisation works as a way of thinking, more or less successfully. Later in the interview, Ella is asked questions about the time of a piece that she can hear being played by a hidden drum (played and held by the interviewer behind her back). When there is no longer a visual aspect to rely on, the utterances by Ella indicate that she persists in the image of the interviewer's hands and the drum, even if they are now invisible. In the next excerpt all examples are in three beats to a bar.

Excerpt 9c

75.	Interviewer:	Two beats to a bar. Mm. Now I'll do like this, I'll do it behind my back (holds the drum behind her back). What do you think this is? (Plays three beats to a bar.)

76. Ella: Three beats to a bar.
77. Interviewer: This one then? (plays three beats to a bar in a faster tempo).
78. Ella: Three beats to a bar.
79. Interviewer: OK, why do you think so?
80. Ella: Because it sounds as if you do one time (hitting her knee once), two, three (marking two beats with the other hand on the same knee). One time (hitting her knee once), one, two, three (hitting her knee three times with the other hand and doing it again).

81. Interviewer: Yes, OK, so it's one plus three, four.
82. Ella: Yes.
83. Interviewer: Mm. This then (playing three beats to a bar in a quick tempo).
84. Ella: Two beats to a bar.
85. Interviewer: OK, why?
86. Ella: Because it sounds as if you do one time (making an accented beat on her knee with one hand, then an unaccented beat with the other hand).

An additional feature of the problematic nature of discerning time in music (and of interviewing children about this discernment as well) is evident here. In turn 80 there is an inconsistency in what Ella says, that the interviewer does not follow up on. Instead, the interviewer draws a conclusion of her own (turn 81). In turns 83–84 there are indications that the tempo might play a role in how time in music appears to the listener.

Summing up

The picture of children's ability to discern time in music has become more and more complex during the process of analysing the empirical data. The ambition here has not been to show all the critical aspects of discerning time in music, but to point to findings that can be of general interest to early childhood education in music, particularly in regard to listening to music. The result has shown the importance of

coordinating the teachers and the children's perspectives. When the teachers have planned to make generalisations about the music possible, the children generalise patterns in representations, i.e. what they have done when they have listened. When the teachers take certain accented beats for granted, the children discern and count other accents. When the teachers talk about what one can hear, the children talk about what they can see. There are numerous examples of this. When we try to facilitate children's musical ability, listening is fundamental. When we try to coordinate perspectives on music, both questions and patterns of variation are functional. Clarifying what is 'at play' in appropriate words seems to be of crucial importance.

As said in the introduction of this chapter, musical skill is a product of learning and not an innate gift. The teacher plays a very important role in this learning. Music is a major element of our culture and children 'meet' it almost everywhere. Therefore, everyone should be given the opportunity to learn to listen, to be able to interpret others' expressions and to express him/herself in music. Preschool should be the self-evident place to begin this learning process.

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Chapter 7
Moral Discoveries and Learning in Preschool

Eva Johansson

Introduction

Morality is part of children's lives from the time of their first relationships (Damon 1990). In a broad sense, morality is viewed as a relational and societal construction related to meanings, which are shared and communicated by members, situated in a specific society, in a specific practice, in a certain time and with a specific history. Children's moral discoveries involve their personal history as well as the values and expectations of the embedded culture. Morality is not caused by the development of some single factor, nor is it a product of a sudden shift in cognitive level; rather, it is a continuous, overlapping process of developing functions, experiences and meanings.

Children have access to the cultural values and belief system as soon as they start to communicate and can make inferences about their social interaction. This makes preschool an influential meeting place for children's moral development. In preschool, children experience and express moral values, and early childhood moral education is a matter of helping children show consideration for the self and for others (Johansson 1999). The child is driven by a desire to participate in and understand others' experiences, rules of interaction, and how to influence others (Dunn 2006). Learning about moral values, however, does not take place by itself. It is very important that teachers take as their starting point children's interest in values in order to challenge and extend moral reflections and learning. This means developing a life-world-based didactics founded on the idea that morality is relational and bodily experienced and communicated in everyday interactions in preschool. Closeness to the child's life-world is essential in this kind of didactics.

The starting-point for work with children's morality is often everyday conflicts among children. In their daily interactions in preschool, children confront moral dilemmas (Dunn 2006; Johansson 2006; Killen and Smetana 2006). These situations are important for children's moral discoveries (Johansson 1999, 2007a) and for teachers' didactics. Values become apparent to the children when they interact with others, especially when confronted with different values. Conflicts of rights

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as well as acts that threaten one's own and others' wellbeing hold potentials for children's moral learning.

In this chapter, issues of importance for children's moral learning in preschool will be discussed. The relational character of morality, interdependence and the concrete encounters between children and teachers constitute an important basis of insights into moral values (Johansson 1999, 2007a). Teachers' didactics, the behaviour of teachers and their construal of the situation must be included in the moral construction that children are attempting. This raises questions such as: What aspects are essential in children's moral discoveries and how can teachers encourage children's moral learning? The discussion is based on previous studies of morality in everyday interactions in Swedish preschools (Johansson 1999, 2002, 2007a, b). The aim has been to study young children's lived experiences of values and norms concerning treatment of and behaviour towards each other in everyday life in the context of preschool. The theoretical basis for the investigations referred to is the life-world (Merleau-Ponty 1962). The life-world is related to a perceiving subject, a subject that experiences, lives, and acts upon the world. The life-world is lived and experienced by the subject and at the same time it is the world towards which the subject's life is directed. Children's lived morality is seen as part of their emerging personal life philosophy. There is also an intertwined relationship between subject and body; furthermore, the body is central to all our being in the world. The child's body is not only an object; it is a union of senses, thoughts, emotions, language and motor actions. The child is in communication with the world and with other people. The child creates meaning and is able to understand other people by means of their bodily existence in the world.

Moral Learning: Closeness and Distance

In the following section, we will look at some interactions between toddlers in a Swedish preschool and analyse some crucial dimensions of the children's moral discoveries and learning. The interactions have been chosen from a study (Johansson 1999) of toddlers' experiences of moral values and norms in everyday life in the context of a Swedish preschool. The daily interaction of 19 toddlers (1–3 years old) was video recorded over a period of 7 months. The study showed that morality was an important part of the children's life-worlds. The children defended and valued their own rights and cared for others' wellbeing. The children also gave power a moral value, for instance, the power to maintain rights and shared worlds. Moreover, power came from the assertion of rights and from the unity of sharing worlds. Children in powerful positions were also highly esteemed by the other children. Positions of power were related to age as well as physical and psychological strength.

The findings in this investigation revealed that conflicts of rights as well as acts that threaten one's own and others' wellbeing held potential for children's moral learning. A child can learn about morality under certain important conditions; these include: *the other's reactions*, what the implications and *consequences of the acts* might be, *personal closeness* to the other, and whether or not the child is the re-

cipient or "victim" of the acts. Moreover, a certain *distance* can be of importance for children's morality. Indeed, this is not a distance from the other; it is rather a distance that allows room for reflection. The *totality of the situation* also seems important for the children's actions. The results from this study have been supported in other studies (Johansson 2007a, b, 2009a; Johansson and Johansson 2003).

The Christmas Tree

Let us now look at an interaction between toddlers in preschool and discuss the conditions for moral learning that emerge from this event. From the following interaction we can learn that protests from the victim, together with the consequences of the acts, can make "the victimiser" stop, consider the situation and try to repair the damage again.

A Christmas tree decorated with candles and flags is placed in the corner of the room. The children are not allowed to play with the decorations. Sebastian (1.8), Björn (1.9) and Karl (1.8) are playing around the Christmas tree. (The children's age is given in brackets. The first figure stands for year and the second for months.) The children are eager and interested:

> Sebastian is standing on a small spot between the Christmas tree and the window. He is playing with some flags. Björn and Karl are on the other side of the Christmas tree. Gently they touch the decorations with their hands. Björn chats a little. "Ech, ech," he says with a delighted voice. A teacher admonishes Björn in a friendly tone. "No, no," she says and Björn repeats: "No, no." Karl is enthusiastically moving between Sebastian and Björn. He stops close to Sebastian. Karl looks at Sebastian and seems interested in playing with the flags. Sebastian looks back at Karl. Holding the flags with one hand Sebastian now pushes Karl in the chest with his other hand. Sebastian looks determined. Karl takes a few steps backwards and then stops. Sebastian plays with the flags, looks at Karl and pushes him again. Karl moves backwards, looks down at his hand and then turns around and leaves.
>
> Now Björn comes. Sebastian looks at him and quickly leaves the attractive spot, but he remains nearby watching Björn taking over the space. "Ai! Ai!" says Björn and touches the flags on the Christmas tree. Then he moves away. At the same time Sebastian quickly enters the empty space and the children bump into each other. Björn turns around and pushes Sebastian, but he stands still. Then Björn grabs Sebastian's pullover and now he falls. "Ehh!" Sebastian protests. He is now on all fours on the floor. He looks anxious. Björn quickly moves back close to the wall. He stands still. He gazes out into the room (with a serious look on his face) and then he looks at Sebastian on the floor. Sebastian complains, but soon falls silent.
>
> Björn puts his head on one side and bends forward gazing at Sebastian on the floor. Then he lies down in front of Sebastian looking closely into his face. He takes Sebastian's hand, but Sebastian withdraws his hand. Björn takes a new hold of Sebastian's hand, gets up and pulls. Sebastian cries loudly in protest. Björn let go but now takes a firm grip on Sebastian's pullover and pulls again. Sebastian cries. He looks frightened. Björn releases Sebastian's pullover. A teacher comes. "Björn, no, no!" she admonishes him. Her voice is determined.
>
> Sebastian is still on the floor. He points at the Christmas tree. "There," he says. "Yes, look! Have they pulled the flags?" asks the teacher. Sebastian gets up and goes. Björn follows close behind. He points at Sebastian's head. "There," he says. "Theeere!" Björn repeats and points at Sebastian again. Sebastian goes to the teacher, reaches his arms out, stamps his

feet on the floor and looks at Björn close behind. Sebastian looks frightened and complains again: “Eh, eh, eh.” The teacher lifts him up.

Values of Rights and Others’ Wellbeing

The situation above is about values of rights and others’ wellbeing but also about the influence of power in children’s morality. The most dominant value is about who has the right to play with the Christmas tree. But other values also become apparent in the interaction, power is involved in defending the right to play around the Christmas tree and in the confrontation between two of the boys Björn and Sebastian, we can find expressions connected to the value of others’ wellbeing.

The value of rights is of central importance in the preschool community. This value is often (implicitly or explicitly) embedded in discussions and conflicts among the children. The value of rights is certainly also a concern for the teachers and also structures a lot of the preschool activities. Communication in the preschool is often a question of rights. These commitments to rights, from the children’s (and the teachers’) perspectives have been shown in several studies (Johansson 1999, 2007a, 2009a, b; also Johansson and Johansson 2003). From the interaction above we also learn that the value of the others’ wellbeing is embedded in the interplay. Since the children’s intentions in conflicts are often to defend their rights, they choose strategies, which they find useful for this purpose. On the one hand, it is possible to assume that the children know that their behaviour can be negative for others. Sometimes this also seems to be the intention. On the other hand, it is also likely that the children discover that the consequences of their acts are different and even stronger (worse) than they had intended. When the children encounter the other’s reactions and his or her situation, they can stop what they are doing and carefully look at the other. Suddenly, the child can express an understanding of the other’s condition. The child now tries to repair the situation, acting with the intention of helping the other. Perhaps the value of others’ wellbeing becomes visible to Björn when he looks at his friend and then tries to help Sebastian up from the floor. It is also possible to learn from this interaction that aspects such as power and fear influence the children’s interaction and their morality.

Let us continue to analyse the interaction between the three boys as an opportunity for learning morals. What can be the children’s different intentions and what important dimensions of children’s moral discoveries emerge from the situation?

Moral Contracts

First of all, it is fascinating to note that the children’s expressions of values and norms differ depending on whom they are interacting with. Sebastian seems determined in his interaction with Karl. He prevents Karl from entering “his” space near

the Christmas tree. While Sebastian maintains his right to his play project, Karl does not insist on taking part in it although he remains close to the attractive space. When Sebastian once again shows that he wants Karl to go away, he leaves without objecting. Karl seems to realise that Sebastian is not going to give up his right.

In contrast, Sebastian acts completely differently when Björn comes along. In the interplay with Karl, Sebastian firmly defends his right, in contrast to the interaction with Björn where he avoids confrontation. He quickly leaves the area and does not defend the right to "his" space at all.

The interaction between the children is, however, intersubjective and their bodily communication is both evident and different. In the situation above, something happens with the children that has to do with their common history. The three children seem to take part in an invisible agreement on how to act where power influences the moral values that become visible and possible to express. Although their communication differs, Björn and Karl both seem to adapt to and take their interaction with Sebastian for granted. Björn enters the spot where Sebastian stands, as if he takes his right to do this as obvious. At the same time, Sebastian seems to confirm this understanding when he leaves the spot. Karl, on the other hand, seems to ask Sebastian a "silent" question: "Oh that looks interesting, can I join you?" When Sebastian answers and shows Karl his intention to defend his right to play with the flags, Karl accepts this without question. The interplay between the boys seems to be based on different *moral contracts*[1] between the children.

Moral contracts refer to intersubjective agreements between children on how to behave towards each other with specific reference to moral issues (Johansson 1999, 2007a, b; see also Schütz 1972; Hundeide 1985). Moral contracts are negotiable and changeable and they are not free from conflicts or power. They can be more or less tacit or more or less explicit. The contracts are expressed through children's bodily being, through posture, words, emotions and gestures. The contracts relate to children's concrete aims and goals in the specific context, but they are also based on children's previous experiences of moral values and norms. In addition, the contracts are intertwined with children's experiences of previous interactions with specific friends and lived understandings of how interactions in the context of preschool are usually performed. These contracts also confirm the children's previous moral agreements and positions of power.

[1] The use of moral contracts in my research has been inspired by the idea of meta-contracts as a basis for human interaction. The philosopher and sociologist Schütz (1972) originally developed this theory. Schütz also uses the concept 'stock of knowledge' to describe this phenomenon. Interested readers can read about this theory in the book: *The Phenomenology of the social world*. The concept of meta-contract has been taken further by Hundeide (1985, 2006) in his extensive research on children's life-worlds. See, for example, the book *Sociokulturella ramar för barns utveckling. Barns livsvärldar* [Sociocultural frames for children's development: Children's life-worlds]. For a more developed discussion on moral contracts and meta-contracts related to my research, see, for example, Johansson (2007a) *Etiska överenskommelser i förskolebarns världar* [Moral agreements in preschool children's worlds].

Power and Distress

We can also learn from this interaction that aspects such as power and fear can be of importance in children's morality. Sebastian seems a bit frightened of Björn, who is bigger and sometimes uses physical power to gain rights. However, Sebastian retains his interest in "his" place and when Björn leaves the spot, Sebastian occupies it again. When Björn pushes him, Sebastian expresses fear; he remains "frozen" on the floor seemingly uncertain about what to do. When Sebastian falls over, Björn moves quickly to the wall and gazes out into the room, probably looking for the adults. He looks serious and also a bit frightened. Björn remains still for a while as if he is waiting for something to happen. However, shortly afterwards he takes a close look at Sebastian on the floor.

Björn's reaction indicates that he might be in distress. It is reasonable to assume that Björn does not want the teachers to find out what has happened. In addition, it can be assumed that he expects teachers to interfere in the situation. Maybe Björn is trying to avoid being blamed.

Distance and Closeness

Let us now consider Björn's actions and the possibilities for learning in the situation above. From Björn's behaviour—hastily moving to the wall, looking at the adults, closely gazing at Sebastian and then trying to drag (pull) him up from the floor—it is possible to infer that he feels that he has done something wrong and that he is trying to repair the situation. The event seems to make Björn stop and reflect. This might be an important moment in children's moral learning and crucial in the discovery of the value of others' wellbeing. Let us first consider the assumptions made by Bengtsson (1998) about reflection. According to Bengtsson, to reflect is to stop, turn back to the situation and the phenomenon and see it in a new way. Like in the situation above, the child seems to discover something new, which can make possible insights, new perspectives and learning about the value of others' wellbeing. Maybe Björn realises that how he acted towards Sebastian turned out wrong, and he seems to ponder about the situation. My interpretation is that when something unexpected happens the taken-for-granted perspective is interrupted, which "forces" the child to consider. In this way, values might become visible and can provide opportunities for learning about good and bad. Also Pramling Samuelsson and Asplund Carlsson (2008) maintain the importance of reflection in children's learning. Indeed, Lindahl (2002) proposes that children in their learning can suddenly stop, consider and seem to gain a new insight. Children need, according to Lindahl, a temporary halt to be able to solve a problem. In the interaction above, Björn seems to reconsider what has happened and it looks like he suddenly discovers his friend on the floor. In this situation, the reactions from Sebastian (crying) and the consequences of the acts (Sebastian falls down onto the floor) can be significant factors that interrupt the taken-for-granted attitude and force Björn to stop and consider the event.

The Other's Face

It is also interesting to note that Björn looks like he is totally absorbed in his friend and he also seems motivated to act. In the next part of the interaction, Björn looks at Sebastian, lies down face-to-face with Sebastian as if he is trying to find out something about his friend's condition. But this is not enough. Björn also acts. He tries to help Sebastian up again. Experiencing the distress in the other's face and discover the consequences of the act might provide a potential for children to understand the other's situation. This phenomenon has been described by Levinas (1996) as the request from the other's face, from the gaze of the other. The face-to-face interaction proves to be an ethical demand on the other because human faces impact us as affective moments or, what Levinas calls "interruptions". The face of the other is firstly expressiveness and the pain in the other's face has in its own power that we cannot withdraw from. Levinas argues that the pain in the other's face gives us a responsibility that we cannot be released from.

This investigation and others (Johansson 1999, 2007a, b, 2009a) have shown that when children hurt someone and that person protests clearly, or reacts in other ways, they often stop and gaze at the other person. In addition, when caring for others they sometimes show a concern for the other child's reactions. The children carefully look for the other's response and can change their own behaviour in accordance to the other's experiences. This confirms what Noddings (1999) and Gilligan and Wiggins (1988) talk about as an important trait in caring. They argue that caring is an interactive relationship between the cared for and the carer.

To sum up, when the children encounter the others' distress, moral values might occur to them. This process contains aspects of both closeness and distance. The children seem to notice the consequences of their actions but can also show an interest in the other's face and observe intensively and closely his/her face, seemingly trying to interpret the other's expressions.

Responsiveness

Motivation and personal involvement are aspects of importance in learning. Several researchers maintain that a basic foundation of learning is the personal motivation to engage in the learning situation (e.g. Giota 2001; Johansson and Pramling Samuelsson 2009; Pramling Samuelsson and Asplund Carlsson 2008; Sheridan and Williams 2007). Indeed, the perspective of the learner regarding the actual learning phenomena is significant; it accentuates the position of the child's own experiences and intentions in the learning event. The situation above indicates that Björn is strongly involved in his friend's situation. His whole bodily being is directed towards his friend on the floor and his focus of attention seems to be challenged.

He seems absorbed by his friend on the floor. Moreover, Björn is also motivated to act. He lies down on the floor close to Sebastian, looking intensively at his face.

Björn then grabs Sebastian's arm and tries to help Sebastian up again. He fails and Sebastian gets frightened. We do not really know the grounds for Björn's actions but the engagement in his friend seems stronger than the fear of being caught by the teachers. He remains with his friend rather than escaping from the situation.

This part of the interaction can be interpreted with the help of the concept of *responsiveness*, developed by Blum (1994). Responsiveness is an intersubjective quality concerning the willingness to address and respond to the other's condition. Responsiveness is grounded in an intertwined relation between cognition and affection, writes Blum. Responsiveness refers "to an action expressive of an altruistic motive towards others" (Blum 1994, p. 188). This means that children are affected by other children's predicaments and try to do something to change the situation for them. Although responsiveness is grounded in emotions, its occurrence may not always involve any particular emotional state at the time. It is not necessary for the child to have the same emotional state as the subject of her or his concern. In the situation above, it is possible to interpret Björn's behaviour as an expression of responsiveness. Björn seems concerned with his friend's situation, and his intention seems to change the situation for Sebastian, to help Sebastian up from the floor. We cannot know about Björn's specific feelings, but his behaviour indicates an emotional openness and a cognitive understanding of the other's condition and he also tries to do something to support the other.

The Child's and the Teacher's Perspective

Let us now briefly consider the process of interaction when the teacher interferes. The teacher has not been able to take part in this event. She comes along when Sebastian is on all fours on the floor crying. Her intention seems to be to protect Sebastian and to inform Björn about the negative aspect of his behaviour. "No, no," she says in a determined voice. When Sebastian is "escaping", Björn follows him pointing at Sebastian's head and saying "Theeeere," with an intense tone of voice. The teacher then lifts him up.

The teacher refers to the value of the other's wellbeing. She interprets what has happened and she describes the situation to the children from her perspective. In terms of moral contracts, the teacher also acts on the basis of her previous experience of how the children normally interact. She knows that Björn often defends his rights with force, and she uses this knowledge when interpreting and describing the situation to the children. It is also interesting to reflect on how the teacher relates to the contract and the positions of power between Björn and Sebastian. Her taken-for-granted agreement with the children seem to be that Björn is the one with power and that Sebastian is the one who lacks power. By protecting Sebastian and blaming Björn, she probably confirms this contract between the boys. This is probably not her intention. From this, we can learn that the teacher has a lot of power and responsibility. If this kind of event is of significance in children's moral learning, it is highly important that teachers also possess this kind of knowledge, that the teachers

see and encourage the child's intentions and also have the skill to use the situation as a learning event. Developing a life-world-based didactics means analysing the dimensions of what and how in children lived discoveries of moral values and also having an idea about how to make values visible in everyday interactions. This kind of didactics builds on (and extends) the child's own experiences and intentions. As the situation now appears, the child's (Björn's) responsiveness seems to be invisible to the teacher. His intention to repair the situation is not responded to. On the contrary, his behaviour is interpreted in negative terms. In the final part of the interaction, Björn shows that he wants to tell the teacher something important. "Theeere," he says eagerly and points at Sebastian several times. What does Björn want to say? The boy's utterances, however, remain unanswered; the teacher's attention is focused on something else.

Is there an alternative approach that the teacher could have used in her interaction with the children? Rather than "being a judge" solving the problems between the children, the teacher could have used the situation as a moral learning event, trying to find out the different perspectives of the children and what kind of values that could be embedded in the interaction. Instead of saying: "No, no," with a resolute tone of voice, the teacher could have interfered in the situation saying: "Oh, Oh?" with a questioning tone of voice. This is a totally different communicative strategy that also allows for a more open discussion between the teacher and the children about the event. In this discussion, there could be room for encounters between different values of good and bad. Life-world-based didactics requires the ability of teachers to identify moral values in everyday interactions and help children see and reflect on the conflicting values that might be embedded in the situation.

The Moral Value

The children's moral discoveries might also have something to do with the value involved in the interactions and the importance of this value from the perspectives of the different participants. Conditions for asserting others' rights can be that the children embrace the idea of rights and that norms for gaining rights that the children use also can be relevant for others. The encounters with other children's claims for rights together with their own experiences of both gaining and losing rights can support children's understandings of others' rights. The value of others' wellbeing requires a focus on the other. In this way, this makes greater demands on the child. This value becomes visible when children defend their rights, share worlds with others and investigate the boundaries of other children's integrity. The discovery of others' wellbeing seems to be related to others' reactions, helplessness, and vulnerability, physical and psychological closeness, but also distance. Values are both bodily expressed and interpreted, and consequently the study supports Merleau-Ponty's (1962) theory of the body as a system, where physical and psychological dimensions cannot be separated.

Didactics Based on the Life-World Theory

This discussion has indicated that children's morality is complex and includes a spectrum of values including rights, others' wellbeing, justice and power (Helwig 2006; Johansson 2006; Killen and Smetana 2006; Piaget 1960; Turiel 2006). It is important to bear in mind that the meaning of these values and dimensions from a child's point of view may vary according to interpretation, contexts and life-worlds, and may also differ compared to the perspective of the adult. What can we learn from this in practice? How should teachers relate to this?

First of all, we can learn that children are important for each other's morality. Children are constantly involved in moral dilemmas since these dilemmas are part of the everyday world of preschool. The children are interested in one another's experiences and in rules for interaction. Children are active in teaching each other how to act and are strongly motivated to make their opinions clear about their rights. Furthermore, children's morality is not separated from society; they struggle with values for existence, ownership and justice, as well as respect for and understanding of others. These are values that are also of importance in the preschool curriculum. In their interaction, children and teachers develop different *moral contracts* governing how to behave towards each other (Johansson 1999, 2007a). These contracts are negotiable and changeable and they are not free from conflicts or power. The contracts can be more or less tacit or more or less explicit, but they influence the children's moral learning and the values possible to express. This is important knowledge for teachers to consider.

Second, research also indicates that the *totality of the situation* is of importance for children's moral learning but also aspects such as *closeness* and *distance,* the other's *reactions* and *consequences* of acts seem to have potential for moral learning. Values such as the others' wellbeing but also rights are bodily expressed and experienced, and thereby support the idea that being close to the other, experiencing the pain in the other's face or the consequences of the act can be crucial in children's moral learning. Just as important is the ability to distance oneself, where the taken-for-granted attitude is broken and forces the child to reflect (see also Bengtsson 1998). This is not a question of remoteness from the other; rather, it is a space that allows for reflection and pondering about the child's own actions and the other's situation. Moments of sudden change seem to help children discover the other's experiences.

All these aspects are important for teachers to consider and use in the life-world-based curriculum. This means both creating situations where values are communicated and made visible to the children *and* using everyday interactions as a basis for learning values. In this process, it is imperative that the teacher helps the child to discover morality by building on the child's own experiences and intentions. Closeness to the child's life-world is a prerequisite for this kind of didactics. Nevertheless, the work often seems to involve prevention and solving conflicts, not utilising these situations in order to give children opportunities to discover values (Johansson 2002). DeVries and Zan (1994), and Nucci (2001), underscore the teacher's responsibility

to create a moral atmosphere characterised by warmth and mutual respect. Emilson (2008, also this book) suggests closeness to the child's perspective, playfulness and emotional presence as important dimensions in teachers' communication of values. When working with values, it is essential that a teacher creates meaningful contexts while being emotionally present, supportive and responsive. However, research has shown that teachers' strategies sometimes come into conflict with the values they want children to learn. When preventing certain actions, according to Johansson (2002), the teachers do not always seem to be aware that their strategies also express values that sometimes conflict with the values they want the children to learn about. The approaches and strategies used by teachers include many implicit and explicit moral messages, not always visible to themselves. Emilson and Folkesson (2006; also Tullgren 2004), for example, found that strong teacher control creates boundaries for children's participation and weak teacher control can strengthen children's participation on their own terms. Moreover, teachers' ambitions as regards making values apparent to children are not always obvious; the children might not perceive the values being taught as the ones intended. Furthermore, children sometimes create their own interpretations of these values (Colnerud and Thornberg 2003; Emilson and Johansson 2009; Johansson 2002, 2009a, b; Thornberg 2009).

Third, my suggestion is that the concept of *responsiveness* is a suitable one to work with since children to some extent begin to respond to other children's situations on their own. Thus, the child's own experiences can be used as a platform upon which to further develop these ideas of caring and wellbeing. Responsiveness means being aware of the other's situation emotionally and cognitively but also responding with the intention of helping the other. Here, teachers must be active and expand children's engagement in each other's situation.

Finally, the work with morality is a matter of values. Understanding morality involves learning about values and norms for how to treat others, often by inference. Attention should be directed towards helping children discover the moral values that could be hidden in different interactive processes. The challenge for teachers in moral education is the complexity of approaches and to be able to discern different perspectives of morality in early education. It is crucial to focus on moral issues that children communicate and regard as significant, and to be aware of the moral values teachers want children to learn and the moral values that teachers actually communicate (cf. Goodnow 1999).

If teachers do not actively work with moral values in early education, the result could be unintended values where inequality dominates rather than values related to rights and concern for others' wellbeing.

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Chapter 8
Gender Learning in Preschool Practices

Anette Hellman

Introduction

During the last decade, several researchers have argued that there is a need for new ways of analyzing gender in preschool practices (Ärlemalm-Hagsér and Pramling Samuelsson 2009; Davies 2002; Eidevald 2009; Lenz-Taguchi 2004; Månsson 2000; Nordberg et al. 2010; Paechter 2007; Thorne 1993). Thorne (1993) writes that even though feminist theory has moved analyses of gender beyond gender dualism, these insights have hardly been extended to research about children. In line with this argument, Nordberg et al. (2010) conclude that although studies within the field of pedagogy and gender have illustrated how gender norms are repeated and negotiated between the two categories "girls" and "boys", less studies have been conducted with a focus on how gender norms are manifested within the category of "boys" and within the category of "girls". Even though research within the field includes an explicit aim to study masculinities and femininities rather than masculinity and femininity, there has been a tendency to focus hegemonic masculinity positions or positions such as "popular" boys and girls, rather than the complexity inherited in the terms. Thorne (1993) points out the perennial problem of repeating dichotomous notions of "boys versus girls":

> Relatively static and dichotomous notions of individual and group gender differences sit like a gigantic magnet, at the core of children and gender, shaping orienting questions, research design and frameworks of design. (Thorne 1993, p. 158)

An essentialist understanding of boys and girls as opposites with different needs is also a discourse that today is present in many preschools in Sweden (Hellman 2003; Nordberg 2005). Boys are thus often described as having certain interests, needs and ways of being that differ from girls. As Thorne has pointed out "separate-worlds dichotomies gloss the fact that interactions varies by activity and context" (Thorne 1993, p. 102). The claim that girls and boys are different and have different needs rests on a problematic generalisation and refers more to normative and discursive

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dimensions of gender than on how most children act in daily situations. Even if girls and boys do the same thing it is often described in different ways. The assertions about gender differences refers, as Thorne points out, to average differences between individuals in the groups called "boys" and "girls", and under-communicate both the variation among individuals in the group and the variation between situations. This construction of a gender dichotomy is, as discussed above, further stabilised by the focus on differences between boys and girls in gender research where even small differences are more often reported and published than similarities (Nordberg et al. 2010).

At the same time, Swedish preschool is part of a society with a strong political emphasis on gender equality. This discourse is, for example, codified in the national curriculum for Swedish preschools where teachers have an obligation to counteract gender stereotypes: Norms that influence how routines and activities are organised as well as teachers and children's daily interactions.[1] Ärlemalm-Hagsér and Pramling Samuelsson show in their study of how different gender patterns are expressed in everyday learning in Swedish preschools, that gender was constructed by the children as well as the teachers. Preschool children meet many gender patterns that exist simultaneously in preschool. Gender stereotypes are reinforced, but these stereotypes were also transgressed in verbal communication and physical actions. Ärlemalm-Hagsér and Pramling Samuelsson found four themes; making distinctions, stability, fellowship and crossing of gender borders. A main result was, according to Ärlemalm-Hagsér and Pramling Samuelsson, that gender more often were negotiated and challenged by the children than by the teachers.

Hence, Swedish preschools are both influenced by stereotyped images of boys and girls as well as understandings of gender equality. This complexity of norms, and the manifestation of them, is the starting point from where I will explore how gender is negotiated and given specific meaning. According to my field notes, children do not always perform gender stereotypes. Still, what is explicitly noted by teachers and what is forming the way teachers structure children's daily activities, are remarkably often stereotype notions of "typical boys" and "typical girls".

After a brief summary of theoretical and methodological framework, I will turn to some of the findings, starting with practices where gender stereotypes are enforced and tend to be reproduced. After that I will discuss practices where gender is

[1] In the curriculum is stated that: "Democracy forms the foundation of the pre-school. For this reason all activity should be carried out in accordance with fundamental democratic values. Each and everyone working in the pre-school should promote respect for the intrinsic value of each person as well as respect for our shared environment. An important task of the pre-school is to establish and help children acquire the values on which our society is based. The inviolability of human life, individual freedom and integrity, the equal value of all people, equality between the genders as well as solidarity with the weak and vulnerable are all values that the school shall actively promote in its work with children.[…] The ways in which adults respond to boys and girls, as well as the demands and requirements imposed on children contribute to their appreciation of gender differences. The pre-school should work to counteract traditional gender patterns and gender roles. Girls and boys in the pre-school should have the same opportunities to develop and explore their abilities and interest without having limitations imposed by stereotyped gender roles". (Lpfö 1998, pp. 3–4)

made less relevant. The chapter is concluded with some advice for teaching gender in order to promote cooperative relations between girls and boys.

Theoretical Framework, Methodology and Design

This chapter focuses on situations where conceptions of "boys" and "girls" are negotiated. In these situations gender norms are repeated as well as challenged. The analysis builds on post structural feminism, queer theory, critical studies of men and masculinity, and are conducted with an intersectional approach where categories (such as gender and age) are regarded as "made" in social relations in specific contexts and in interaction with each other (Crenshaw 1995; Lykke 2005). This means that norms about age and gender, rather than being additional or separate, are regarded as "creating" each other.

In this theoretical framework *gender* is understood, not as given, but as a situated and relational process, performed and continually created through language, gesture, and all manner of social signs (Butler 1990). By this understanding categories such as "girls and boys" and positions such as "typical boys" are seen as "doing" something rather than merely represent something. In the act of performing reality, by embodying those fictions in our actions, those artificial conventions appear to be natural and necessary. The enactment of gender norms has "real" consequences, including the creation of subjectivity but that does not make subjectivity any less constructed. What is required for the hegemony to maintain power is our continual repetition of gender acts in daily activities. *Categories* such as boys and girls and *positions* such as the "babies" or gender stereotype positions like "typical boy" and "typical girl", are thus seen as constructed in relation to hegemonic discourses of power and normality (Butler 1990). *Gender stereotypes* are in this chapter referring to categorizations that imply that there are certain specific hegemonic ways to practice boyishness for boys and girlishness for girls, more proper than others. *Categories* and *positions* are in addition to this seen as situational constructions where normative structures are both constraining the situation and invoked by the children to influence the contextual understanding of the situation.

This chapter draws on some results from a larger study (Hellman 2010). The analysis builds on ethnographic methodology and field periods carried out during 2 years' time in a Swedish preschool. Ethnographic methodology can be interpreted and used in various ways. The analysis used in this chapter builds on an understanding of ethnographic methodology as an interpretative act of "thick descriptions" where data are seen as "the researchers own construction of other peoples constructions of what they and their compatriots are up to" (Geertz 1973, pp. 9–10). This interpretive understanding of everyday life means to try to make sense of the structures of signification that inform people's actions. The methods used for this chapter is participant observations over time and in different contexts, interviews and observations. The study includes three female teachers, one male teacher and 20 children (12 boys and 8 girls, 3 to 6 years old). The preschool was situated in

an urban area of mixed social and cultural background. When observing play and other activities I made notes of conversation as well as non-verbal practices and of how teacher and pupils placed themselves and moved between different areas. All interviews have been taped and transcribed.

Situations Where Gender Stereotypes Tend to Reproduce

A main point in this chapter is that children perform several positions, of which some are made visible and categorised, by children and adults, as "typical girlish" or "typical boyish" and that this way of categorizing children has a tendency to happen in certain situations. A common pattern in the study is that gender stereotyped categorizations emerge in public situations when girls and boys are at risk of being judged according to norms about "typical girls" and "typical boys" by other children or by teachers.

Public Situations—The Gaze

In the preschool group boys and girls often wore different clothes. Boys were usually dressed in dark clothes with a loose fit and girls in pink, often with a fit that restricted their possibilities to move. However, the fact that boys and girls often were dressed up quite different did not mean that they preferred these clothes or colours. The youngest boys, 3 to 4 years old, sometimes dressed up like princesses, female teachers, mothers or big sisters with pink skirts and shining silver shoes. Their reason for this was, as Ville, 4 years, commented "Just because the colours on the clothes and shoes are so beautiful". In more public spaces, like the circle time, transgression could become more problematic as in Linda's description of what had happened when she had introduced a new costume for the children. Linda, one of the youngest teachers, had made some new costumes, princess and knight dresses. She described how she wanted to present the female coded costumes first to give them higher value in order to make them more attractive for both boys and girls:

> But as it turned out I now realize that the circle time was a bad situation to present the dresses. As the dresses were laying in the middle a lot of children, both boys and girls, asked if they could try them on. The teacher deciding in the circle time situation gave the girls opportunity to try the dresses first and everybody said "Oh how beautiful, Oh how nice…" One boy had been flapping his hand in order to get attention, and finally he was chosen and could try the dress. He was so happy, he really thought it was beautiful on, but the kids started to laugh at him, the older girls calling him boy princess. I now think that play would be a better, maybe more safe situation for boys in order to transgress gender borders without being teased, but I would really like to see it work in a public situation as well. (Field notes 2005)

Linda had the intention to give femininity higher value in order to open up for other possible gender positions, but in her choice of a female dress she instead reinforced

the gender dichotomy. By introducing only one highly gender marked dress, instead of presenting many different clothes and positions Linda also, despite her good intention, both actualised the gender border and reproduced a stereotype and polarised"girlish" position. In the quotation above Linda reflects on how different situations, like play and the circle time situation, provide different opportunities for boys to approach or transgress gender borders. In a more public situation, like the circle time, children are, as Linda points out, more visible; which also is one of the main pedagogic intentions with the situation.[2] This may however, place boys trying positions coded as "girlish" under closer examination and risk negative judgement from teachers and (as in this case) from other children. In a public situation like the circle time the gender stereotypes were stressed and by Linda's presentation of a highly gender marked dress the heteronorms were actualised. Thereby Linda's intention to make it possible for boys to try a bright-coloured dress, instead of subverting the gender dichotomy reinforced it. It was easier and less threatening for boys to transgress the gender border, to try girlish-coded positions and play with girlish-coded things when the children played out of public sight (both from certain children and teachers that might tease and normalise girls and boys according to stereotyped-gendered expectations).

As Linda stated, play was as a more "safe" situation than the circle where the children's behaviours was focused and thereby noticed and judged by the other children. Because boys' practices were not scrutinised in the same way during play as in circle time and other more structured situations when all the children were gathered, they could more easily approach and practice those girlish-coded positions without being teased by other children. My results show that play situations often gave children more opportunities to perform opposite and highly gender-marked positions and to play in a more gender transgressing manner. Play is also a situation when children as a group have more power to choose and decide activities, but it is important to notice that some children have more power than others to define norms and values in play situations (cf. Odelfors 1996). The possibility to "be safe" in play, as discussed by Linda, is very much connected to the possibility of finding a friend. Children with friend relations could more easily cross gender borders without the risk of teasing or marginalisation, which more seldom was the case for lonely children without the confidence, safety and solidarity that friend relations might bring. In sum, to be with close friends out of sight in a non-public space, facilitated gender transgression in situations and relations when children were expected to follow gendered expectations.

Thorne (1993) shows in her study that public situations where children were seen by other children and teachers meant that gender were made relevant. Visibility then gave children less possibilities to neglect or cross gender borders. More private situations where children were less visible opened up other possibilities for girls and boys. Thorne exemplifies this by showing how girls and boys seldom played with

[2] The circle time is shaped by a pedagogic discourse pointing out the importance to make every child visible and give each child the opportunity to speak (see Rubinstein-Reich 1996, for further discussion).

each other across gender borders at the school yard, but very well could play and be friends at home. The results in my own study shows, that not only the visibility discussed by Thorne, but rather a special way of looking at others, a gaze where individuals are judged and measured according to hegemonic norms and normality (Foucault 2006/1975; Paechter 1998), became important in order to understand when gender stereotypes emerged. One example is when children's bodies became focus of attention. In sum, to be close to friends out of sight, in a non-public situation, facilitated gender transgression.

As Connell (2000) has showed, practices where bodies are put in centre of attention tend to make norms about "real boys" dominant, something that is also true for processes where "real girls" are created (Young 2000). While practices like sport are well documented, by Connell and others, for producing hegemonic masculinity and gender difference among older children in Australian educational contexts, my study among young children, shows that understandings of "typical boys" were made relevant—not in sport situations—but at dinnertime when children were eating.[3]

To Perform Masculine Body Ideals About Strength and Achievement by Eating

Connell (2000) has showed how situations where boys are being disciplined often have a focus on stereotyped and hegemonic understandings of how boys are supposed to behave, feel or act. My field notes show, in line with Connell's argument, that a common way to make children eat when they refused, was to try to persuade them to do so by using images of "big, strong and competent men/boys", often figures from popular media and children movies. In this process, ideals about "real boys" emerged. When ideals about strong subjects with big muscles were made relevant, they were often ascribed and expected for "typical" boys and hereby normalizing certain positions and marginalizing others. In the following observation two teachers, Tommy and Sofia are sitting with some children at two separate dinner tables in the dining room:

Teacher Tommy:	This is really hot stuff; you have to eat it together with your soup.
Ted:	What is it?
Tommy:	It's mustard. Try some! It's really something for big, strong and cool guys like me. (Tommy flexes his biceps and points at each one of the older boys around the table).Ted….
Ted:	Yeah, right (He shows his biceps as well). Yeah, this is stuff for strong boys like me and Tommy!
Tommy:	…Ludwig and……Emil.

[3] Breakfast, dinner and light afternoon snacks are served at all Swedish preschools.

Emil and Tommy:	Yeah, we were also strong! (They show their muscles and put some mustard in their soup. Kalle, a younger boy, is sitting close to the older boys and he's looking at the mustard without tasting it.
Kalle:	Maybe I'll like some of that too then…Yeah, I'll have some!
Tommy:	That's my boy! Now when you were so brave, I'll bet your muscles have grown already. Let me see! Wow! Just like your older friends!
Teacher Sofia:	Anders, you really need to eat up your soup. You need more vitamins to grow and become big and strong. (She puts her hands on Anders biceps) You are just too tiny and skinny, dear. Try some soup and afterwards I'll give you a nice fruit for dessert.
Kalle:	(leaning over to Sofia and Anders' table). That's right, Anders. Have some mustard like me. Then you'll become really strong just like all of us big boys here at this table.
Anders:	I don't want to. I have tried this soup hundreds of times and it still tastes awful. I'll rather have a fruit right now instead.
Teacher Sofia:	No, no my dear friend. Eat up your soup and then when all of it is inside your stomach I can take a close look and see if your muscles have become bigger, is that a deal?

To be strong, big, to be brave, to dare, to achieve and manage are norms that become relevant in the observation. These norms are directed towards boys as a group, but only certain boys were included in the category and seen as "real boys", like the older boys and the younger boys that dare to try the mustard and hereby were made "big". Some children, like all girls, younger boys that refused to eat as required and boys that were called small and skinny were excluded as "boys" and as "big and strong subjects" at the dinner table.

When norms about strength, size and achievement were emphasized, the boys came in the centre of attention (never the girls). These norms subjugated terms such as "small", "thin and skinny", "passive" and "young", and made them into their opposite creating an idealised position for boys. But, as I showed in the observations above, it's not only the fact that children's bodies are put in the centre of discussion or that dinner is a public situation that normalizes a "cool and strong" position for boys. It's also the fact that boys and girls are being observed in a specific way, with a special gaze, where their bodies are measured according to norms about "real boys" (cf. Foucault 2006/1975; Paechter 2007; Whitehead 2002).

Routine and Stress—Low Reflexivity

To eat is an everyday, common, routine situation that takes place in children and teachers' homes as well as in preschools and a situation when children's bodies tend to be more in focus than in any other situation. As previously discussed, it be-

came relevant during meals to control and discipline children's bodies in line with hegemonic masculinity norms about strength, size and achievement. But the fact that meals were very common and seen as quite ordinary had as a consequence that teachers actions were not evaluated and analysed as they usually would be. Since meals in preschool were treated as an everyday practice and seldom evaluated as a learning situation, the normalisation processes became invisible and never analysed as a deviation from values and norms about gender equality as stated in the national curriculum. Rather, they were seen as being part of proper ways to behave at the dinner table and something rather ridiculous to call in question.

The way that the imperatives of "eating up" are linked to norms of achievement, create ideals about strong subjects with big muscles as expected and normal for boys. This does not mean that all teachers, girls or boys in preschool adapted and reproduced these norms. One example is Gustav when he is trying to negotiate norms about strength and achievement. Spinach soup is served for dinner. Some of the children don't want to eat, so the teacher uses the popular "Pop Eye figure" in order to motivate them to eat:

Monica: Do you know what Pop Eye likes to eat, something that makes him strong?
Gustav: I know! Spinach!
Monica: Yeah, that's right Gustav. Now, if you eat up your spinach I can measure your muscles afterwards and see if they became as big as Pop Eye's.
Gustav: In that case, I'll rather eat pancakes, just like Pippi Longstocking. And I don't think I'll need so much spinach since I've already become strong by wrestling. (Field notes 2006)

Gustav have maybe learned that, for some reason, it seems important to eat in order to become big and strong. He might also know that there is small chance for him to escape "eating up" but he still negotiates norms about what to eat and the reason for doing so, by using the same ideals for boys as the teacher is ascribing—a strong subject with big muscles. Gustav suggests for example, that he might eat the dessert, pancakes, if the important thing is to be big and strong since Pippi Longstocking (the role model he is using in order to support his argument) achieve strength by eating pancakes for dinner. His first argument is to suggest another dish that would make him strong; his second to tell the teacher that there was no need for him to become a subject that he already was by eating. He was already fulfilling a position as a "real and strong boy" by attending wrestling classes after preschool. Worth noticing is that even though Gustav negotiates the teacher's method (to make him strong by eating certain food), the underlying normality for boys (the importance to achieve strength, muscles and body size) is never questioned, discussed or negotiated. Gendered body ideals could be transgressed by girls who were categorised by others and themselves as "strong", which Irma in an observation later on in this chapter, is an example of. But normality for children seldom included boys that were labelled small and skinny, especially not in meal situations. As discussed in the observation from circle time, notions of gender and normality often were more restricted for boys.

Norms About Age Accentuate Gender

Another emergent pattern in my study is that age accentuates gender. In situations where younger children interacted with older boys and girls, it often became important for them to avoid the term "baby", to describe themselves as "big and strong" and as someone that soon would become "big". The following discussion, which took place when Jens and Oskar looked at themselves in a mirror in the bathroom, is one example of that. Jens (4 years) is standing in front of the mirror. Gustav (5 years) enters the room in his Superman suit.

Jens: Wow, how big muscles you have there in your Superman suit Gustav!!
Gustav: Yes, I know.
Jens: Can I borrow it?
Gustav: No, you're too tiny.
Jens: Please…
Gustav: Ok, then…
Jens puts the Superman suit over his own Darth Vader suit. The suit underneath "fills out" the larger suit which now, to Jens great surprise and satisfaction, really fits:
Jens: Look, Gustav, it fits! Now I became as big and strong as two men. Now I'm not a little baby any longer. Now, I'm a big boy!
Gustav: Yeah, a little bit…but still not as big as me.
Jens: Maybe not, but almost… Soon I will be, Gustav. Soon I will be a big boy just like you.

To become older meant for the younger boys and girls a wish to become larger, stronger and more capable, as the observation with Jens and Oskar shows. Jens also describes how the term "baby" could be negatively coded for the children. This was especially so for the younger children who constantly ran the risk to be called "babies" by older boys and girls as well as by adults, when they failed to behave as they were expected.

In opposition to be called "baby", it was very positively coded for the children to be called, or to call themselves, "big". The concept "big" was often used together with the gendered categories "boy" and "girl" to mark required and gendered behaviours, knowledge and skills. As an example of this, older boys and girls were often called "babies" when they did not behave in line with hegemonic gender norms, at the same time as required behaviours often were encouraged by ascribing children older age. Thus, age does not only represent an actual time span but is also interacting with other discourses of power and normality. In the following paragraphs I will discuss the interaction between age and gendered normality by taking my starting point in a few specific observations and interviews.

The younger children's wish to become "big" were closely connected to the possibility to achieve more status and influence since the older boys and girls were given more option to influence play situations than younger children. Jens did get just as big as Gustav by putting on the Superman suit, and therefore he claimed the 5

years old position as a "big boy" that he longed for. But his claims were rejected by Gustav, who marked that body size and age were not to be so easily interchanged. Gustav was still invested with more power and influence by his position as older.

Since older children usually had a more developed language, a well-trained play capability and greater physical strength than younger children, it became possible for them to take more decisions in play situations. Thus, age marked not only children's size and lived age, but also children's different possibilities to achieve *influence* in the preschool.

A common feature when adults used the concepts was that they linked them to learning. Their usage also related more to maturity and upbringing, by the way the teachers consequently linked the concept "baby" to behaviours that were described as negative and the concepts "big girl" or "big boy" to behaviours described as positive.

What is it then that you still have not understood when you as a 3 until 5-year old child are being called a baby? To highlight this I will show a situation where the children are playing in the playground outside the preschool:

> It is February and the playground is covered with snow. Emil, 3 years, stands at the door freezing and crying. He says that he wishes to go inside, even if it is not time for indoor activities yet. The teacher Annica gets angry when she hears him "whining":

Teacher Annica: Why can't you ever learn Emil! Stop whining like a little baby now—it won't help anyway. You need to move instead, come on let's go to the other children. Come on let's show that you are a big boy now who doesn't whine! (Field notes 2006)

By telling Emil to stop whining like a little baby, Annica also determines what kind of behaviour that is expected for Emil and other "big boys". Big boys are for instance, according to her, not supposed to cry if they are cold, if they do not want to be seen as "whining babies". To correct children—and especially boys—that were considered to "whine" were quite common. This was something that was done unreflectedly and unplanned. The comments were often stated by force of habit and the teachers did not think or talk about what they said or what messages they gave the children. It is important to emphasize that children were not always disciplined in accordance to age or when they were crying. The teachers often took children in their lap to comfort them when they were hurt, missed their parents or felt lonely. However, boys, as in the observation above, were often called "babies" in situation when they didn't manage what was expected from them. To walk far without "whining" is one example of what "big boys" were expected to manage without whining. To withstand cold is another example.

The word "big" was generally very positively coded for the children and were a position that they liked to ascribe themselves. When a child has learned expected behaviour it gets gendered by the way it gets rewarded by being related to the gendered category "boy" or the gendered category "girl". Firstly, the behaviours become reinforced by the way "boy" and "girl" is made into contradictory terms and gets linked to the positive term "big". To become a "big boy" or a "big girl" will therefore have the meaning of something very positively closely associated with

growing up. Secondly, the behaviours become reinforced by the way the children are called *big girls* or *big boys* when they are doing something that the teachers like. The terms "big girl", "big boy", respectively, were also often accompanied by a smile, a soft touch or a hug from the teachers. The term "baby", was however, often negatively coded and seldom something that the children called themselves, except when they had a baby position in play or made "a joke" to avoid a duty.

The term "baby" was understood as gender-neutral, but was used to mark certain and unfit behaviours, lack of knowledge's or to give children more passive roles in play situations. The term "baby" carries with it a supposed notation of gender neutrality, that age is not gendered. However, my observations show that what a preschool child "need to learn", in situations when the baby term was used to correct "wrong" behaviours, were different for girls and boys. Boys were often called "baby" and told not to whine in situations when they did not manage. Girls were more seldom called "babies" in situations where they did not manage to maintain physical or psychical performances. Instead they were called "baby" in opposition to "big girl" when they refused to help or to tidy up. For example when Kajsa, 3 years, refuses to tidy up and the teacher Katarina gets angry:

> Stop whining if you don't want to be moved to the "baby group". We want big girls that listen to their teachers in this group. Now! Just start tidy up! (With a little more soft voice to Kajsa who now starts to pick up a doll from the floor) Yeah, that's right. One, two and three, now you're working just fine. All the spoons in that box, please! (Field notes 2006)

Kajsa does not behave like a "big girl" which she ought to be doing and is corrected with a supposed gender-neutral concept. This marks that she is younger and not yet have learned adequate knowledge for being acknowledged as "big". What Kajsa is supposed to learn is that there are certain things that "are fit" for "big girls" and another set that "are fit" for "big boys". To grow up then, means to be "made" a boy or a girl by adjusting to a gender complementary model and to learn what according to this model"fits" for each gender. The supposed gender neutrality character of the position "baby" is therefore a starting point for a gendered learning. It's important to point out that this learning starts in an early age. Being positioned as a baby or placed in the baby group threatened to deprive the children of their gender and thereby of their subjectivity.

When Gender Stereotypes Are Given Less Relevance

Even if teachers and children tend to repeat norms and the polarised story of boys and girls in some practices, there also exist a lot of situations when teachers and children contested and undermined such norms, often by giving them less relevance. Other values, like common projects or friendship between people of different ages and gender became more important, which will be discussed in the following section.

Gender was often downplayed when common projects and cooperation between boys and girls were created by teachers or by the children themselves. In the fol-

lowing observation Gustav notices a cat outside the fence and throws out a plastic plate with "food". To get the plate back into the garden became difficult for Gustav, especially since it was absolutely forbidden to climb over the fence. Gustav then called out for some help. Several boys and girls of different ages came running in order to help and together they used sticks and slowly started to get the plate back into the garden.

Gustav: Hey, we were really a good working team! We can fix everything together!
Eva: Yeah, we can fix everything! We are the best!

Several other children's practices were not separated by gender or age. It was rather, as in the observation above, common projects that became important. Teachers could also join and play together with the children when age became less relevant. Tommy could for instance play with Lego bricks together with the children and Sofia often laughed and played catch and run together with children at outdoor play situations. Norms in children's practices about "fun games" and to be a "good friend" often related to influence, participation, and cooperation, to take care of each other, creativity and humour. When these norms were given dominance, borders between gender and age were made less relevant for boys, girls, children, women, men and adults.

Common projects and friendship between girls and boys and between ages make gender less relevant, which is also discussed and analysed by Ärlemalm-Hagsér and Pramling Samuelsson (2009). Thorne (1993) exemplifies how teachers might work in order to promote cooperative relations, and hereby gender equality among girls and boys and points at the way teachers tend to divide or count children into gender categories. When teachers divide girls and boys in different competing teams, different tables or different rooms they ratify the dynamics of separation, differential treatment, and stereotyping between girls and boys. This kind of daily categorisation of boys and girls was also used by teachers in my own study at circle time when the children were "counting boys and girls" (Hellman 2010). The purpose was to teach the children how to count, but girls and boys also learned that it seemed quite important to categorise individuals by gender and that boys seemed to be more important since they everyday at circle time were counted first. By emphasizing that individuals in the group all belong to the same group regardless of age or gender, a more inclusive basis of solidarity might be possible among children and teachers, and how teachers tend to use language is an important part of this.

Thorne (1993) also points out that it might be helpful for teachers to organize children into small heterogeneous and cooperative workgroups since small groups might create "pockets" of less public practices and an environment where girls and boys might get the opportunity to find new friends as they work together. In my own study, girls and boys, especially the younger, 3–5-year-old children generally tended to play together. Older children had quite often begun to learn how girls and boys were supposed to speak, act and feel and tended to restrict themselves, as well as others, according to gendered expectations. For them, small houses made by blankets over a table or less visible rooms like a corner in the garden or in the playing area, could create spaces where girls and boys played together without risk

of teasing or marginalisation from other children. One way of "shutting out" normalising gazes was, as previously discussed, to use physical rooms. Another was to create social rooms between girls and boys based on friendship and solidarity. Emil 5 and Jenny 5 discussed their friendship with me one day when they were playing in the family corner:

> Jenny is my best friend because we both like to play the same fun plays, parents and babies. She is also really kind. If we both want the same thing we talk and do a little bit like Jenny say and a little bit like I say. Everything is great with Jenny since there are no fights and no screaming, just a little bit of what she wants and a little bit of what I want. She makes fun plays and I make fun plays. If Tony teases us, we just help each other and tell him to go out. (Field notes 2005)

Jenny and Emil like to play the same thing to care for their babies. A common interest to play becomes more important for them than their different genders. If they are at risk of being teased, then, as Emil describe, they help each other in order to get rid of the problem. Friendship then could have the function of a platform of confidence and solidarity from where children felt safe enough to break gender borders since they knew that they got help from their friends if they were at risk of being teased by someone. McNaughton (1999) argues in line with this result that children need a certain "gender safe" and "gender fair" environment in order to be able to transgress borders without the risk of teasing.

It is important for teachers to facilitate children's access to social relations. Children, as well as adults, become subjects in social relations. In play, children's most important arena for meaning making, they also learn how to relate to other children, how to communicate and how to negotiate. As several researchers have pointed out, the ability to negotiate, to be creative and to communicate tend to give children popularity among other children and access to play situations (Hellman 2010; Karlsson 2009; McNaughton 1999; Thorne 1993). Play as an important arena for social interaction teaches children how to negotiate norms, such as norms about gender.

To be included in play is therefore in itself a possibility for children to learn gender transgression. As Thorne (1993) has pointed out that children as individuals do not have the same access to social relations in play situations and they are not given the same influence. Some children are given positions as "popular", have a lot of friends and can easily negotiate influence and access, while others are given positions where they are almost totally excluded and marginalised. Sometimes children are excluded from play because they are being labelled as "not fitted" or because they do not possess the necessary skills. Thorne therefore suggests that in order to broaden children's access, teachers must take more part in children's play and make a point to teach necessary skills for certain activity to everyone.

To make it possible for girls and boys to play together without risk of being teased is important in order to promote gender equality. It may therefore be important to explicitly confront stereotyping and inequalities among children and adults. Boys and girls may be encouraged to interact more frequently but tensions and inequalities may persist, especially if teachers do not work with their own conceptions of gender and normality. In a study about teachers' conceptions of girls and boys (Hellman 2003) the teachers worked as if the preschool environment was gender

neutral and they paid little attention to actual gender inequalities in the group. The study shows that, if gender equality is going to happen, teachers actively have to set examples by challenging their own gender stereotypes and pay attention to the way they behave, speak and interact with girls and boys. To become aware of own attitudes of gender and normality as a teacher, is the first step towards gender equality in preschools. Reflexivity is, as previously discussed, important knowledge in order to see and become aware of how conceptions of girls, boys and normality are manifested by teachers in relations, language and in the way they tend to organise their environment. Methods that increase reflexivity, such as methods where a shift of perspective becomes visible like video observations, observations, pedagogic documentation, interview and pedagogic field diaries, might be useful in order to achieve that.

Some Conclusions

As several researchers have pointed out, dichotomous expectations on what it means to be boys and girls can be found in research about children, as well as in preschool practices. Such notions might also reproduce stereotype understandings about gender relations.

I have in this chapter discussed how gender is practiced in a Swedish preschool. A main point is the complexity of gender norms that exists parallel with stereotype and hierarchical understandings of the sexes, as well as with norms based on gender equality. This complexity is manifested in a number of ways in language, social relations and in the physical environment. I have explored where and when gender stereotypes tend to be reproduced and where and when they are downplayed and given less relevance.

In practices where individuals are at risk of being observed and scrutinised in relation to hegemonic norms, the risk of being disciplined in accordance with stereotyped gender norms do increase. The way Linda tried to give femininity a higher value by giving the opportunity to boys and girls to try on dresses in the circle time is one example. Since stereotype gender norms were quite present in the situation, it was not "gender safe" enough to transgress borders at that time. Children were at risk of being seen and judged by others. This was especially true for boys that were not defined as "cool and big" enough at the dinner table or for boys that wanted to try girlish coded positions in public situations. Older as well as younger girls could practice more boyish-coded positions and claim to be "cool and strong" or play Batman in public situations (which in itself is a great step towards gender equality). But, unlike them, (especially) older boys that failed to fulfil stereotyped notions of boyishness, often became focus of gender normalizing gazes from other children or teachers.

This seems especially true in situations when children's bodies were in the centre of attention, in stressful situations and in routine situations, where teacher's degrees of self reflection tended to be low. Routine or stressful situations also had the effect

that discussions and analyzes about what happened tended to be forgotten. Thus, a low degree of self-reflection made teachers act without thinking about their own behaviours, but also made them pay little attention to what actually happened.

Norms about age reinforces norms about gender. With increased age, children are expected to learn norms that divide their everyday life in differently coded characteristics, behaviours and performances for boys and girls. I have in this chapter discussed how the terms "baby", "big girl" and "big boy" were used and how categories such as age and gender interacted in the learning of gender-specific behaviours. The terms "baby", "big boy" and "big girl" become problematic in light of the national curriculum, since they counteract ideals about democracy and normalises a "typical" boyish position for boys and a "typical" girlish position for girls. By that children's possibilities to try other positions than the gender stereotyped get reduced. Age is also important in order to understand how children negotiate gender, since younger (3–4 years old) children tend to pay very little attention to gendered expectations. Older (5–6 years old) children, more often than younger children, corrected themselves (as well as others) according to gendered expectations.

In order to promote gender equality it is really important for teachers to affirm and reinforce the values of cooperation among all children, regardless of social categories. Situations when children or teachers promote cooperative projects tend to create spaces where gender stereotypes have less relevance. In addition to these observations, physical rooms that limit or shut out normalizing gazes might also function as spaces where 5 to 6 years old girls and boys played together and tried other positions than they usually were expected to do as "big girls" and "big boys". I have also discussed that children could create social relations, such as friendship and solidarity, as a way to help and support each other if they were at risk of being teased. Friendship gave girls and boys enough safety to break stereotype gender borders and could also work as a form of "safety space" from where gender could be challenged. Friendship and common projects became strategies where other things than gender became important. Emil talked about how he and Jenny both liked the same kind of plays and had a capability to make fun plays and to solve conflicts without screaming. For Emil, as well as for most children in the preschool, common interests, and the way girls and boys communicated and played with each other was generally more important than gender. Gender and gender stereotypes were accentuated by teachers and older children in public situations, when body ideals became focus of attention and when norms about age became relevant.

To conclude, I want to point at some possibilities to change stereotype gender patterns. Children repeatedly try out and question norms presented to them. To counteract stereotype gender norms teachers may support children's friendship and common projects and thereby create a space for gender equality learning. There is no natural law restricting children to learn gender stereotypes, nor any laws forcing children to believe that boyishness should be higher valued than girlishness. Children change, shift and question established gender norms. It is therefore important

to pay attention to the possibilities of change that lay within children's ways of negotiating gender.

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Chapter 9
Democracy Learning in a Preschool Context

Anette Emilson

Introduction

This chapter deals with emergent democracy learning as expressed in everyday interactions between teachers and young children in Swedish preschools. The discussion is based on a larger study, with the overall aim to acquire knowledge about what kind of values children are able to learn in preschools as well as how these values are communicated to the children (Emilson 2008). Moreover, the study took a critical approach in order to also obtain knowledge about important qualities in the communication that might move hierarchical power structures in teacher and child interactions toward a communication characterized by inter-subjectivity and mutual understanding. An assumption is that such qualities are of importance for young children's learning and experiences of democracy.

The concept of democracy is however ambiguous and it is impossible to find or develop a unitary way to understand or practise it. In educational contexts one can find two dominant discourses; one refers to teaching democracy and the other to lived democracy. Focus in this chapter is directed towards *lived* democracy as expressed in communication. It means that the communication is viewed as a condition for democracy, and of specific interest is the communication that is characterized by the meaning making and mutual understanding between the communication participants.

In the study it is shown that democracy for young preschool children deals with the opportunity of being part of a preschool community while also having access to influencing the educational practice. On a more concrete level democracy appeared as children's opportunities to make their own choices, take the initiative, solve problems, think divergently and to take risks (Emilson 2008). In the communication between teachers and children, Emilson and Johansson (2009) found three values related to democracy that were continuously communicated: participation, influence and negotiation. It is also shown that teachers use different communication forms when mediating values, here interpreted as strategic and communicative

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actions (Habermas 1995), and that these different forms have relevance for which value becomes possible to communicate. In other words how teachers communicate influences and sometime changes the communicated value. Another result is that democratic values seem to presuppose a communicative action. Three specific qualities within this communication form have been exposed as being important for children's lived democracy learning (Emilson 2008). These suggested qualities are in focus for this chapter and discussed in terms of *closeness to the child's perspective*, *emotional presence* and *playfulness*.

This chapter highlights how a communicative action, characterized by these qualities, might move hierarchical structures of power in teacher and child interactions and also how these qualities can support children's learning of democratic values in a democratic way. It also recounts the conditions under which these empirical qualities appear in data related to contrasting concepts employed in Habermas' (1995) theory of the communicative action. These contrasting concepts are asymmetry versus symmetry, in order to highlight this theoretical framework from a critical point of view and scrutinize the how-aspect of the communication as a didactic issue. First, however, a brief presentation of used theoretical concepts is necessary.

Theoretical Framework

In order to interpret and understand the communication between teachers and children, Habermas' (1995) concept of strategic and communicative actions has been used; two different forms of communication in which the intentions behind the respective behaviour differ markedly. Strategic action is goal and success-oriented, and the communicative action is oriented towards mutual understanding. While a strategic action often leads to an objectification of fellow beings, i.e. the relationship is of a subject-object character, a communicative action enables dialogues in a subject–subject relationship. The basis for the theory as a whole is the idea of communication as created understanding between people, which in turn is based on a communication without distortion and misunderstanding that is rooted in power, status, prestige, fear or insecurity (Habermas 1995). According to Habermas, there must be a belief in such free communication that is based on goodwill, argument and dialogue, and he argues that language itself gives certain conditions for achieving this ideal. The basic concept of communicative action is defined by Habermas (1995) as acts by which we maintain interpersonal relationships characterized by openness, reciprocity and mutual understanding. This effort involves by necessity the recognition of other communication participants. Such a meeting between people is of inter-subjective and symmetrical nature, in the sense that the relationship is based on the equal worth of all people. The idea of symmetry is, however, a rather tricky issue and needs a further discussion. Thus the theory cannot be applied problem-free to the encounter between the teacher and the youngest children in the educational system. Another problematic idea is that the communicative action is

maintained by questioning and testing the validity of different opinions, particularly in communication where one party does not yet possess a developed verbal language. Maintaining communicative action between teachers and children therefore requires taking into account other forms of communication that can also be physical and non-verbal in nature. The results of the larger study (Emilson 2008) showed that communication with a communicative nature between teachers and children requires special qualities, namely, closeness to the child's perspective, emotional presence and playfulness. These qualities can be seen as a clarification of the communicative action as well as the usefulness of the theory in relation to young children.

It is important to emphasize, however, that both forms of communication, strategic and communicative, fall within educational practice, and that both these forms are rational but in different ways. Before presenting some empirical examples the communication qualities, exposed within the communicative action, will be discussed.

Closeness to the Child's Perspective

Teachers' interests to come close to the child's perspective can be interpreted as an important aspect in mediating democratic values in a democratic way (Emilson 2008), and it is empirically shown that children's opportunities for participation as well as for influencing their environment and teachers' closeness to the child's perspective are interdependent concepts (Emilson 2007).

First it must be noted that a child's perspective is not synonymous with a child perspective and therefore a distinction is needed. An obvious difference is made by Halldén (2003) who argues that a child's perspective concerns the importance of the child's own perspective or culture in which the child's contribution to the information is a necessity. A child perspective, on the other hand, concerns children's conditions and interests as well as work for what is best for children from an adult perspective. Then information from the children themselves is not basic. Instead, the focus can be on the consequences of diverse political decisions, or children's different positions in society. This distinction is however insufficient for the understanding of the empirical meanings revealed in the thesis. When the communication has been described in terms of closeness to the child's perspective, some qualities in the teachers' attitudes became visible. Besides emotional presence and playfulness, the teachers' attitudes were characterized by respect toward, and curiosity about, children's own experiences and understandings of the world (Emilson 2008). Then the child's perspective gets a phenomenological approach with reference to both Johansson's (2003) and Sommer's (2003; Sommer et al. 2010) theoretical descriptions. Both researchers suggest that the perspective deals with the child's experiences, intentions and expressions of meaning.

Emotional Presence

When it looks like the teachers really try to come close to the child's perspective, they also seem to be tuning in the child very sensitively and they seem to be adaptable toward children's expressions. Then the teacher encounters the children, and the feeling they communicate, with a great ability of insight. If a child is laughing the teacher begins to laugh with the child, or if a child is sad the teacher's voice becomes soft and consoling. This way to act seems to be spontaneous and un-reflected, but at the same time it lays claim to the teacher's absolute emotional presence (Emilson 2008). What is happening here can be interpreted by Hundeide's (2003; see also, Sommer et al. 2010) reasoning about emphatic identification. Briefly, this means that the child is within the care-giver's zone for intimacy. Even if Hundeide's way of thinking refers to infants and their care-givers, this idea might also be significant for teacher–child interactions in preschool. Basically, in both cases this is about being able to view the child as a person who you emphatically can identify yourself with. Emotional presence is, however, according to Sommer et al. (2010), an inadequate expression; instead they suggest the idea about being emotionally available. Nevertheless, the conditions for a sensitive care of children deal with the ability of tuning in the child's emotions, signals and states of mind as if these are experiences of one's own.

The critical question is, however, if it is possible to have access to another person's inner feelings. Johansson (1999), who criticizes the concepts of empathy, argues that it is impossible to "step into" another person's emotional life. The only thing that is interpretable is emotions as these are expressed in actions by the way one uses the body, the voice, words and gestures. Instead of using the concept of empathy, Johansson suggests that Blum's (1994) concept of responsiveness is more fruitful for teachers to use. In this context being responsive means that you become touched and try to understand others' needs and wishes and at the same time try to make things better for the other.

Emotional presence, as it is used in the thesis, refers to such a responsiveness mentioned above. When emotional presence comprises these qualities of responsiveness, power structures between teachers and children seem to change, and it looks like both parts are able to act on equal terms. Therefore emotional presence seems to be an important condition in democracy learning. Another condition of importance in mediating democratic values, revealed in the study, is teacher's playfulness.

Playfulness

The study showed that having fun together seems to be a significant feature of several interactions interpreted as being of a more equal and symmetrical character. In these interactions teachers and children are laughing and joking together. It is interesting to notice that this commonly occurred when the teacher and the child were

focused on an external object that did not relate to themselves as persons or to their roles. The object is, for example, a toy, a sock or, as we will see below, a snail of clay. Obvious is that these interactions seem to be pleasurable to both the teacher and the child, and pleasure can be viewed as something fundamental to the play dimension (Emilson 2008). However, play is a very difficult concept or phenomenon to define and describe. Several researchers have tried, but as Sutton-Smith (2001, 2005) claims so far there is no adequate definition because play is such a complicated phenomenon. Though in research there seems to be concordance about some characteristics. It is, for example, emphasized that play is something fun and pleasant and related to inner motivation. The play aspect in the communication is, however, not just about having fun, rather it should be interpreted as something fundamental in a relational activity that might contribute to a shared reality and equality between the adult and the child, and by that also to children's emergent democracy learning.

An emphasized issue in research concerning young children is the relation between play and learning. Historically, play and learning have been viewed as two separated phenomena, while arguments in newer perspectives stress that these two are embedded in each other. Pramling Samuelsson and Asplund Carlsson (2003) have expressed this excellently in terms of a play dimension in learning and a learning dimension in play, where neither of the dimensions is more important than the other. It is empirically shown in my study that communication characterized by playfulness can contribute to children's opportunities to exert democracy in their everyday life in preschool.

It must, however, be questioned if it is possible to formalize a playful communication, that is to use playfulness consciously as a democracy learning strategy. Tullgren (2003) has, for example, shown how teachers use play to direct children toward what is desirable in preschool from an adult perspective. If so, is play then just another expression for adult's use of power? Johansson (2007) has criticized the rhetoric of democracy in a preschool context. She argues that young children have not got any real influence in preschool; instead children are always dependent on teachers' goodwill.

Firstly, communication is viewed as a condition for lived democracy. Secondly, it is not all communication that comes into question if the intention is to encourage experiences of democracy. Of specific interest is a communicative action including particular qualities, here defined as closeness to the child's perspective, emotional presence and playfulness. With this in mind let us go on with some empirical examples to see how these communicative qualities can be expressed and interpreted in everyday interactions between teachers and children in preschool.

Examples and Analyses

The situations below are chosen from data material consisting of video observations of teacher and child interactions. The fieldwork took place in three different preschools where the children were between 1 and 3 years old. Forty-six children and

their 10 teachers participated. A total of 24 hours of video recordings were gathered during a period of 13 months between 2003 and 2004. The first situation is chosen to illustrate a communicative action including the three aspects described above as important to children's democracy learning, while the second situation is chosen to show what might happen to the communication, and the what-aspect, when these communicative qualities are missing even if the intention is to mediate democracy. This contrastive way of presenting data is used in order to highlight differences and thereby illuminate important issues about experiencing lived democracy. Using contrastive situations, however, risks creating too narrow a simplification of a complex practice. Therefore, it must be emphasized that the point is to make the reasoning clear, not to view the communication acts as black or white.

The Setting (Duration: 20 Minutes)

One teacher sits at a table together with five boys. They are working with clay. Peter (2.8) comes and looks curiously at what is going on around the table. He has a sleigh-bell in his hand. *Here you come and play*, says the teacher with a happy voice. She looks like she invites him to join the activity by noticing his arrival with a comment and a smile. Ye-s, answers Peter happily. Steven (2.6) sits near by the teacher. He seems to be insecure about what to do. The teacher turns to Steven and asks him if they shall make a snail with the clay. Steven nods and smiles. Peter plays with the sleigh-bell. *Little snail*, says the teacher with an association to the well-known song. Steven watches and thumps with his hand on the table. He tries to take the snail the teacher is making for him. *Watch out…*, says the teacher with a happy voice. Still she associates with the snail song, but she doesn't sing. Peter takes initiative with the next song line and says: *Watch out*...Peter stops playing the bell and comes closer to the teacher and to Steven. He takes a new initiative by saying: *Snail*. He shows curiosity and looks closely at the snail the teacher makes for Steven. The teacher confirms Peter's observation: *Yes, a little snail*. Steven objects and says: *I want a big snail!* The voice is resolute. *Ye-es*, says the teacher obliging. Peter gives the sleigh bell to Steven who starts to play while he watches the snail making. Also Peter watches and laughs. Steven turns to the teacher and says: *Now I got the bell. Snail*, says Peter. *Little snail*, sings the teacher. At the same time the teacher is ready with Steven's snail and gives it to him. Tom (2.6) comes and sits down at the back of a chair next to the teacher. *Carefully*, the teacher says without interrupting kneading the clay. *Carefully*, Tom answers. *Watch out*, says Peter who is taking up the words from the song again in a new context. The teacher catches on to Peter's expression and says: *Yeah, watch out!* With a playful voice she continues: *Here comes the little snail*. Steven is playing with his snail and Peter is watching and laughing. *Little snail*, sings the teacher. Suddenly Steven's snail gets broken and he says: *It is broken, the snail*. *What did you say, is it broken*? the teacher wonders and turns to Steven. *Broken,* says Steven. *Is it broken?* The teacher talks with a playful voice and Steven answers in the same playful way: *Yeeeeeas*! After a while Tom comes to the teacher and says: *Look here, Tom's snail*. He has clay in his hand and starts to make a snail in front of the teacher. *Yeah, now we will see when Tom makes a snail*, the teacher answers and starts to sing about the little snail. *Look snail, watch out! watch out!,* sings Tom. *Otherwise I'll get you*, sings the teacher.

Emergent Democracy Learning

What might the children learn from this very ordinary preschool setting? A quick look at the situation would perhaps reveal that this is just a moment of passing the

time with clay and probably the teacher has no specific learning object in mind. But by rereading the transcriptions from the video recordings, other interpretations emerge. Obviously the teacher takes the initiative to make snails, but apparently this is not about producing snails or music. Instead it can be argued that the children in this situation are learning by "doing" democracy. We can see children who, deliberately and with engagement, take many initiatives. They participate in a social interplay, where they are listened to and where there seems to be a shared reality. An interpretation is that the children here learn a lot about talking and being listened to. Perhaps they also learn that they are entitled to support in their development of social and linguistic skills, when they interact with peers and an adult who listens and gives response to everybody. The children also might learn to take initiative with conversation and to rely on their own resources to create meaning. Identified values of a democratic character in this situation are participation and influence. Participation is interpreted as being engaged in what is happening, as well as being included and accepted. In this situation both the teacher and the children appear as engaged in what is going on, and participation deals with both wishes and possibilities to participate. Thus the value of participation is collective-oriented directed towards the public good. Moreover the children influence their educational environment by taking initiatives and making choices. To these young children the value of influence appears as more individual-oriented. It seems to be about the right to force a specific idea or initiative through, for example, as when Steven communicates that he wants a big snail. Of importance to emphasize is, however, that children's influence is not the same as letting children do as they like, but rather that the encounter between the teacher and the child reflects a more symmetrical relationship, with respect and mutuality as two important components (von Wright 2000).

The what-aspect of the communication here, which is interpreted as basic democratic values, is dependent on the communication's how-aspect. Below it will be shown how some vital communication qualities make dimensions of democracy learning possible to young preschool children.

Important Aspects in a Communicative Action

The communication around the table can be viewed as a communicative action. It shows how the teacher tries to *come close to the child's perspective* by taking the starting-point for the conversation in something that is closely linked to the children. What she actually does is take the initiative to make snails with the clay and also to make the connection to a song they often sing in circle time. Then a recognizable framework is created, because snails are something the children can associate with in different ways. It is also interesting to see that both the teacher and the children contribute to developing the communication further. By that one can say that the teacher also acknowledges children's ways of understanding and viewing the world. The children's world becomes seen and heard and is encountered respectfully. However, this is not primarily about producing snails; the situation is

more of a social and a communicative event where the interaction itself might be the main object. Perhaps that is why the teacher can adjust to the children's initiatives as she does and uses these to go on with her own ideas. This is shown, for example, when Peter makes an advanced comment with a double meaning that refers to the song-line, *Watch out*. The teacher responds immediately, and by that she also directs the situation very carefully. Also the children direct what to do as in the sequence when Steven claims that he wants a *big* snail. The teacher helps him to develop his idea. Critical voices could say that the teacher here fabricates things for the children, an act that has low priority because preschool children are often viewed as competent to manage by themselves. Another interpretation however is that her helping attitude supports the children's interests, and as we can see at the end of the situation the children start to make snails by themselves. In other words it looks like the children got inspired and wanted to do the same thing as the teacher. When the children try to communicate their ideas about snails with their verbal, musical or body language they got immediate response and the teacher supported the children in their attempts to express themselves. A precondition for teacher's opportunities to come close to the child's perspective is, according to Pramling Samuelsson and Sheridan (2003), a solid knowledge both about children's development in general, but also about the specific child.

Moreover, characteristic for this situation is the teacher's emotional presence. She is very focused on the children in front of her and she gives them all her attention. It looks like she is tuning in every child's emotional state of mind in a very sensitive way and seemingly she tries to provide for everyone's needs. In the beginning of the activity she noticed Steven's insecure behaviour and directs her attention towards Steven by asking him if they shall make snails. Sensitively she changes his state of mind and he becomes an active participant in the activity. She is totally present in the situation, and she is very responsive and flexible toward the children and the circumstances.

The atmosphere around the table can be described as pleasant and enjoyable. They are playing with the snails and a chasing-game with the snails occurs spontaneously. Both the teacher and the children use playful voices, as when Steven's snail got broken. Steven tells the teacher about his broken snail, who answers with her play-voice, and Steven replies in turn with a play-voice as if he meant "oh dear!". The whole situation appears as amusing, interesting and even exciting for the children. By using a playful voice the teacher shows engagement in the situation, which seems to stimulate the children's interests for going on with the activity. The play dimension here seems to change hierarchical power structures between the teacher and the children, when this dimension seems to contribute to a turn-taking on equal terms. Both parts take the initiative and make choices that develop the playfulness in the situation, and an interpretation is that this leads to the possibility of experiencing a shared reality for both the teacher and the children.

Let us go on with another example to see what happens when these three communication qualities are missing.

The Setting (Duration: 15 Minutes)

The teacher Gunilla has just finished a short circle time session with songs. The group of two-year-old children is assembled, and the teacher is sitting on a low chair in front of them. It is time for the children to make a choice from some alternatives about what to do after circle time. The teacher Christel enters the room and sits down on another low chair beside Gunilla. She has pen and paper in her hand. Christel begins checking which children are going to take part in the theme activity about water. *I know who's going to work with water today. Because now it's those children that haven't tried the water and the dishcloth. And Karin (teacher) told me that it was Matilda* (2.9). *Matilda will be in the room with the water today.* Whilst Christel is talking, the children argue with each other and she exhorts Hilda (2.2) to be quiet by saying her name. Christel continues: *And Fanny, Fanny do you want to be in the room with the water today, too?* She looks questioningly at Fanny (2.6) who answers *Mm*. Christel makes a note of that and turns to Sonny (2.4): *And Sonny, and Sonny do you also want to be in there with the water?* Sonny shakes his head. *Don't you?* Christel sounds surprised and says: *You haven't tried the dishcloth.* Sonny is standing up now beside his place next to the wall. He picks at a picture on the wall. *Sonny, Sonny; sit down on YOUR seat. No, sit down Sonny. Sonny, sit down!* Sonny looks at Christel without sitting down. *Sit down; sit down*, Christel repeats with a resolute voice. The teacher Gunilla goes forward to Sonny and she sits down next to him. It is quite noisy in the group now, and Gunilla exhorts the children to calm down and to listen to Christel. After a short altercation between the teachers about who is going to carry on leading circle time, Christel begins to talk again. With a strict voice she tells Robin to sit up. Then with a nice tone she says: *Robin, Robin you can paint, you can draw, and work with clay and glue…. and build with the blocks.* When Robin keeps silent (2.7) Christel continues: *If I ask like this: What do you want to do, Robin?* After a short silence she asks: *Do you want to paint? Yeah,* Robin says. *Or do you want the clay?,* Christel asks. *Yeah*, Robin says again. Suddenly Annie (2.3) exclaims: *Clay*. Christel no longer focuses on Robin and turns to Annie and asks: *Do you want to work with clay? Yeah*, Annie answers. *OK*, Christel says and makes a note of it on her paper. Sonny is standing up again, and Christel takes him by the arm and takes him to his place and says in an irritated voice: *Sonny, sit down. In circle time that's the way it is. Oh, it doesn't matter. Ye-es*. Gunilla says quietly, almost to herself: *Ye-es I think I'll put him on my lap instead*. She picks him up and sits him on her lap and says: *Now you have to listen, Sonny, do you hear me?* Christel keeps order among the others by taking in the toys the children hold in their hands. *Sonny wanted the clay,* Christel points out. *Sit up Robin*, *OH*! Christel's voice is determined and she finishes the reprimand with a sigh before she continues. *And Annie wanted clay. Is there someone else who wants to work with clay? Yeah, me too clay*, Hilda says. *Hilda wants to work with clay. Anybody else*, Christel asks? Gunilla answers *Robin*, which Christel confirms. Robin does not answer and it is quiet for a short while before Christel turns to the next child. When the turn comes to Matilda she says she wants to paint. But the paint activity has been chosen by several children and is therefore fully booked. Christel looks at her notes and says: *Then I'll put Matilda's name in brackets so I know that you maybe want to paint tomorrow. Then I know that you want to do that tomorrow.* More children choose the paint activity and are therefore put in brackets and also promised painting the next day. They ended circle time by eating fruit together. After fruit they divide into different groups and Christel directs the children to the right activity.

A Deliberate Attempt to Allow Toddlers to Exert Influence

This situation is different from the other; here influence is formalized. The learning object is verbally expressed as letting the children influence their educational environment by choosing which activity they want to join from some alternatives. The

question is if dimensions of democratic values can be identified in this situation. Do the children exert influence here or do they learn something else? Of course it is impossible to say what these young children really learn, but I will point to some important issues that contradict that the children are able to exert influence in this situation.

First, we can take a look at the choices related to the age of the children. When the teacher asks what Robin wants to do by listing the alternatives that are available, he remains quiet. When it comes to more direct questions, he answers *yes* to every one of them. From Robin's perspective the situation seems to be incomprehensible, and it looks like he does not understand what he is expected to do. One can ask if these kinds of choices are reasonable for 2-year-old children to make. Are they developmentally ready? It is obvious though how the teacher directs the children's choices in different ways. One strategy seems to be persuasion, as in the case with Sonny when he rejects the teacher's suggestion to do something he has not tried before. We can also see how the children's attentions are directed in such a way that each activity has an almost equal number of children. If the activity is fully booked, the child's name is put in brackets as a guarantee for doing it the next day. One can ask if 2-year-olds are able to understand such consequences. Instead of improving the children's influence, the whole situation turns into a mediating of disciplinary values. The teacher control is strong and maintained by an extensive use of verbal reprimands concerning how to behave in the circle time. The rules are explicitly expressed and indisputable. Instead of experiencing the value of influence, these children might learn to sit still, to be quiet, raise their hands if they want to say something and that it is the teachers who have the power to make decisions. Thus something important seems to be missing in the teachers' attempts to give the children influence in this situation.

Strategic Action Impedes Emergent Democracy Learning

The communication form expressed in the example above is interpreted as strategic, and the strategic part is in the way the teachers direct the situation. Even if the intention was to give up control, they maintain strong control over the communication's what and how-aspects. A strategic action is oriented towards goals and success, and it looks like the teachers' intentions in this situation is to reach specific goals formulated from an adult perspective which does not take the child's perspective as a starting-point. Focus is on effects. Then influence might be viewed as something the children have to learn for future use, and it looks like the form becomes more important than the content. The teachers' attitude is formal and authoritative, characterized by an emotional distance. At the same time the teachers seem to try to come close to the children's perspective by listening to their wishes, but they never really do because of their strategic attitude. The encounter between the teacher and the child is asymmetrical and of a subject–object character. Providing for the children's voices to be heard as well as giving them time to be listened to, do not

seem to be enough for influence to emerge. Something more is needed in the form of a permissive environment in which every child has enough confidence to take initiative and exert his or her own choices. It looks like the formal attitude adopted in the example makes the children anxious, and the conversation is now and then above the children's heads. This case lacks sensitive responsiveness and playfulness which makes the whole situation fraught and tense. Instead distance and demands are significant features.

Discussion

The aim of this chapter was to highlight how a communicative action, characterized by specific qualities, might move hierarchical structures of power in teacher and child interactions and show how these qualities can support children's learning of some democratic values in a democratic way. Finally, I will discuss didactic implications related to young children's learning of democracy. Basic didactic issues refer partly to the question about the selection of content, *the what-aspect*, partly to the question about legitimacy, *the why-aspect,* but also to the question about how a specific content shall be communicated, *the how-aspect*.

The why-aspect is, on the one hand, an undisputable question in this case because democracy, as a learning content, is not a free choice in Swedish preschools. It is directed in the curriculum that educational work shall be based on democratic values and shall by that also provide children with an understanding of democracy (Ministry of Education and Science in Sweden 1998). On the other hand, one can ask what democracy actually means on a concrete level in relation to young preschool children. What is a relevant content concerning democracy in preschool? Fundamental democratic concepts, emphasized in the curriculum, are seldom discussed in any depth, and in a pluralistic society these can be interpreted in various ways. It means that every preschool, working team and individual teacher have to make their own interpretations about what emergent democracy learning might be related to these young children. The importance of children's participation and influence is emphasized in the curriculum, but also among teachers and in the official debate. Thus there is a normative rhetoric about these concepts, but empirical studies concerning democracy learning are rare. It is empirically revealed, however, that a concretization of dimensions of emergent democracy learning, focused on participation and influence, deals with children's opportunities to take initiative and to make their own choices and decisions, which in turn is dependent on teachers' attitudes (Emilson 2008). At the same time it must be emphasized that democracy is not the same as just to give opportunities to take the initiative and make one's own choices. In this chapter it is shown how the what-aspect of the communication is interrelated with the how-aspect and that the communication form becomes crucial for what is possible to communicate. It is exposed that a strategic action is not useful if the intention is to mediate democratic values. To communicate democracy, a communicative action seems to be needed, and the conditions refer to the corre-

spondence between the teachers and the children when they interact with each other. Mutual understanding and equality in the relationship have been emphasized, but it is also shown that these fundamental ideas are problematic; thus further discussion is needed. Below, teacher and child interactions will be scrutinized in terms of asymmetry versus symmetry.

Symmetrical Encounters—A vision or a reality?

The concepts of asymmetry and symmetry say something about the equality in the communication between teachers and children, which in turn refer to the different communication forms used in the analysis. Asymmetry is related to a strategic action, and in the example where the children were able to choose an activity, it is shown how this action leads to explicit authoritarian power structures in which the child is given a subordinated position. The relationship is of a subject–object character. According to the analysis the asymmetrical relationship is also characterized by an emotional distance and a strong teacher control over the communication's what and how-aspects. A tendency is that asymmetrical relationships do not lead to children's opportunities to learn dimensions of democracy, because the nature of asymmetry is rather interrelated with hierarchical power structures than with a democratic foundation (Emilson 2008).

The examples presented in this chapter are used to show that preconditions for children's lived democracy are to be found within the communicative action based on a symmetrical relationship. Then the power between the teacher and the child seems to be divided more equally, and both parts become subjects. To talk about symmetry is however a difficult task, especially in relation to educational practice, because the pedagogical encounter must be understood from its unequal nature. In other words, symmetry does not mean that teachers and children can manage the same things or possess the same knowledge, experiences and power. Simply, symmetry must rest on other ideas to be useful in an educational practice. Perhaps such an idea is Habermas' (1995) fundamental condition about the equal worth of all people. Practically this means that all involved have the same opportunities to talk and participate. According to data this idea seems to be relevant both theoretically and empirically, but at the same time the analysis has shown that we must be aware of the risk that the relation just makes a show of being symmetrical, when it actually is an expression for manipulation or distorted communication. The intention behind a distorted communication can be unconscious as in the example where the children should choose an activity. In this case the teacher's intention was to encourage the children to make choices in order to influence their educational practice. What at a first glance might look like symmetry appears in the analysis rather as asymmetry and manipulation. Even if the teacher exhorts the children to choose an activity, she directs the children's choices in different ways. Then the manipulation consists of encouraging the children to make choices at the same time as the teacher keeps the control over the choices, for example, by distributing the children into different

groups when an activity could be viewed as fully booked. In addition children were also persuaded into activities they have not chosen. This distorted communication led rather to a mediating of discipline than democracy. In other words, asymmetry and symmetry in the communication do not just have consequences for the how-aspect and the relational character of the pedagogical encounter, but also for the what-aspect; for what content becomes possible to communicate.

The pedagogical dilemma related to asymmetry and symmetry deals with the balance in the relation between the teacher and the child. From the teacher's point of view, this dilemma can be described in terms of an authoritarian and a democratic attitude. On the one hand, teachers have to step forward as an obvious and necessary authority, and on the other hand, they should be a democratic and equal dialogue partner. A similar dilemma from the child's point of view is about obedience and integrity. On the one hand, this deals with taking the position as an obedient and adapted object, and on the other hand, as a competent subject in conformity with adults. Johansson (2005) has found that teachers view the child's integrity partly as a right of the child, and partly as something the child must deserve. She criticizes this reasoning and argues that teachers must defend the children's right to integrity and not use their power to give integrity when they judge it as justified. Notable is that in such dilemmas the concepts of asymmetry and symmetry are used in a very dualistic way, and the question is what happens if we try to interpret these concepts more dialectically. Perhaps this is not about thinking in terms of either/or; either an authoritarian or a democratic attitude, either viewing the child as an object or a subject. Instead the pedagogical challenge might be to create a new balance between teachers and children that holds both asymmetry and symmetry. Erman (2006) has criticized Habermas' concept of symmetry and argues that it is more fruitful to talk about *mutuality,* because it includes both the dimension of asymmetry and symmetry. The differences between symmetry and mutuality are described as follows:

> While symmetry is synonymous with regularity, similarity and uniformity, mutuality is synonymous with common, reciprocal, bilateral and multilateral, and thus embraces more fully, not only similarity and symmetry, but also difference and asymmetry. (Erman 2006, p. 387)

This understanding makes a dialectic interpretation possible as well as a communication of democracy that embraces both asymmetrical and symmetrical dimensions.

The concept of symmetry as a normative ideal for teacher–child interactions has also been criticized by other researchers who instead suggest the concept of acknowledgement as a starting-point for inter-subjective relations (Bae 1992, 2004; Honneth 2003; Østrem 2007). The meaning of acknowledgement is based on the asymmetrical idea, i.e. asymmetry is an outer precondition that we can not leave out of account. According to Østrem (2007) this always means a risk for violations of the weaker part in the relation. The researcher suggests an understanding of asymmetry as a premise to co-operation where the important point is to minimize the risks for negative consequences. She also argues that taking a starting-point in the child's perspective is a necessity, and this embraces that adults respect children as equal subjects.

An important question to raise, however, is if teachers' use of a more symmetrical and democratic attitude is just another way to maintain power and encourage obedience. As mentioned before, letting children take the initiative and make choices and thereby influence their educational environment is perhaps not an expression of democracy. Maybe it is a goal-directed strategy toward encouraging obedience. Previous research has shown that open authoritarian forms of exercising power have changed into more invisible means (Bartholdsson 2007; Hultqvist 1990; Nordin-Hultman 2004), and Bartholdsson (2007) argues that the exercising of power has become friendlier which makes it difficult to identify as an expression of power.

It is of importance to raise fundamental questions about democracy in relation to preschool children, and further studies on the subject are desirable. What are the conditions for real democracy in preschool? Is there a risk that the concept of democracy becomes hollowed out and reduced to just mean opportunities to make choices, exert participation and to be treated with some respect? Nevertheless the communication qualities highlighted in this chapter are not to be seen as a didactical solution for emergent democracy learning, but they do still seem to contribute with important aspects for this issue, i.e. equality, respect and mutual understanding.

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Chapter 10
Early Childhood Literacy and Children's Multimodal Expressions in Preschool

Elisabeth Mellgren and Karin Gustafsson

Introduction

According to the United Nations Convention on the Rights of the Child (1998), it is the democratic right of every child to be literate. There is a consensus between research and curricula that early childhood education has to support children's literacy-learning and that all children are entitled to take part in literacy and become literate. This chapter presents theoretical views of early childhood literacy and children's early "writing" as multimodal expressions. This will be illustrated by two empirical examples: one from everyday life in the preschool where the preschool teacher integrates literacy practice in theme work. The second example illustrates opportunities to plan for goal-oriented reading primarily addressing individuals. At the end of the chapter we will discuss why preschools must take a broader textual approach to early childhood literacy to support every individual child.

Early childhood literacy means here various creative ways of using the written language, corresponding to the concepts of "broader textual concept" and "multimodality". It fits in with the description given by Gillen and Hall (2003), who see the child's early writing activity as a competent creation of meaning. What a child achieves on a particular occasion should be seen as an imprint in time of what the child understands at a specific point in time and in a specific context (Gee 2002; Kress 2003).

Early childhood literacy in preschool is much broader than the skills of writing and reading; it can be described as a way to bring meaning in a permissive atmosphere without restrictions. In practice this means that children are given the opportunity in the preschool to write/draw texts without having to spell and form letters according to normal standards. They can also experience how preschool teachers write texts to communicate meaningful messages with the oral language

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as the base, for instance in written signs, etc. Teachers furthermore write down what the children say, an activity that gives children an experience of the interrelation between spoken and written language, the realisation that what they say can be written down and read again. Other people can also read what has been written even if they were not there when the text was created. Children can use texts for information or for remembering certain events, thoughts, etc. and can use them as an inspiration for their own writing. Once children's thoughts are documented in writing, there is an opportunity for adults to communicate with the children on the basis of their thoughts.

As children early establish an approach to literacy learning that tends to be stable, it is essential that they are exposed to texts, pictures, books, etc. in different communicative contexts. Structured play with the written language, which is developed from children's everyday life, their conceptions and interests, increases their awareness of written language (Dahlgren and Olsson 1985; Gustafsson and Mellgren 2000a, 2005). In one of our studies (Gustafsson and Mellgren 2002), which was designed to observe and describe how texts are used in preschool through documentation of the written language in everyday interactions between children, teachers and the written language environment, it appears that most texts currently used are letters and names. Portraits are also common. Less frequent are projects, notes and posters, picture symbols, word pictures and colour symbols such as trademarks. The way that texts are used differs in the preschools observed. There are preschools where texts are used to communicate beyond time and space, which we refer to as a narrative environment. The features of such an environment are that texts/images:

- communicate a message,
- clearly relate to the children's experience and the context in which they are involved and
- are used in a natural way in everyday interaction (Gustafsson and Mellgren 2005, p. 39).

Of interest is the multimodal nature of the preschool literacy tradition (Mellgren 2005). In a study of a calendar in preschool, there was a system of colours, shapes, positions, pictures, words, letters, numbers and other symbols. According to Mellgren, with reference to Kress and van Leeuwen (2001), this is an example of multimodality using different types of expression to communicate a message. When children's thoughts are documented (e.g. written down), the adults have a platform for communicating with the children. The preschool teacher can read to the children what they have said in order to draw attention to children's thoughts, and the children can thus also develop their thinking further. In everyday life, children are given opportunities to be involved in decision-making processes that affect them in different ways. The preschool teacher can show the diversity of the ideas that the children have and thus make visible their different perspectives (Pramling 1990). When teachers use the texts in everyday contexts, the children can elevate their understanding of the meaning of the literal symbols.

The Curriculum and Early Literacy in Preschool

Written language and written communication are in a period of change; their tools have changed in recent years with the advent of virtual and digital environments. New concepts are being used, such as a broader concept of language including other forms of expression than the verbal one, for instance, the languages of music, art and movement. One also speaks of multimodality as a broader textual concept, meaning that several ways of expressing and addressing, apart from text, are used in communication (Kress 2000; Kress and van Leeuwen (2001).

Preschool activities in Sweden are built around a thematic approach to playing and creative activities. Activities for children's written language include diverse and creative ways to use written language, which also fits well with the concepts of a broader concept of text and multimodality (Gustafsson and Mellgren 2005). With these starting points, it is important that preschool children encounter texts in different contexts and with a content that links to the children's experience of the world in which the teacher interacts with them.

The goals and guidelines for the Swedish preschool are formulated by the Government in the *Curriculum for the Pre-School* (Ministry of Education and Sciences 2010). The professionals are responsible for achieving an educational programme in line with those goals and guidelines.

The guidelines are outlined as goals to *strive for* that support the individual child's development and learning. The goals can be described as the desired quality of achievement in preschool. In the curriculum, the preschool is given greater responsibility to make children aware of and value their own interest in the written language.

An aim is for children to learn in play and playful activities and use different expressions. The goal to develop the ability to listen and sort out different sounds and understand the other person's perspective is emphasised, to ensure that children will take part in expressions and interpretations in communicative practice.

Goals to strive for

- The pre-school should try to ensure that children:
- develop their ability to listen, to reflect and express their own opinions and try to understand others' perspectives;
- develop varied spoken language, vocabulary and concepts and their ability to play with words, tell, express ideas, ask questions, argue and communicate with others;
- develop an interest in the written language and an understanding of symbols and their communicative functions; and
- develop an interest in images, texts and various media and their ability to use, interpret and discuss these (Ministry of Education and Sciences 2010).

An important task of teachers in preschool in their encounter with children is to draw their attention to the object of learning, that is, particular instances of the more

overarching goals set out in the curriculum. What is considered important knowledge is shown in the way the environment is organised in preschool, and any decisions in this respect affect children's learning (Bjervås 2003; Pramling Samuelsson and Asplund Carlsson 2003). That the competence of the teacher determines how well the intentions of the curriculum are realised was confirmed by Alvestad (2001). Any evaluation of the goals of the curriculum should focus on the knowledge of the teachers and their strategies for children's learning rather than on children's individual learning (Johansson and Pramling Samuelsson 2003; Sheridan 2001).

The Progress in International Literacy Reading (Skolverket 2007, p. 1019), PIRLS 2006, study shows that parents' educational background is relevant to pupils' performance in reading when they reach 10 years of age. Parents who have a higher educational background tend to read more to their children and have more books at home, allowing the children to further develop their knowledge and skills. It also tends to lead to the development of a large vocabulary and helps increase children's ability to retell stories. Children that come from families of that kind are also more used to taking part in different types of conversations, and this helps them overall to prepare for reading instruction in school. In the Swedish society, most children meet the written language at an early age in their homes, but there are variations and there are therefore also children with a more limited experience of written language in everyday life. According to Heath (1983), children's attitudes and approaches to texts are affected by their early experiences at home. The preschool can be seen in this perspective as an important arena in terms of paying attention to different types of textual contexts, especially for children who are not given the natural experience of reading and writing activities in the home.

The curricula of the preschool and compulsory school include goals and there is a natural continuity between the two (Ministry of Education and Sciences 2010). The individual child's performance is not subject to evaluation in preschool. No marks or written assessments are issued. The preschool conducts educational activities that children can begin at different ages and participate in for different durations. The curriculum states that preschool should be a developmental and rewarding educational programme for all children who participate and that it must be based on the respective conditions of the children.

As there are no goals or marks for the individual child to achieve in preschool, the preschool teacher must be familiar with the objectives and desired proficiency for Swedish pupils in the third year of primary school. They must be aware of and reflect upon what these issues mean for the educational activities in preschools. The present chapter will discuss how teachers can develop activities in preschools to meet all children's experience and develop early childhood literacy. When children reach the end of the third year of compulsory education, they should have achieved the goals described below.

The goals to be reached by the third school year express the lowest acceptable level of knowledge, and the expectation is that most students will advance further in their learning than the set level. The goals are divided into three parts: reading, writing, speech and talking. In these guidelines it is also emphasised to enable students

to understand and draw conclusions from texts and be able to relate them verbally and in writing (Ministry of Education and Sciences 2009).

Swedish preschool teachers need to be familiar with the goals/knowledge requirements for pupils in the third school year and think about what these goals might mean for preschool achievement. It does not mean that preschool is merely a preparation for schooling. An important issue is how preschool can support literacy learning and increase development and learning later in school. We will discuss how preschool teachers can organise for achievement in the preschool and support children's experiences to be able to use language and gain literacy to make meaning.

How to Support Early Literacy Learning in Preschool

There is a trend in Swedish early childhood education to document children's learning. As we mentioned earlier, there are no fixed goals in the Swedish curriculum for early childhood education and, specifically, not for language. The latest evaluation of the Swedish preschool shows that there are various types of records and documentation of and individual plans for children's development (Carlsson Ericsson and Åsen 2008). An assessment tool that includes diagnostic models that is distributed all over Scandinavia is TRAS or Tidig Registrering av Språkutveckling [English: *Early Recording of Language Development*] (Espenakk 2005). Another tool is the narrative way of recording children's learning in learning stories, developed by Carr (2005). In a European project, EASE (Early Years Transition Programme; http://www.ease.com), "learning stories" are transferred into literacy didactics. The approach in learning stories is the following:

The goal is to assist teachers in the process of noticing, recognising, and responding to learning within a socio-constructivist curriculum and to contribute to discussions about assessments.
The Learning-Story approach includes practices that:
Enhance children's sense of themselves as capable individuals and competent learners
Reflect the holistic way that children learn
Reflect the reciprocal relationships between the child, teachers and the learning environment
Involve parents and where appropriate the extended family
Document children's engagement in learning experiences. (*http://www.ease-eu.com*)

The EASE application has developed a list of examples of literacy indicators and an indicator list of contexts. It is hoped that this will result in a broader way to observe literacy events and interpret the events in their context. However, the indicators should only be seen as inspiration for what to look for in attempting to conceive of early literacy in broad and holistic ways (Mellgren et al. 2010).

Early childhood education in Sweden has a tradition of involving children in theme work and supporting children's learning in the theme concept. Children's learning is also supported in natural situations in ordinary daily life in the preschool. In this chapter we will therefore give examples of literacy practices in preschool that are based on the children's experience and interests when the preschool teacher encourages and supports the children in realising their ideas. We will also give examples of teacher-initiated teaching activities that are designed to be meaningful to the child.

Teaching Based on the Children's Experience and Interests

To develop early literacy teaching and learning in preschool, we formulate six *didactic starting points* for a programme that has been tested in preschools and preschool classes to introduce children to the culture of literacy (written language) by providing and supporting children's awareness of written language in different ways (Dahlgren et al. 2006; Gustafsson and Mellgren 1991, 1996, 2000b, 2005). They are:

- support activities containing the written language,
- ensure that the content is based on children's experience and interests,
- consider the basic similarities in the spoken and the written language,
- support development of the child's awareness of spoken language, literacy and phonological awareness,
- arrange a co-operative setting between the child, parents and educators: let shared participation and responsibility guide the educational programme and
- let writing and reading activities be a part of everyday work, continuously and in a variety of issues and approaches, so that a great deal of cumulative time is devoted to written language (*time on the task*).

The programme intends to alert children to the communicative function of the written language by communicating via writing in everyday situations. Children will be supported in developing an awareness of the benefits they can have in writing, which helps to increase their motivation to use written communication with images and texts.

An Early Literacy Learning Programme

Below we will illustrate how preschool teachers plan their work in accordance with the programme. The children in this preschool are between 1 and 5 years old.

It is springtime and the preschool is organising a traditional summer party to which the children's parents and siblings will be invited. The planning starts a couple of weeks before the party. The aim is to involve the children in the preparations. The starting point is to see what kinds of ideas the children have about a party and, in particular, a summer (garden) party.

The children will take part and co-operate in all the preparations. The preschool teachers want to use written language in the preparation, documentation, implementation and evaluation of the party.

The preschool teachers support the children in talking about their experience of parties, and it appears that there is a wide range of experiences among the children. The teachers tell the children that a summer party will be held soon at the preschool. Some of the children have attended the preschool party previously and are asked to share their experiences with the rest of the children in the group. The teachers ask the children to make suggestions about what can be done at a party like theirs. Each child receives a piece of paper to make a notation—drawing, scribbling or writing—of their suggestions for activities for the summer party. When the children are finished with their notation, they are encouraged to tell the others about it. The preschool teachers sum up the children's thoughts in a flip chart. Together they create a list of the children's suggestions for activities. Some of them are the children's experiences, but there are also new ideas, such as who can run fastest with a child on his shoulders. The teachers and the children discuss the suggestions and decide which ideas can be used.

When the preschool teachers and children have decided what to plan for, they form work groups to take responsibility for preparing the different activities for the party. One example of preparations is to sell hotdogs with buns, juice, cookies and lottery tickets. They also make recordings of the children's singing and "Play-Doh" (a clay made from flour, salt, alum and water) to be sold to the parents. The children make shopping lists and signs, and practise songs and a play that will be given at the party. The children can choose which part of the preparations they want to take responsibility for. All of the children make an invitation for their own families in their own personal style.

When the children make invitations to their families, the preschool teachers are available for support and to listen to their ideas about how to write the message on the card. The children talk to each other and the teachers about the message they are drawing or writing and the notations—texts/letters/pictures—on the invitation. Some children want the teacher to write the letters. Others ask for help in writing one or more words. There are also children who choose to draw a picture to give the message, and some of them write letters independently and sometimes write words with no support. The teacher has an important role in supporting each child in his or her own way of understanding on the basis of the child's experience and thoughts. Each child gives the invitation to his or her own parents.

One aim is to involve the parents, and the teachers thus document the planning and preparation process. Both the parents and the children can read the documentation of the preparations, which is taped on the wall at the entrance to the preschool. When the party is over, the teachers use the documentation to reflect upon the event together with the children. The children evaluate by making notations—drawing, scribbling and writing—of their thoughts about the events. One girl makes notations in the form of two lists. She explains that the lists give everything that was fun about the party, such as the hotdog with the bun, the signs that they had made, money, etc. (Gustafsson and Mellgren 2003).

In this example, the children are involved in different kinds of "written" expressions:

- write for the aim of remembering,
- write for the aim of communicating,
- write for the aim of documenting.

We call this a *narrative textual environment* (Gustafsson and Mellgren 2003); the children use writing and reading in their own everyday life to *make meaning* (Gee 2002). The preschool teachers arrange the environment and take part in the children's experience and ideas in dialogues as a starting point in the planning and preparations for this summer party. The children have an opportunity to express themselves in a multimodal way, and there are meta-dialogues about how it will be understood by the "reader": they have to shift the perspective to the receiver of a message (Kress 2000, 2003). The parents and siblings became involved in a natural way because they were the target group for the summer party. There is a long time on the task in discussions, arguments, listening, asking questions and metalinguistic dialogues concerning language and literacy (Adams 1994; Lundberg 2007).

It is important to give children experiences of story reading and conversations at an early age (Lundberg 2007). Lundberg and Herrlin (2005) argue that it should be a right for every child to take part in a daily reading session that supports his or her development of vocabulary, conceptual understanding, fantasy, empathy and joy of reading and texts. Nikolajeva (2003) also points out the importance of early experience of reading picture books and their broader significance:

> Illustrated books are the most essential source of reading experience for young children. The reading experience is here understood in a very broad sense, as enjoyment, knowledge of the world, self-knowledge, moral and social lessons.
> […] Picture books are one of the many contemporary multimedia in which the receiver is challenged to assemble the meaning from different means of communication. Therefore picture books provide excellent training for many other later reading experiences. (p. 243)

Reading in Early Childhood Education: An Empirical Study

In one of our empirical studies (Mellgren and Gustafsson 2009), a teacher read a story to each child. Altogether 215 children aged 1.2 to 3.3 years participated. With the help of different artefacts symbolising the contents of the book, each child was asked to retell the story. The researchers video-observed the whole sequence. They focused on both the teacher and the child: how the teachers interacted with the children while reading to them, what they did and said and how they approached the child during the retelling session.

The context is a planned observed session; the preschool teacher had not read the book before and it was also new to the child. The book (*Alla får åka med*, English:

Everybody Can Ride Along, Tidholm 2004) is about a girl who drives a truck and meets five figures: a Santa Claus, a dog, a pig, a boy and a teddy bear. All of them are picked up in the truck, one by one, and they go home to the girl and have supper together. All of them are hungry. All the figures (small dolls) and the house (a shoebox) are visible to the child after the reading.

Before the session the preschool teacher had been asked to:

- give the child the opportunity to interrupt and give his/her reflections on the story,
- respond and give answers to the child's initiatives,
- make reflections appealing to the child's experience,
- invite the child into a dialogue about the story/pictures,
- provide props for the story when the book was read once or twice,
- help the child to retell the story using the props and
- ask questions to support the child.

In this reading session design the preschool teacher is the active partner at the start and invites the child into a dialogue. In the play with the props the child is more or less the active partner and takes the role of "storyteller". The teacher acts as a "model" at the start of the session and the child then takes the opportunity to play with the props. It happened that a few of the children in the study consulted the book in retelling the story. Some children only played with the props without making any connections to the story. There is a variation in how children act together with the text/characters that can relate to Langer's (2005) research on children's inference in texts and in what way children perceive texts. She describes how children can make reflections about the text based on their own experience and thoughts and draw inferences from the text and the different worlds of imagination:

- being outside and going into the text-world,
- moving around in the text-world,
- stepping out of the text and relating it to their own experience and
- stepping out of the text and reflecting on the experience of reading.

In terms of the age of the children in this study, we can see that the results largely co-vary with age. The general features of children's language development can be confirmed on the group level (Strömqvist 2003). Another factor we consider important is the children's age being a measure of their linguistic and literary experience.

We have seen a variation in how preschool teachers act when:

- reading the text as it is written,
- telling the story's contents,
- using the voice in different ways to dramatise the story and
- reading in a dialogue with the child to enlarge each child's experience.

The results (Mellgren and Gustafsson 2009) highlight the variation in the ways that the children interacted with the text and the pictures in the book and how they retold the story. Four qualitative categories of variation emerged:

A. Attention—The child participates in the storytelling situation in a quiet way. The child's attention is expressed through body language, eye movements and facial expression.
B. Acting—This is characterised by the child's acting and participating in the book reading situation and in the retelling of the story.
C. Inference—This means that the child makes some kind of extension in relation to the story and/or while retelling it. The child goes beyond the here-and-now and makes personal interpretations.
D. Integration—This shows that the child is engaged and interested. The child participates in the storytelling and integrates the text and the artefacts in his or her own play.

The categories (patterns of interaction) are hierarchical and show qualitative steps in the children's acting in the book reading situation. They also indicate that the way the teacher interacts with the child and the text creates different opportunities for the children to retell and elaborate on the story. We will now describe in more detail these different ways in which the children engage in the reading situation.

Attention

This category is characterised by having the child participate in reading the book silently and quietly. The child's interest is reflected in the manner in which the child directs his or her gaze, in posture and in facial expressions. The child shows how he or she follows the events in the pictures in the book with his or her eyes. A forward-leaning stance is an expression where we interpret the child to be listening to and engaged in the book's contents. A consenting nod when the preschool teacher reads is another example of the child demonstrating active listening. The child's commitment is also reflected in facial expressions. There are children who express an emotional reaction to seeing happy faces in images or laughing out loud at a particular image or event.

There are also children who show discomfort in the situation. Our view is that they may have limited experience of books and reading.

Acting

This category is characterised by the child's conduct and participation in the form of gestures and verbal expressions while the story is read and props are being used. The child uses his hands with expressive gestures that point to an image, text or picture, sometimes all three, and the child participates by turning the pages in the book. The child expresses himself or herself verbally with words to name parts of the images and/or retell the story of the play with props.

The category can be illustrated by the following observation of a preschool teacher and a boy of 1 year and 9 months. This observation has to do with communication in the form of gestures and verbal expressions. They sat on the floor and the boy sat on the teacher's right leg and looked in the story book, with neutral facial expressions and gestures, and helped to turn the page. The teacher read in a low voice and asked the child questions: "Who is this?" and "Where is the teddy bear?" This is an example of how children respond to preschool teachers' invitation to a dialogue by pointing and scrolling pages in the storybook and verbally expressing single sounds when the book is read for the first time. When the preschool teacher read the book a second time, the child showed a greater interest in certain sections, more explicitly pointed out details and words in the book and asked the question, "What?" He accompanied the teacher's reading by turning the pages. The preschool teacher picked up the props according to the story. The boy showed an interest in the truck. The teacher took up the book and pointed at the pictures. The retelling of the story in this observation was controlled by the preschool teacher on the basis of the book and the boy explored and played with the toys. There is variation in how children turn the pages of a book depending on what their attention is directed towards: something that has captured their interest and that they want to see again, such as a special picture, or one or more of the characters in the book. It can also be that the child takes the book when the teacher has finished reading and browses through it page by page while looking at the pictures.

There are also variations in how children look in the book and point out what they are interested in, between:

- pointing with a finger at a specific object or a particular event in the book,
- pointing and saying a word or several words,
- pointing when counting and moving a finger to count how many characters are in a picture or
- pointing and asking a question at the same time and making a noise symbolising the sound of a car, for example.

There is also a variation in children's verbal expressions, between:

- words to indicate the positions,
- number words,
- words for colours,
- creating a sound according to the different objects/figures,
- repeating words and phrases throughout,
- asking questions or
- words for the props/figures and toys.

This can occur both spontaneously and at a direct appeal by the teacher. The children's utterances make up a variety of linguistic reproduction and production.

The process quality in a reading setting such as this is related to the preschool teacher's competence in communicating and language and her or his ability to respond to the child's perspective and emerging features in literacy learning (Adams 1994; Heath 1983; Langer 2005; Makin 2003; Sterner and Lundberg 2010).

Inference

This category is characterised by the child making any kind of expansion in relation to the story's events. The child uses his or her own experience and makes associations that are expressed in comments, retelling or play. The children go beyond the here-and-now and remember or imagine a thing beyond what is in the story and make a personal interpretation. Reading is a social process with shared attention. The child expressing things is sometimes related to the book's content, but it may also be that he or she will extend and associate with something outside the book so that he/she can get a better understanding of the context of reading in the process of the dialogue with the adult. In the reading situation, the preschool teacher has opportunities to make associations with the child's experience and thus expand the story and relate backwards in time ("do you remember") and to the future ("we will also eat soon") (Klein 1989; Langer 2005).

The teddy bear in the book arouses empathy in many of the children, and the child may say for example that the teddy wants to go to his mother. The children stroke the picture of the teddy bear with their hand. They think about why the teddy is sad. Even the dog's and the pig's emotions wake the child's interest. Another example is thinking about why a pig is lying down ("He was tired"). One of the children probably has personal experience of the teddy bear usually being in the child's bed at night and says, "wants to go to bed", referring to the teddy bear. When the preschool teacher read about Santa Claus, one child showed his hands when he saw Santa's hands in the picture. We interpret this as the child making a connection between his own hands and gloves.

Some children thought about why the boy in the story fell; "The boy slipped" said one child and laughed. Perhaps the child had the experience of it looking funny when a person fell. Another child said that it could be dangerous to be on the street, as it was for the boy in the book. Some of the children said something about the supper at the end of the story when all of the characters sit together at the table: "They're eating soup". Another association was with resting after eating, as they normally do at the preschool. Some of the children made emotional allusions that the teddy bear, pig, dog and boy are sad and suggest that they be given plasters. Some children associate the truck in the book with the garbage truck. There were also children who said that they had a truck at home or that they see themselves as drivers, or that their mother or father drives the car. One girl gives her own name for a girl who eats food in the storybook. One child associates the figures/props with the circle time and wants to sing a song about them, as they often do when they gather in a circle in the preschool.

The children use props in different ways when they retell the story. They also extend things when they retell the story. The children sometimes say "mother" and "father" about the girl and the boy; they show that they are aware of gender. Some children are not aware of gender, however, and say boy or girl about the girl who drives the truck. The boy and the girl look alike. Some children move the car back and forth in almost the same place; we interpret this as relating to when the car is running in the story. The children put words to things that do not appear in the book,

such as that the car is "running". When some children say that the truck is not going to "load" the preschool teacher interprets this such that the child relates that you cannot dump the truck. The children use the concepts of "box" and "house" synonymously when they talk about the shoebox that symbolises the house.

Integration

This category is characterised by the child showing enthusiastic and interested participation in the reading in a holistic way. The child uses the book as a reference in his or her play created by the story and compares the different figures of the props, the truck and the house with the pictures in the book. We will illustrate this category with an example from an observation of a girl who is 2 years and 2 months old. This observation is an example of making an inference and extending the story with her own knowledge and experience. She plays with props and relates to the story in the book. When she catches sight of the book she compares the figures with the pictures in the book: girl doll and teddy bear. It is very clear that she understands the connection between the story and the characters.

The preschool teacher sits on the floor with crossed legs and the girl sits in the teacher's lap. The teacher keeps the book in front of the child and turns the pages. The teacher begins by reading the title on the front cover and continues. When they come to the page on which both the text and the picture are about Santa Claus, the teacher extends the conversation about the contents of the story in the following dialogue by asking the girl whether Santa Claus has visited her, and the girl talks about her Christmas presents. At this time, about 2 months have passed since Christmas Eve. The girl is aware that Santa Claus has gloves and they draw shared conclusions about Santa's clothing: "it's cold outside". When they look at the next picture, in which Santa Claus is on the truck's flatbed, the teacher says that his cap is flapping in the wind and the girl concludes that it is windy.

When they read about the teddy bear that is "walking and crying" the child makes some reflections; she says that she wants the teddy to go to his mother. This information is not based on the text in the book; it is her own idea, perhaps based on what she would like for herself when she is sad. When the teacher counts the number of characters on the truck, which is also an extension, it is not part of the story. Then the girl implies that she understands something about the number and volume with a comment that "it is filled up". When they have read the book once, they read it one more time. It is obvious that the girl has memorised the story and that she knows what will come next. They have a dialogue about the characters in the book, and the teacher makes a buzzing sound at the part when the car is running.

When they read the book a second time, the teacher takes up the props that appear in the story: a truck, a shoebox depicting the house and dolls representing all the characters placed in a small cloth bag in the shoebox. The girl begins to examine the truck and is allowed to open the box, which she identifies as "the house". She picks up the bag and picks out the dolls. The girl stands on her knees, puts the dolls

on the truck and drives the truck back and forth in front of her. When all the dolls are in the back of the truck, the teacher asks the girl who is driving the truck. The girl gives her own name; that is, it is she herself who is driving the truck.

When the girl has played with the props for 9 minutes, she catches sight of the book lying next to the teacher. She looks at the dolls on the truck and, taking the girl doll in her hand, reaches for the book. The teacher offers her the book, so that the picture of the girl who is driving the truck on the book cover is clearly visible. The girl compares the image with the doll she has in her hand. She moves all the dolls to the back of the truck. When the teacher asks her once again who is driving the truck, the girl gives her own name. She also says that it is the mother who lives in the house.

The girl in this observation continually relates to the story when she expands it in her play so that it becomes a dramatisation of the contents of the story. The teacher is supportive of and responsive to the child's ideas. Her way of picking up the girl's memories of Santa Claus' visit invited the child to participate in the reading in this way.

What is the didactic quality of this setting? Is it an example of "joint attention" (Bruner 1983; Rommetveit 1974), "sustained shared thinking" (Siraj-Blatchford 2007) and "inference in text" (Langer 2005)? Children need individual experience of reading like this before they can be able to experience joint attention in a group-oriented reading setting. We know that some children in preschool do not have this experience at home. In these cases, it is the responsibility of the preschool to give the child an experience of reading.

Conclusions

In this chapter we have discussed two empirical studies of early literacy learning based on practice-oriented research (Gustafsson and Mellgren 2005; Mellgren and Gustafsson 2009). The examples are chosen to point out that, for early childhood literacy, children must be supported in making meaning and becoming involved as competent participants in the culture of literacy (Gee 2002; Säljö 2005). Attention/listening and interpretation (Mellgren et al. 2010) may start to be supported in a setting with child and preschool teacher in individual story book reading. Listening is a skill that needs to be learned (see Wallerstedt, this book), and interpretation of pictures and narratives may need to be supported individually before the child is able to make use of this skill in a group reading session. In an individual setting the teacher can observe the child's language and communicative features for a descriptive assessment such as literacy learning stories (Carr 2005; Mellgren et al. 2010) to plan for the correct individual support of the child. When children are individually prepared for group reading there are opportunities to take part and share in a cooperative discussion of a book. With the pictures and the narrative, they can make inferences and be able to listen to each other (Heath 1983; Nikolajeva 2003; Pramling et al. 1993). If the preschool teacher wants the children to share a story, he or

she must arrange support and learning with this objective in mind. Our view is that individual reading is an alternative to an instrumental recording of children's skills in language (Espenakk 2005). It is a way to assess and promote early childhood literacy (Adams 1994; Makin 2003; Langer 2005), requiring amongst other things, the child experiencing "time on the task" and developing conversations on the reading. Researchers in early literacy learning have pointed out these as being factors for successful literacy development. Every child has a right to such literalness.

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Chapter 11
Mind Your Step: Representation and the Trajectory of a Circle-Dance Project with 6–8-Year-Old Children

Niklas Pramling and Cecilia Wallerstedt

Introduction

In most, if not all, early childhood settings the arts or the aesthetics constitute frequent and popular parts of the day. Children and teachers sing songs, dance, make drawings, etc. These domains of knowing make up much of the activities children are involved in; and they often get absorbed in these kinds of activities. At the same time, research into early childhood arts education suggests that the arts often fill supporting functions in the development of other kinds of knowing and skills (Pramling Samuelsson et al. 2009). That is, the arts are often used as means of developing such skills as 'being able to cooperate', 'mathematical skills' (e.g. through making rhythmic patterns with one's body), 'language development', etc. While all these, and others, are important skills to help children develop, some critical reflection may be required. If the teachers 'merely' use them as means of facilitating other forms of knowing, they are not giving children real assistance to develop artistic or aesthetic skills. This distinction between what may be referred to as 'domain-extrinsic' and 'domain-intrinsic' knowing is easily exemplified by the art of dance. Is dancing pursued as part of physical education in order to promote health (e.g. combat obesity) in children or is the goal of this activity to support children developing a knowledge of and skill in dancing? What is the purpose of the activity? While the one (e.g. promoting health) does not exclude the other (developing dancing skills), the enacted purpose of the activity will help (or fail to help) children to develop certain skills and knowing. The present chapter builds upon this rationale, as part of a larger research project into the development of children's knowing in the arts (music, dance and poetry) in early childhood education (for a presentation see Pramling Samuelsson et al. 2009). In the present study, the trajectory of dance education in a mixed-age group (of children 6–8 years old) will be followed over a prolonged

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period to study how this activity develops, what challenges and opportunities it provides for children and what becomes of the aesthetics during this activity.

The project began with the teachers wanting to try to develop the children's awareness of their own and each other's movements and movement patterns (Laban 1963). They planned the dance activity taking these objects of learning (i.e. what they want to develop in the children) as their starting-point. For this purpose, they decided to use a traditional Swedish circle dance for an entire term. In order to try to find out what the children experienced from this activity, support them and find out how they developed their awareness of movements, every dance practice was followed up by talking about the dance in smaller groups. As will become evident below, this proved difficult. The teachers had a hard time trying to get the children to speak about the dance. Instead the teachers decided to let the children draw how they had danced and to speak about the dance using their drawings as a basis. The drawings thus introduced a form of invented dance notation into the activity. These representations would prove useful in allowing the teachers (and the researchers) to gain insight into the children's perspectives on the dance activity, which will be analysed in this study.

The chapter is structured in the following way. First we will elaborate on the issues of representations, knowing and the potential roles of notations in dance education. Second, we will present the particular dance used in the practice analysed in this study. Third, we will present the theoretical framework of developmental pedagogy, emphasising four of its defining features. The introductory part of the chapter ends with a few words on the issues of language in learning in, and research on, the arts. This is followed by the empirical study. Finally, in the discussion, the findings will be recapitulated and elaborated with particular emphasis on the didactic challenges and possibilities of this way of working with dance in education.

Representational Practices and Knowing

Representing or notating something as fleeting, expressive and dynamic as dance may appear counter-intuitive. Are not aesthetic activities such as dancing, or music, the antithesis of static signs on paper? Dancing, like singing or playing music, is an expressive art form. Notations of any kind cannot replace these activities. However, there is a substantial literature on the notation of dance and dance notations used by professional dancers, choreographers, etc., which is reviewed below. Like all representations, including those of speech sounds in the letters of the alphabet, notating music in a score, representing geography on a map, or a building in a blueprint (Kress 1997; Olson 1994; Pramling 2009; Teubal et al. 2007), dance notations are partial. This means that they represent some aspects of a dance and not others. No representation is complete. This also means that the notation cannot simply be 'read off' (Säljö 2005) in a straightforward manner. In fact, the 'space between' the documented version of the dance and the performed dance is where artistic and aesthetic skills can be observed. To learners trying to represent a dance

they learn, as the children do in the present study, this also means that they have to decide what to include and exclude when notating the dance. Hence, we can see what they have attended to and consider important to depict and what may be of more marginal interest to them. In addition to the use and importance of notations in professional dance practices, we will argue that, to those with an interest in the didactics of dance, notations become important mediational means (Kozulin 1998; Wertsch 2007) of appropriating dancing skills. While notations of dance in professional dance practices fill roles such as instructing dancers in an ensemble how to dance, coordinate themselves, etc., in the present study it is the learners', that is, the children's own representations of the dance that they are trying to learn that will be analysed. In this way, we—as researchers as well as teachers—can gain access to the children's perspectives on the dance in addition to recording how they dance and speak about the dance. How does the dance appear to the practising children? And what is the purpose of the activity as far as the children are concerned?

The Sociogenesis and Functions of Notating Dance

Attempts have been made to notate dance ever since the time of the ancient Greeks (for a history of dance notation, see Barbacci 2002). However, according to Barbacci, the notation system called 'Kinetography Laban' or 'Labanotation' provided something of a breakthrough. This system, developed and presented by Rudolf Laban in 1928, is based on a number of fundamental parameters: direction, level, time and type of movement. This system is thus, in contrast to previous attempts, not particular to a certain dance or technique (Barbacci 2002). This latter point holds important implications for the didactic interest of the present chapter. Every attempt to notate something, for example dance, needs to consider what the functional level of description is. If one is too specific in making a notation, every individual dance will need its own notation. At the same time, if one is too abstract, the notation will not be useful for instructing someone how to dance a certain dance. Hence, the present study will focus on what level of description the children choose to depict what they consider the point of the representation (the particular dance, the particular occasion of dancing or other).

Dance notations, Waters and Gibbons (2004) write, can serve a number of important functions such as composing and sharing new dances, allowing dancers to take home instructions to practise, to inform various participants (dancers, stage designers, director and others) and to transmit dances across time and space. Notations in dance can therefore be important tools for teaching, analysing, coordinating and memorising dances. These observations suggest that notations could be important mediational means in learning practices. Much like the case of music (see Chap. 6), dance is hard to pin down in order to grasp how it is done. Dance, as Bannon and Sanderson (2000, p. 15) write, is a form of knowing and an art form that "by its very nature, 'disappears' or is at least in a continual state of flux". Consequently, representing (notating) dance in some kind of 'frozen state' is an inherent didactic

challenge to education. Still, as Warburton (2000, p. 194) points out: "Arguments about notation in the arts and dance in particular, are highly controversial."

Dance in Education and the Role of Notations

As already mentioned, fixating or freezing the transient nature of dancing on paper may appear inherently contradictory to this art form. Further, there is a widely spread notion among teachers that not only dance but other forms of art or aesthetic subjects such as music should be done or practised rather than understood and intellectualised. Arguing against such "often-heard instructions to 'just move, don't think' or, 'feel, don't think'", Bannon and Sanderson (2000, p. 11) emphasise the importance of what they refer to as an 'aesthetically significant dance education' of developing 'aesthetic awareness'. They further reason:

> It could be argued that using methods of analysis [e.g. notations, speech] as an aid to the appreciation of dance is destructive to the sense of "wholeness" of a work. On the other hand, and this is the view adopted in this paper, analysis as part of an inquiry into a work is likely to enhance the potential for aesthetic experience of a whole work. Structured approaches to appreciation may provide an increased sensitivity to the quality of a work. (Bannon and Sanderson 2000, p. 19)

In a similar vein, in a text revolving around the issue of trying to "explicate what dance as an art form should minimally comprise if it is to be taught as a distinctive aspect of education in the school curriculum", Arnold reasons that:

> It can be said that an aesthetic situation develops whenever an *aesthetic attitude* is adopted, or evoked by an object and is entered into for no other reason than the satisfaction it affords. It differs from that of the *practical attitude* where things tend to be seen in instrumental terms. (Arnold 2005, p. 50, italics in original)

Hence, according to this view, aesthetics requires that attention should be directed to the 'object' as such as having an intrinsic import, rather than simply seeing it as a means of developing other skills or knowledge. This is consistent with the distinction we make between 'domain-intrinsic' and 'domain-extrinsic' knowing. The former may be exemplified by practising dancing in order to become skilled at dancing. The latter may, in contrast, be exemplified in an educational arrangement where dancing is used as a means of promoting health issues in children. Developing his ideas on the aesthetic in education, Arnold (2005, p. 48) further argues: "What characterizes an aesthetic experience is that our whole interest and attention is given to the object in question. We are absorbed by the 'here and now' without regard to practical concerns or future consequences" (p. 50). However, while sharing Arnold's reasoning concerning the importance of making the aesthetics the goal of activities rather than merely the means of achieving other goals, his last claim, in our view, is problematic with regard to aesthetic *education*. While 'being absorbed' in the 'here and now' is a quality of aesthetic experience, an education needs to be 'forward-oriented'. Hence, an attempt must be to consider what the learner should

take with him or her from the situation. In an educational setting, important questions are 'What does the learner make of the activity?' and 'How does this relate to what the teacher intended to help and provide for the learners to understand, know, be able to do?'

The effects of the use of notation in dance education with 8–9-year-old children were studied by Warburton (2000). The use of Labanotation was found to facilitate children's recognition of different movement types and to classify these as well as performing movements. In addition, Warburton's study "shows that verbal language is a necessary and valuable tool in dance instruction" (p. 210). Thus, there is a good reason to consider representation (in speech and other forms such as graphic notations on paper) in dance education. However, it is important to remember that the kinds of representations of dance studied in the present chapter differ in important ways from notation systems such as Labanotation. The representations used in this empirical study are not conventional but invented by the children themselves in an attempt to capture and remember the dance they are learning. This points to the issue of what the children themselves consider in their representations. Phrased differently, from an empirical point of view, it is the learners' perspectives (and how they harmonise or clash with the teacher's perspective) on the dance that are of interest in the present study.

The Dance: "Lasse Walks in the Ring"

The dance the children practise is a 'circle dance' (Swedish: 'ringdans') called "Lasse går i ringen" (Fig. 11.1). To an English speaker, the name 'Lasse' may sound like 'Lassie'. However, 'Lasse' is a male name. We do not know whether this dance and its accompanying song are unique to Sweden or whether it also exists in other countries and languages. In order for the reader to decide this issue in relation to his or her country or at least get a more detailed picture of the dance, we will briefly present the dance, its lyrics and score below.

There exist two different melodic versions of this song, which have both been tried by the teachers and the children. However, the older version was soon dropped and the new version (transcribed here) was used throughout the project. In excerpt 1, below, this version is referred to as 'the new one'.

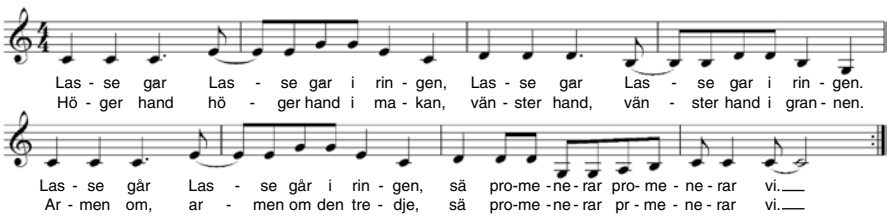

Fig. 11.1 The song accompanying the dance "Lasse Walks in the Ring"

The following is a description of the singing and dancing. The children walk in a ring in pairs and sing:

> Lasse går, Lasse går i ringen, Lasse går, Lasse går i ringen, Lasse går, Lasse går i ringen och så promenerar, promenerar vi.
> Lasse walks, Lasse walks in the ring, Lasse walks, Lasse walks in the ring, Lasse walks, Lasse walks in the ring, and then we walk around, we walk around.

The pairs then face each other and do as the song says:

> Höger hand, höger hand i makan
> Vänster hand, vänster hand i grannen
> Armen om, armen om den tredje och
> Så promenerar, promenerar vi.
> Your right hand, right hand in your partner's
> Your left hand, left hand in your neighbour's
> Arm around, arm around the third one and
> then we walk around, we walk around.

When the dancers change partners through moving first one step (left hand in your neighbour's) and then another step (arm around the third one), Lasse tries to steal someone to dance with.

Developmental Pedagogy

The theoretical framework for the present study is developmental pedagogy (Pramling Samuelsson and Asplund Carlsson 2007, 2008). This theory for understanding—and promoting—children's understanding is founded on an interest in how phenomena appear to others, more specifically children. In this section we will present some key concepts of this theory that will be used in the analysis of the circle-dance project. The features of developmental pedagogy presented and foregrounded in this chapter (cf. Chap. 3) are: (a) the distinction between the concepts of the learner's perspective and the teacher's (or analyst's) perspective, (b) the importance of meta-level talk, (c) the use of the variety of understanding in a group of children as a didactic principle in developing children's understanding and (d) the teacher's decisive roles in children's learning. The basis for the development of this theory is a series of empirical studies of children's learning in preschool. These studies have investigated young children's learning in the domains of mathematics, nature, culture (i.e. the man-made world) and learning as such. For meta-analyses of this body of research, see Pramling (1996) and Pramling Samuelsson and Asplund Carlsson (2007, 2008). Hence, developmental pedagogy is a theory developed on the basis of empirical research conducted in naturalistic settings, in the form of the children's daily lives in their preschools. This has resulted in ecologically valid claims about how to facilitate children's learning. It has also meant that it has been possible to benefit from the outcome of research conducted within this framework in that the teachers are able to put the various findings into practice in preschools. It is a form of research that is highly relevant to pedagogical practice.

In the first study leading up to this theory, Pramling (1983) studied the development of young children's conception of learning, that is, what it means to learn according to the children themselves. Some important conclusions from this and subsequent studies (e.g. Pramling 1990, 1994) were the importance of studying learning from the learner's perspective and the issue of meta-level talk. Attending to the learner's perspective (Sommer et al. 2010) can be traced back to the pioneering insights of developmental researcher Jean Piaget. Being critical of the work of intelligence testing of children conducted by Alfred Binet, for whom he worked, Piaget argued that simply studying the number of children able to solve a certain problem at various ages does not tell us much of importance about children's development. Instead, he argued, we need to study why children answer test questions in the way they do, that is, what the child understands is being asked of him/her. This important insight has been fundamental to developmental research since then even if the perspective attributed to Binet is still all too prevalent. In educational research, analysing educational encounters from the child's/learner's perspective as well as from the teacher's/researcher's perspective (Marton and Booth 1997; Wallerstedt et al. 2011) and how these 'come into play' in a concrete manner, plays a pivotal role.

Another important finding of the studies leading to the formation of developmental pedagogy is the issue of meta-level talk (meta-cognition, meta-communication). In order to get children to discover or discern—which is a commonly used metaphor for learning in this perspective (cf. Gibson and Gibson 1955)—certain aspects or features of a domain of knowing or a phenomenon, it was found that simply conducting activities is not sufficient. In order to direct children's attention towards certain aspects or features, teachers need to engage children in talk about what they are doing/have done. For example, if the teacher wants to develop children's understanding of what it means to learn something, it is not sufficient to conduct activities in which children learn various things. Getting the children to talk about a theme or activity they have taken part in has a decisive effect on what they actually learn and for their understanding of what it means to learn. And here language is a tremendously powerful tool (Vygotsky 1978) in directing someone's attention, awareness. In fact, according to developmental researcher Tomasello (1999), directing others' awareness is the key function of the human tool of language.

The children in a group will understand things in various ways. This variation has been used successfully as a didactic principle in studies of developmental pedagogy. Encouraging the children to share their thoughts with their peers has been found to result in a richer repertoire of ways of understanding something (Pramling 1990, 1994). Even the very idea that things can be understood in more than one way and that not everybody understands things in the same way as you do is an insight the importance of which should not be underestimated. Hence, differences in understanding become assets in developing the children's knowledge.

Finally, as evident in the above reasoning, even while the focus is on children's perspectives, the teacher plays an important and decisive role in children's learning, as confirmed in several important studies. One important task is to direct children's attention, awareness, as already mentioned. Teachers do this through introducing verbal tools (categories/concepts and distinctions) important in a domain of know-

ing (see also Chap. 1, where this is pointed out as the key to what can be referred to as a 'didactic') in giving suggestions, scaffolding or asking questions. Another important task is to provide children with patterns of variation and invariance in order to help them discern particular and general features of a domain of knowing. This feature of developmental pedagogy—shared with its sister theory, variation theory—is not emphasised in the present chapter, but cf. Wallerstedt (Chap. 6) and Doverborg and Pramling Samuelsson (Chap. 3).

While developmental pedagogy emphasises the importance of the role of teachers in children's learning, this is hardly a non-controversial claim, not least when it comes to developing children's skills in the domains of the arts, aesthetics. Generally, in relation to children's development, but particularly in these domains, there are often strongly voiced concerns that it is important to let children develop freely and to express themselves freely without interference from teachers (see e.g. Saar 2005 for a critical discussion). However, in order to be able to express oneself freely, for example, in a painting or in a dance, the child (as would adults) needs to have discerned certain features of colours and shapes in visual art-making and patterns and qualities of movement in dancing to be able to express him- or herself in this form (cf. Chap. 5). Simply stepping aside as a teacher and letting children express themselves and develop freely means that children are not provided with good opportunities to develop their skills and knowledge in these and other domains. Some domains of knowing may not even be discovered by children without the guidance of teachers and other adults. In a sense, this is the basic rationale for having institutional learning and care practices such as preschools and schools in a society, which ensures that all children are given opportunities to discover and develop skills and knowledge that they would not have had otherwise. This further emphasises what we in this book refer to as 'didactics' in developmental activities for children in preschool and school.

Languages of Art, Learning and Research

While teachers are considered important to children's learning, for example, through the language they introduce children to and help them appropriate (as outlined in the theory section above), language as such is often seen as problematic in relation to art and aesthetic activities, as already mentioned. However, from our perspective, language is pivotal to the present case in several ways. A distinction can be made between language in learning and language in research. The former refers to how one perceives the nature of a certain kind of knowing, what it means to be skilful in, for example, a domain of art. The latter refers to the fact that, regardless of the function and status of language used in the learning of a particular skill, in order to study this learning and knowing, in research, we have to constitute it in language. Hence, even studies of so-called non-verbal knowing need to be rendered in language in order for us to research it. However, a further distinction can be made concerning language in learning, between the nature of the knowing, on the one hand, and how one goes about learning (and as a teacher, providing opportunities for learning) this

knowing, on the other. Consider the following example. Being able to do symmetrical and asymmetrical movements/assume postures in response to someone else's movements/postures does as such not presume the use of language. However, in order to make children aware of symmetrical and asymmetrical movements/postures, a teacher cannot simply show a movement or posture and hope that the child will discover and carry out symmetries and asymmetries to this template. In order to get children to attend to these responding movements and postures, language is an invaluable help. However, simply instructing children, that is, verbalising what one does, does not mean that they automatically discern what the teacher intends them to. In fact, what children consider 'opposite to' or 'the same as' a certain movement or posture is in itself an interesting object of study, as we discovered when observing teachers trying to promote children's dancing and aesthetic movement skills in preschools (Pramling Samuelsson et al. 2008).

The Empirical Study

The interest of the present study concerns children's learning in dance. The process of learning is followed from the teachers' intention to the children's 'uptake', that is, resulting understanding. The approach taken in this chapter could be seen in terms of what Mercer (2008) in conceptualising 'educational process' refers to as the 'dialogic trajectory' of classroom communication. To explain this notion, he writes:

> The kind of trajectory with which I am concerned here is not of individual social actors moving across settings (such as home and school), but of speakers moving together through a series of related interactions within the same institution (school). (Mercer 2008, p. 39)

One attempt to consider classroom interaction and communication in this way is to "appreciate how children gain an education from their classroom experience" (Mercer 2008, p. 33; cf. Chap. 1). The fact that learning often takes time is often 'forgotten' in research. Many studies of learning are of the 'one-off' kind. However, it is of considerable interest to follow life in classrooms over an extensive period (e.g. a theme) to gain a view of what teachers and children are regularly engaged in everyday.

From the premise of this book (as outlined in Chap. 1) that 'didactics' at heart refers to the nature of encounters between, for example, a teacher and a child, that is, how interlocutors engage, interact, co-ordinate and introduce and use tools, in this chapter we will study challenges to and responses by children as well as teachers. With an overarching interest in the nature of this educational encounter between teachers and children in and around dance, that is the challenges faced by and the responses to these by the children and teachers, we will analyse the empirical data on the basis of the following three questions:

1. How do the children and the teachers, respectively, understand the function of the representations of the dance (i.e. what is the learners' and the teachers' understanding of the representation)?

2. What do the children represent in their drawings (and speech), that is, what are their drawings representations of?
3. In what sense may this dance project be considered 'aesthetic'?

These three questions will not be analysed separately, but as parts of the evolving set of activities. However, we will return to and answer each question in the discussion.

Setting and Participants

Thirty-two children aged 6–8 years and their three teachers participate in the study. The work team consists of Ann-Marie (preschool teacher), Maria (teacher for younger children in school) and Lena (leisure time teacher). The teachers are not educated dance teachers and, in fact, there is no subject called 'dance' in the national curriculum. 'Dance' is mentioned there as a goal in physical education. However, dance is a part of our cultural heritage (particularly this kind of 'folk dance') and the teachers work with it in 'art class'. In the institution we studied, when the teachers work with the children on the arts (dance, music, etc.) they form three age-integrated groups. The school is located in a rural region of Sweden. The school is a state school without any particular arts profile.

The teachers decided that they should have the chosen dance as a theme spanning over an entire term. The intention of the teachers, according to their own documentation, was influenced by the work of dance educationist Rudolf Laban. From Laban's book *Modern Educational Dance* (1963), the teachers picked up the fundamental idea of developing awareness of various movements in children, enabling them to do group movements (e.g. circles, lines). They then decided to focus on trying to develop in the children "awareness of their own and each other's movements" and to learn the circle dance "Lasse walks in the ring".

The teachers and the children practised this dance, trying to learn it. This was documented by the teachers themselves as well as occasionally by a researcher during a whole term. Prevailing ethical guidelines of the Swedish Research Council were followed. This means that the children's caregivers have given their informed consent to let the children participate in the study. The teachers have also given their consent. The data consists of the teachers' own log book, video and audio recordings, interviews and children's drawings.

Results

The dance is practised in the gymnastics hall. The teachers marked out a circle on the floor with tape. The dance they practise, "Lasse walks in the ring", is a pair dance. It is usually danced by male–female pairs moving anticlockwise in a circle.

However, here the teachers paired up the children by giving half of them yellow ribbons and the other half none. One of the teachers leads the activity, by singing the words that go with the dance. The other two teachers participate as dancers. Certain parts of the dance are practised without singing and at a slower tempo. Every time they practise the dance (once a week), all 32 children first dance together for approximately 20 minutes. Then the children gather in three groups with one teacher and talk about the dance they are learning. Here the principle of meta-level talk from developmental pedagogy was followed, something the teachers had met in their in-service education in the aesthetics project they participated in. These talks have been transcribed and all the excerpts analysed below are derived from these data.

In anticipating the results of the analysis, we will be able to see how the teachers gradually develop their skill at asking the children productive questions. We will also see how the introduction and use of graphic representations (invented notations) scaffold the children's discernment, that is, how it supports their developing notion of the dance. However, the nature and functions of these representations are understood in partly different ways by the children and the teachers. Consequently, the children's and the teachers' perspectives and how they relate will be of central importance to the analysis.

Speaking of Dance

The following conversation between the teacher and eight children takes place at the beginning of the dance practice.

Excerpt 1

1.	Teacher:	So we have practised Lasse walks in the ring once, and now we have this new song version which is a bit more lively. How did you think the dance worked with the new song?
2.	Child:	Well, it was fun.
3.	Teacher:	Ok…
4.	Child:	It was fun.
5.	Child:	It was a bit difficult because it was another song so it was quite fun.
6.	Child:	It was only a bit difficult.
7.	Child:	It was fun.
19.	Child:	I thought it was something in between.
20.	Teacher:	Ok, you stick to what you thought about the dance today with the new song. If we go back to the question I asked just now. What did the ones with the yellow bands do when we didn't sing? What did they practise? Was there anyone with a yellow band? What did you practise when we didn't sing?
21.	Child:	Walking slalom (weaving in and out).

22. Teacher: E touched on that a bit before when he said walking around and you say walking slalom. What did the ones without bands do then, when we didn't sing along?
23. Child: Standing still.
24. Teacher: They practised standing still yes.
34. Teacher: Ok, when we had trained this one, girls and boys, what did you think of the dance after that, when we sang and danced again?
35. Children: [Silence]
36. Teacher: First we practised the song and the dance together all of us, didn't we, and then we practised weaving in and out without singing along, but what did you think of the dance after that? When we danced again, with the song?
37. Children: [Silence]
38. Teacher: Was it, how was it then?
39. Children: [Silence]
40. Teacher: Is there anyone who's thinking about that. When we walked with the song again?
41. Children: [Silence]
42. Teacher: Well?
43. Child: It was more fun.
44. Teacher: It was more fun, mm…What do you say, J?
45. Children: [Silence]
46. Teacher: What is more fun to practise with the song or without the song?
47. Children: [Silence]….Without.

This talk lasts for 12 minutes (82 turns). In the discussion among the teachers afterwards, they concluded that "this practice, whose purpose was to make them [i.e. the children] more aware of each other's movements did not work as we had planned". As seen throughout this extensive excerpt, the teacher struggles with getting the children to give their experience of the activity. Many questions are met with silence from the children. When they did reply, they tend to be preoccupied with whether it was fun or not, since this is what the teacher asks them about. The only times the nature of the dance is spoken about are in turns 21 and 23. Eventually, the teacher herself, in order to get some kind of response and share some focus with the children, starts asking about the dance in terms of 'more fun', etc. Hence, considered in relation to the intention expressed by the teachers, throughout this initial event, the teacher to large extent asks unproductive questions, unproductive in the sense of not being able to engage the children in a mutual sense-making practice and access their understanding. This means that a challenge to the teachers is to find other kinds of questions that will get the children involved in talking about the dance and how they experience it.

After having worked on the dance several times and discussed the outcomes of these lessons, the teachers decide to add a new task to the proceedings. The teachers decide to give the children the task of making drawings of how the dance is made, that is, to introduce notation into the dance project. On the following occasions, the teachers plan that the children will tell about their drawings and what they depict.

The questions the teachers plan to ask the children are: “Tell us how you drew/painted—explain”, “Do you want to add anything [to your drawing]?” and “Do you want to change anything [in your drawing]?” In the next section, we will analyse these conversations with the children about their drawings and talk about the dance.

Dancing on Paper: Children Inventing Dance Notations

In this lesson, 30 of the total 32 children of the class are present. First they do the dance, letting different children take the part of ‘Lasse’. According to the teachers afterwards, “it worked really well”. The teachers were interested in finding out “would they remember how they thought only with the aid of the drawings they had made the week before” and speech, we may add. In our analysis, we will elucidate a number of ways of understanding what it means to represent the dance (make a dance notation) with the help of the children’s drawings and the ensuing talk between the children and the teachers about these drawings.

Figuring Out What to Represent

Silan speaks about her drawing (Fig. 11.2) and explains the different turns with the right hand first, then the left hand and then putting your arm round the third

Fig. 11.2 Silan’s first drawing of the dance

person. At first it appears that there is consensus between Silan's drawing of the dance and how the teacher and the other children say that the dance is made (the first four squares of her drawing). The teacher then asks her about the second line of squares (frames) in her drawing. Even the researcher filming the lesson cuts into the talk.

Excerpt 2

35	Teacher:	So you've made a turn there (pointing to the first row)? Does the dance start again here in the next square (pointing to the next row)? Is that how you thought?
36	Silan:	Yes.
37	Cecilia:	But do the girls dance together and the boys together?
38	Silan:	No. The girls dance with the girls and the boys with the boys.
39	Teacher:	Anything else children? No. You don't need to do that really.
40	Silan:	No, but I drew it like that.
41	Teacher:	But what do you mean then, the girls dance with the girls and the boys with the boys?
42	Silan:	Yes, it's like this, first it's the girls' turn, then they do Lasse walks in the ring. And then it's the boys' turn and then they do Lasses walks in the ring. [smiles in a knowing way, holding her drawing in front of her mouth]
43	Teacher:	Do we usually do that?
44	Silan:	No.
45	Teacher:	No-o, what were you thinking then?
46	Silan:	I don't know [looking at her drawing].
47	Teacher:	Did it just turn out like that when you did your drawing?
48	Silan:	Yes.
49	Teacher:	Yes, ok, is there anything more you want to tell us?
50	Silan:	No. There's nothing more.

When the children have something concrete (manifest, the dance fixated on paper), they have no difficulty in speaking about the dance as such. Here their speech is markedly different from the first time when they were mostly silent or spoke about whether they thought it was fun or not. Hence, a first conclusion that could be made is that the notational practice does not distract children's attention from the dance, but rather helps them attend to it. At the same time, a discrepancy is visible between what the teachers intended and how the children take on the task of representing. For example, in turns 39–48, one of the children (Silan) and the teacher talk about how to understand the drawing. In a sense, as clarified by her speech, the child has drawn a *possible* way (as if)—perhaps even how she wishes the dance to be performed—while the teacher's questions raise the issue of whether the drawing is an adequate representation of how they *actually* did the dance (as is). These different ways of relating to the drawing imply that the child and the teacher have partly different agendas: to draw how one wants it (and later, draw nicely [fin], etc.)

or to document how they did. In terms of activities, this difference may be said to depend on whether the task is conceived as a drawing task (visual arts activity) or some other kind of activity (cf. Chap. 5). As made evident in the conversation between the child and the teacher (the discrepancy between the learner's and the teacher's perspective), a hybrid form of activity appears. This fact puts the finger on the important didactic challenge of coordinating the teacher's perspective with the children's perspectives. If such coordination is not achieved, teacher and child will be involved in two different kinds of activities.

Representing the Dance: Direction

Excerpt 3

81	Teacher:	Then we'll see who comes next. […---] Then you can tell us how you did your drawing here, Ludvig.
82	Ludvig:	(looks at the drawing and makes a circular movement) They walk in a ring.
83	Teacher:	Mm. How do they walk around? Can you see that?
84	Ludvig:	Mm.
85	Teacher:	How can you see that then?
86	Ludvig:	[makes a clockwise movement]
87	Teacher:	Do we walk in that direction?
88	Ludvig:	[nods]
89	Teacher:	How can you see that then? (no answer) In your drawing?
90	Ludvig:	There's one of those things (points to something on the right).
91	Teacher:	What's that?
92	Ludvig:	An arrow.
93	Teacher:	Yes, and where is that arrow pointing?
94	Ludvig:	No, it is an arrow (smiles in some embarrassment).
95	Teacher:	Do you see Astrid?
96	Ludvig:	There [pointing anticlockwise]. I did it a bit wrong.
97	Teacher:	Did you?
98	Ludvig:	Mm.
99	Teacher:	How do we dance when we do the dance?
100	Ludvig:	There [pointing clockwise].
101	Teacher:	Do we?
102	Ludvig:	No there [changes direction and points anticlockwise].
103	Teachern:	Mm, so you did it quite right with the arrow. Can you tell us anything more about your drawing?
104	Ludvig:	No.

The teacher starts by encouraging Ludvig to tell her about his drawing (Fig. 11.3). Ludvig starts by pointing out the circularity of the dance (turn 82). The teacher follows up by asking, `How do they walk around? Can you see that?` Ludvig confirms (turn 84) but does not at this point elaborate on the issue. The teacher then asks him, `How can you see that then?` This kind of meta-level talk, that is,

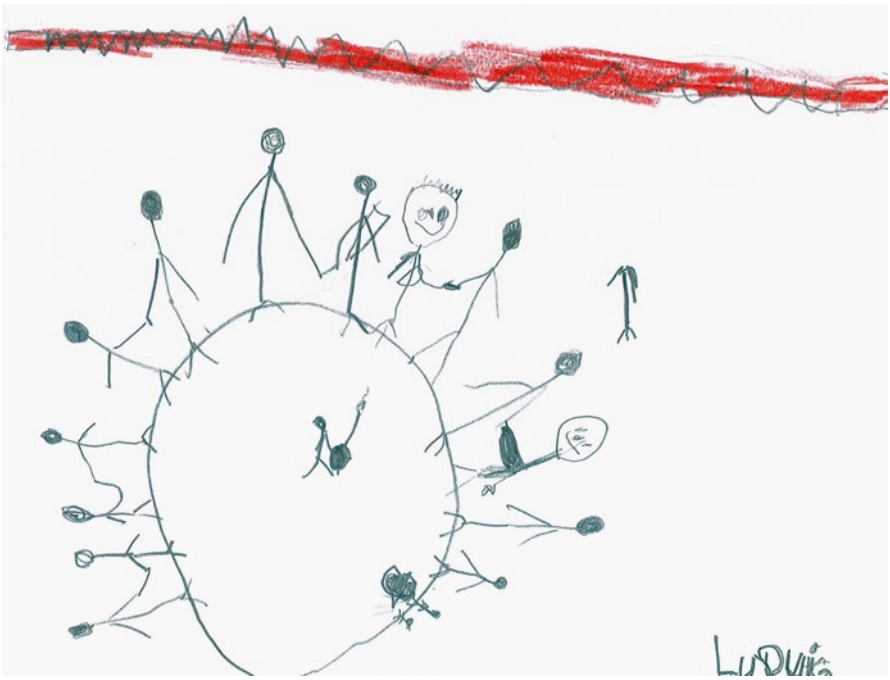

Fig. 11.3 Ludvig's first drawing of the dance

speaking about how one represents and can 'read' representations is well-documented to facilitate children's development (Pramling 1996). In response to this communicative challenge, Ludvig uses a deictic reference (Davidson 2005) in pointing at the drawing (turn 86). The teacher follows up by asking, `Do we walk in that direction?` Hence, she verbalises a dimension of Ludvig's pointing, that is, the direction of the circling movement as significant in learning the dance. However, she is not content with him simply nodding in response (turn 88), since she once again asks him, `How can you see that then?` Adding `On your drawing?`

In his subsequent response, Ludvig again uses deictic references, `There's one of those things (pointing).` The teacher asks him `What's that?` Deictic words such as `that` are inherently ambiguous. In order to coordinate speakers, to make sure they speak about the same thing, terms like these need to be clarified, verbalised. Ludvig explains that `that` refers to `an arrow` (turn 92), a conventional symbol for depicting direction and/or movement in graphic representations. In the subsequent conversation between the teacher and the child, the direction of the arrow is discussed. Ludvig's utterance in turn 96, that `I did it a bit wrong,` may suggest that he has noticed the nature of the previous talk (see excerpt 2). He himself thematises the issue of whether the arrow points in the right direction or not, that is, to the extent the drawing is an 'adequate' representation of the activity (dance). In conversing with the teacher, however, it is concluded that he has indicated the right direction in relation to how they danced.

Representing the Dance: Dancing in Pairs

Traditionally, this kind of dance is danced in pairs, boy and girl. However, while learning this dance, the teachers have chosen to divide the children into two groups, those with yellow ribbons and those without, as we have already mentioned. Later in their drawings and talking about these, several of the children raise the issue of dancing in pairs. In the perspectives of the children, this girl–boy pairing appears to be central to the dance as they understand it.

Two by Two

Excerpt 4

193 Teacher: Your figures you have made there, Kevin, that ones you have drawn, did you think of showing how we do the dance itself in some way?
194 Kevin: No.
195 Teacher: Or have you only thought of showing the ones who are dancing higgledy piggledy?
196 Kevin: No, they are dancing that way [points to a position in the ring, the drawing covers the hand, but it seems to be anticlockwise].
197 Teacher: Yes, you have shown that well.
198 Kevin: They are holding hands, they are [studying the drawing].
199 Teacher: They are holding hands.
200 Simone: And they are walking in a ring, aren't they?
201 Kevin: [shows his drawing to Samuel and giggles].
202 Teacher: Can you hold up your drawing so we can see.
203 Kevin: [Holds up the drawing.]
204 Teacher: How many of them are holding hands then?
205 Kevin: [begins counting on the drawing].
206 Teacher: When you hold hands, does everyone holds hands together or?
207 Kevin: [Holding up two fingers] No, they only hold (hands) two by two.
208 Teacher: Can you see that d'you think?
209 Kevin: Yes, I think so.
210 Teacher: Can you see that they are holding(hands) two by two.
211 Kevin: [points to the drawing and holds it towards the teacher.]
212 Teacher: Kevin?
213 Kevin: It got a bit messy here.
214 Teacher: Yes, but can you see that they are holding (hands two by two?
215 Kevin: Yes, they are holding hands.

In Kevin's description of his drawing several aspects of the dance appear. These features are the direction of the dance (turn 196), that dancing is made in pairs (turns 198) through holding hands with each other, two by two (turn 207), and that

dancing is made in a circle (turn 200). The issue of whether the drawing should be understood as decorative (beautiful) and/or communicating meaning comes up for brief negotiation between the teacher and the child (turns 213–215; cf. Kress 1997). Hence, at the end of this excerpt, aesthetics as a value judgment is introduced by the child. This perspective is irrelevant if the drawing is seen in terms of a (more or less 'adequate') representation of the dance (i.e. in terms of its instructional value) but not if seen from the child's perspective, as (also) a visual art task. In terms of the challenge of the teachers to their learning, turns 204–206 are very informative. When asking Kevin, `How many of them are holding hands then?`, the child's attention is, contrary to the teacher's intention, drawn towards a mathematical issue shown by his starting to count. However, as seen in the teacher's follow-up question, before Kevin has replied, she tries to see whether he has noticed the dancing-in-pairs feature of the dance. As is clear in his drawing and his speech, he discerns this fact.

Girl and Girl, Boy and Boy, Girl and Boy

Ludvig is clearly concerned with the issue of gender, in the case of the pairing of the dance partners. This, however, as we have already mentioned, was not thematised by the teachers during dance practice.

Excerpt 5

105	Teacher:	What kind of figures have you drawn there?
106	Ludvig:	boy, girl, boy, girl [pointing to the people in the circle, one by one] that's how it goes [moving his finger rapidly round the circle].
107	Teacher:	You have thought boy, girl, boy, girl.
108	Ludvig:	Mm. Can you hold up the picture a bit so everyone can see.
109	Teacher:	These figures you have drawn, do they stand by themselves or?
110	Ludvig:	No.
111	Teachern:	How have you drawn them then?
112	Ludvig:	They are hold (hands) there [pointing to somewhere in the drawing].
113	Teachern:	They are holding each other.
114	Ludvig:	Mm.

In a sense, Ludvig draws what he *knows* (how it usually is in the dance) or how he *wants* it to be, as distinct from what he saw or what they actually did there and then.

The Ones with Yellow Ribbons

Several children pay attention to the yellow ribbons, as we have already mentioned. Julia has drawn people dancing as boys and girls but also with or without yellow ribbons.

Excerpt 6

67 Julia:	They walk around in the circle like this (pointing clockwise). Here stands (pointing from right to left) girl, girl, boy, girl and then girls, boy. And then the yellow ones here (pointing to every other person in the drawing). They are the ones with the bands.
68 Teacher:	What did you say now, the yellow ones there are…?
69 Julia:	The bands.
70 Teachern:	The ones with yellow bands.
71 Julia:	Mm.
72 One child [probably Silan]:	I forgot to do yellow bands.

The last utterance indicates that the children learn from each other when looking at and talking about their drawings. We will return to this issue.

Me and My Best Friend

In the following excerpt, when Astrid speaks about her drawing (Fig. 11.4), the yellow ribbons also come up. However, an additional point in having these ribbons has been discerned by this child (as compared to the previous excerpt).

Excerpt 7

165 Astrid:	She [pointing to one in the ring of people she has drawn] that's Nova-Lie in the picture, and Astrid, that's me. That's me and that's Nova-Lie.
166 Teacher:	Mm, were you the ones who started dancing that time when you did the drawing?
167 Astrid:	Mm, no, I drew what I wanted to draw.
168 Teacher:	You wanted to draw like that, ok.
169 Astrid:	And I drew those yellow bands (pointing). Here they're upside down men that's just because they are walking (pointing round in the circle).
170 Teacher:	Ok, you can see the direction of the dance by the way they are drawn.
171 Astrid:	Mm
172 Teacher:	You said something about yellow bands?
173 Astrid:	Mm, these lines are yellow bands [Painting to some detail in the drawing] and these lines in the ring, they are the white lines.
174 Teacher:	That Helena taped to the floor?
175 Astrid:	[a short pause] and the ones furthest in, they're the ones with the yellow bands, you know.
176 Teacher:	Ok, so you have thought out that the ones with the yellow bands are furthest in in the circle.
177 Astrid:	mm

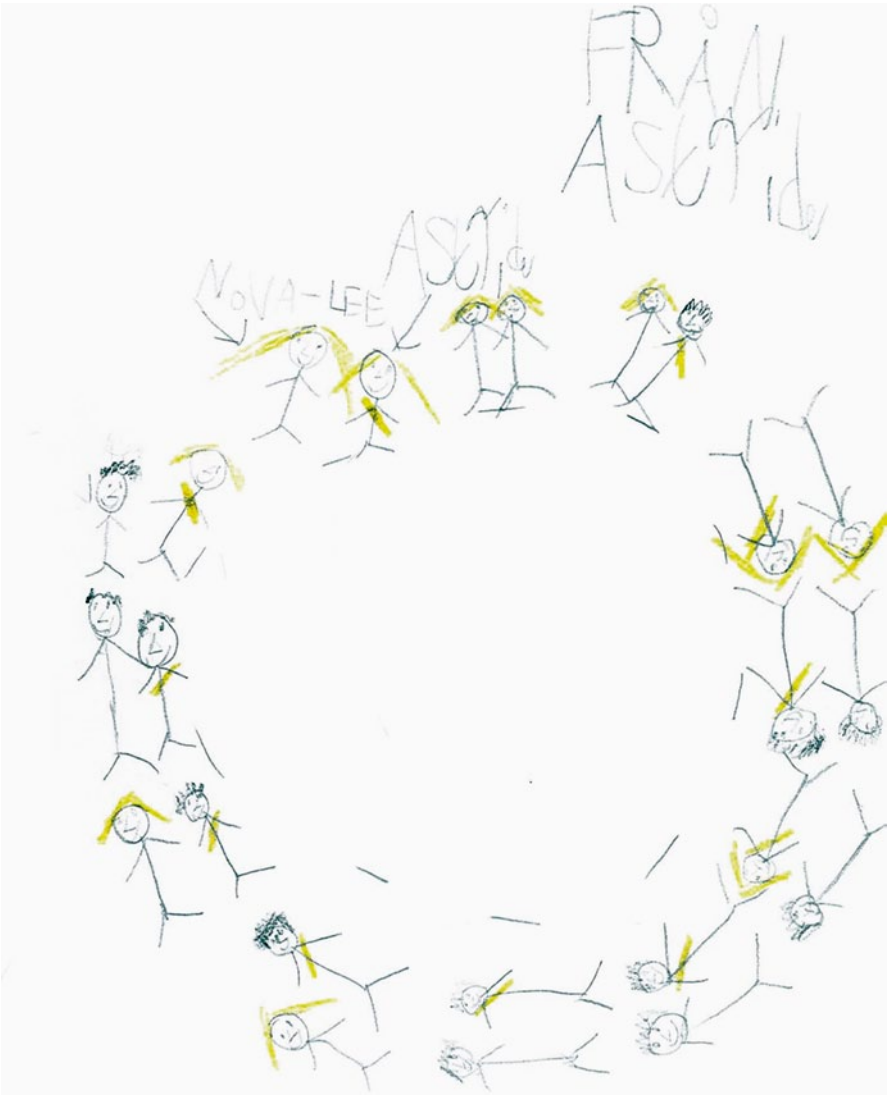

Fig. 11.4 Astrid's first drawing of the dance

In her verbal clarification of her drawing, Astrid makes clear that she has noticed the didactic point of using the yellow ribbons in dance practice. That is, that those who have yellow ribbons are the ones who stand in the inner circle (turn 175). In this excerpt the tension between representing the dance and drawing how one wants once again came into play. The teacher asks, `Were you the ones who started dancing that time when you did the drawing?` (turn 166), that is, if the drawing represents the event referred to. Astrid says this is not the case. Rather, `I drew what I wanted to draw` (turn 167). However, this need

not be considered 'merely' a matter of representation. It could also be read as an indication of what the children pay attention to, consider important, in dancing, that is, *whom* one gets to dance with or whom one *wants* to dance with. As is frequent in such talks, the children use deictic references (Davidson 2005) such as `they` and pointing (turn 169) and these were verbalised by the teacher, `ok, you can see the direction of the dance by the way they are drawn` (turn 170). In this way, the children are also given opportunities to appropriate a language for conceiving dance.

Representing Aspects of the Setting: The Room

What does it mean to dance "Lasse Walks in the Ring" from the children's points of view? From the teachers' point of view, the point of the activity is to make the children aware of their own movements in relation to the movements of others, that is, that they should be able to 'reply' to each other's movements and collaborate in forming a ring and dancing together in a set pattern. In order to clarify and make visible the circling movement (as integral to this dance), the teachers tape pieces of white tape to the floor of the gymnastics hall where dancing is practised to mark a circle. This was intended to help the children to stay in the circle when they dance, as a kind of scaffolding. Do the children pay attention to this circle? Or are they more aware of something else in the activity? After having drawn pictures and told each other and the teachers about their drawings, the children, inspired by each other, are encouraged to say how they would like to develop their drawing (if at all).

Excerpt 8

223 Teacher: Now I would like you to look at your drawings, now that we have, put them down on the floor and have them in front of you. Now we all kneel down, we can manage that. When Astrid or whoever it was said that these lines, they are the bits of tape on the floor, then somebody said: oh, I didn't have that. And now I want you to have a think, is there anything else that you want to add to your picture?

224 Simone: The wall bars.

225 Teacher: We raise our hands! Think now. Is there anything you want to add to your picture to explain more about how the dance works. Julia, have you anything that you want to add?

226 Julia: These curtains that hung there. Then you can see that we are there and are dancing.

227 Teacher: To show more clearly that we are in the gymnastics hall?

229 Teacher: Mm, that's what you want to add. Erik?

230 Erik: I want to add the bits of tape, round about like this.

231 Teacher: … You want to include the bits of tape that…

232 Erik: Add.

233 Teacher: Add.

234 Erik: And the window – and the curtains.

```
235 Teacher:  Really. Simone?
236 Simone:   I want to add the wall bars so that you can see
              that it is in the gym hall, and then I want to
              add these bits of tape on the floor.
237 Teacher:  Mm, why do you want to add them?
238 Simone:   Well, we go outside these pieces of tape, you
              see, when we do Lasse.
239 Teacher:  Mm, do you think it will be easier to understand
              then, if they are there?
240 Simone:   Mm, but I have to draw an arrow too.
241 Teacher:  Why do you want to draw an arrow then?
242 Simone:   To see which way it goes.
243 Teacher:  Anything else?
244 Simone:   No.
245 Teacher:  Ok. Astrid?
246 Astrid:   I want to add Lasse in the ring, then I want
              to add the scene (looking and pointing at her
              drawing) and the wall bars. And then I want,
              er...then I want to add the curtains.
```

As seen in this excerpt, when the children, after commenting on their drawings of the dance, are given the opportunity to make a second drawing where they can add what they think they may have missed the first time, they focus their attention on many features of the physical room in which they practised the dance. These include `the wall bars` (turns 224, 236, 246), `the pieces of tape` (turns 230, 236), `the windows and the curtains` (turn 234) and `the scene` (turn 246). These are all irrelevant to the drawing if its purpose is to work as an instructional aid and an external memory of how to perform the dance. However, from the children's perspectives, these are all relevant aspects of the dance practice. The teacher tries to direct the children's attention to the instructional demands of a dance notation. After Simone has suggested `the wall bars`, the teacher tries to clarify this issue by saying, `Think now. Is there anything you want to add to your picture to explain more about how the dance works?` (turn 225). Although no shared understanding is established at this point, Julia's response, `Then you can see that we are there and are dancing` (turn 226) shows that she can motivate her suggestion. Hence, the features noticed by the children are not arbitrary but motivated (cf. turns 238 and 242; cf. Kress 1997). The children also add, `the arrow` (turn 240) and `Lasse in the ring` (turn 246), a central role/actor in the dance.

The Development of the Children's Drawings and Discernment

The next time, the children get to make new drawings, as mentioned in the last excerpt. The new drawings show that all the children now represent more features of the dance than they did in their first drawing. The fact that the children have been allowed to draw and speak to each other and the teacher about the dance, and that this has resulted in more detailed representations of the dance reveals the usefulness of using these to further develop children's awareness of the dance. In this final section

Fig. 11.5 Simone's first drawing of the dance

of our analysis, we will review this development in the children's representations of the dance. We will consider two examples, Simone and Erik.

The Case of Simone

This is how Simone talks about her first drawing (Fig. 11.5):

Excerpt 9

52 Simone: I've only drawn that there are some people that are walking around, haven't I. I don't really know which one is which. I don't remember, but it's just that they are walking around in a ring (holds up her drawing with both hands for the class to see, making a circular movement with her head, looks up.)

53 Teacher: Ok, you've drawn that they are walking around in a ring. Is there anything else you can talk about?

54 Simone: [looking at the drawing] No, I don't know anything more I can tell about this picture.

55 Teacher: No, but you've drawn that they are walking around in a ring.

56 Simone: Yes.

57 Teacher: There's nothing about the hands? You have drawn very good hands in your picture. You haven't thought of anything to do with that then?

Fig. 11.6 Simone's second drawing of the dance

```
58 Simone:   No, as a matter of fact [looking down at the
             drawing].
59 Teacher:  No, there's nothing you want to add
60 Simone:   No.
```

Figure 11.6 shows Simone's second drawing:

In her first drawing, according to herself, only one aspect of the dance is represented: that the dancers walk around in a circle. In her second drawing we can see the circle but also dancing in pairs, the direction of the dancing (through the arrow), the tape which roughly marks out the circle. She has also introduced some features of the gymnastics hall (at the top of the drawing). In addition, and as she herself suggests, the first drawing does not represent the dance in a way that allows even herself at this later point to remember the dancing in more detail (turn 52). Her first drawing did not function as an external memory (Säljö 2005) to her. But, of course, she may not have drawn it with that intention.

The Case of Erik

Another example of the development of the representations from the first to the second drawing is Erik. In his first drawing (Fig. 11.7), he has already represented many aspects of the dance, but in the second one (Fig. 11.8) he adds still more aspects, clearly inspired by Samuel's drawing (Fig. 11.9) which he has paid attention to.

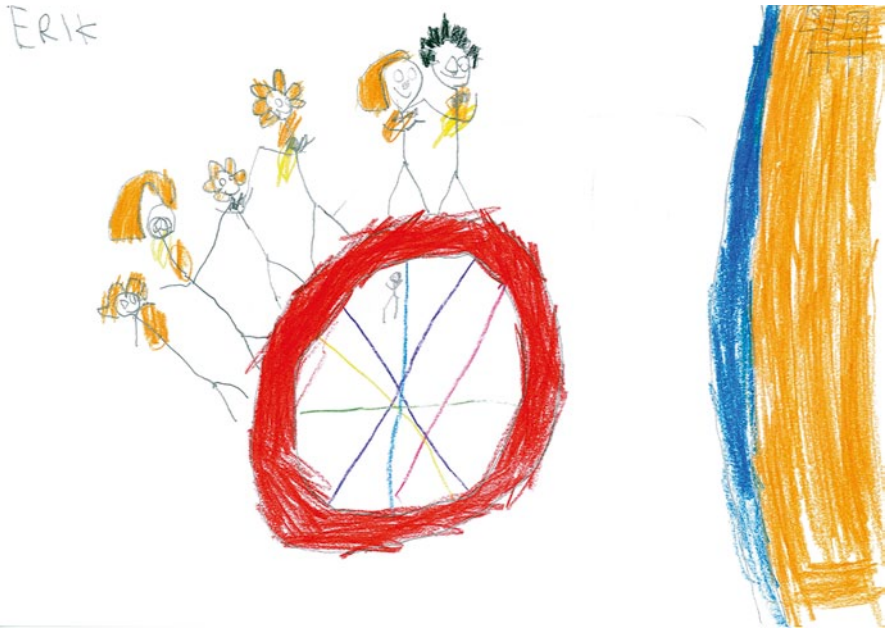

Fig. 11.7 Erik's first drawing of the dance

Fig. 11.8 Erik's second drawing of the dance

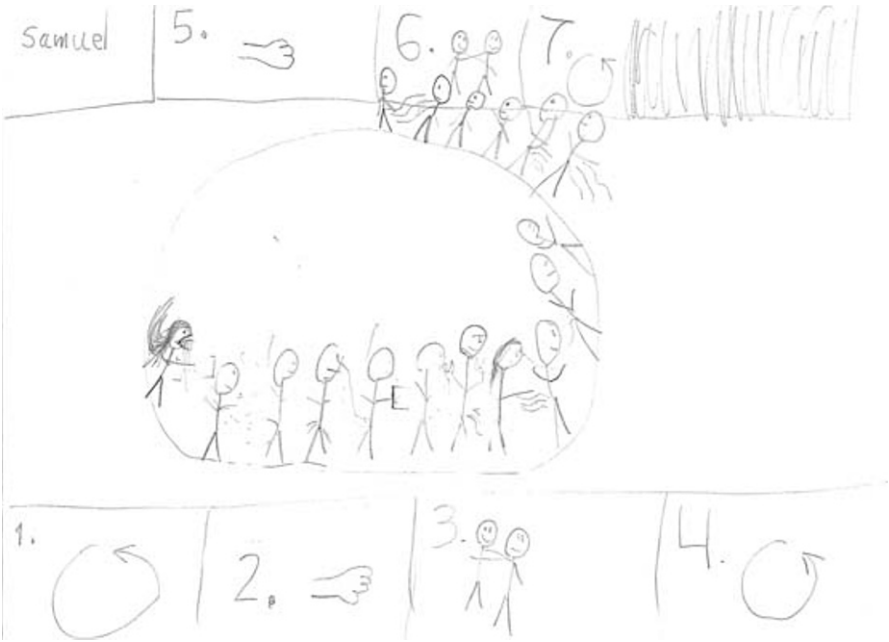

Fig. 11.9 Samuel's first drawing of the dance

In both Erik's drawings are representations of the facts that the dancing is done in a circle, that the dancers move around this circle, that there was tape on the floor and that this dance is done in pairs. In his first drawing, Erik has illustrated pairs of boys and girls dancing together (which, in fact, they did not do, as we have already mentioned) and he has shown the dance being done in the opposite direction to how they danced. In his second drawing, Erik has disregarded the girl–boy aspect but instead added sequentiality. He has drawn a number of squares (frames) that are numbered. In the first frame is a circle for 'walking around', in the second and third frames are hands for "right hand in your partner's, left hand in your neighbour's" and in frame four, "arm round the third one". In frame six the circle returns, that is, the dance begins anew and is repeated.

Discussion and Conclusions

In this study we have been concerned with the challenges faced by children and the sense made of the activities they have been involved in (dancing and representing dance in words and drawings). We have also been concerned with the teachers' learning, that is, what challenges and responses to these the teachers faced during these activities. Finally, we have initially raised the question of whether, and if so, in what way, this circle-dance project can be considered an aesthetic one. This

question is raised against the teachers' framing the activity as an aesthetic one (and as a part of art class, rather than physical education). We will now summarise what we found in response to these queries and discuss didactic issues raised by these findings.

If the children's representations of the dance are seen in terms of discernment (Gibson and Gibson 1955), the children developed their skills in the course of the term during which they were studied. Their second drawings contained more features than their first ones. The children also learned from each other (cf. Pramling 1990, 1996) when sharing their thoughts and drawings of the dance. At the same time, this learning from each other meant that they also picked up aspects leading in a direction contrary to the teachers' intentions (see e.g. excerpt 8). Hence, while facilitating their development, this additional complexity puts emphasis on the didactic challenge of the teacher to direct children's attention towards the goal he or she intends to help them achieve.

This study has revolved around the issue of representation in dance education. But is not fixating this art form on paper and speaking about it missing the point of dancing? Dancing should, of course, be at the centre of dance education as music should be at the centre of music education. This is important. However, as in music education, for many educational purposes, it is necessary to speak and verbalise the music or the dance in order to help someone develop their knowing in this domain (see Pramling and Wallerstedt 2009 for a discussion). It may be important to consider the possibility that an art (aesthetic) activity/performance is, and has to be, one thing and an art/aesthetic educational activity is quite another, something else. Performing an art and learning that art are distinct practices (with different motives, goals, etc.).

In the introduction we raised the issues of language (verbal representation) in the research on and learning in the arts. As seen in this study, the role of representation (documentation) is important for children, in supporting their sense-making and possibility of sharing and thus learning from each other. For the teachers, representations are important in allowing them to see how they succeed in carrying out or fail to carry out the intentions they had with an activity, and what worked well and not so well. For researchers, representations are important since they allow access to children's discernment and the sense they have made, and are also in a form that could readily be presented as a research study (language and images, models).

Visually representing (making drawings of) the dance offers the children a scaffold when talking about the dance, but this medium also introduces additional difficulties (the role of the graphic representation in the activity, knowing what to represent, consider relevant, how to represent and what the child can and cannot draw). The function of representation is thus an issue between the teachers and the children. This issue is thematised through the teacher's meta-talk (see excerpt 8, turns 225 and 239) when clarifying the task (as she and her colleagues intended it). When introducing representations, it is important that the teacher clarifies the role intended to be filled by these representations. For what reason is a certain kind of representation used? What is the purpose of representing this activity? While this may be obvious to the teacher, and for that reason not made explicit to the children, understanding why graphic representations are used in dance education can, as seen

in the empirical study reported in this chapter, be understood in a variety of ways that may differ markedly from the teacher's intention.

While primarily being concerned with the children's learning, we have also considered the teachers' learning during the project. Central to the learning of the teachers, as become evident in this study, is how they have developed their skill at communicating with children in order to understand their understanding. This is important when trying to further the child's understanding. There is a clear progression in the teachers' ability to ask the children questions that are productive in the sense that they give teachers access to their evolving understanding.

When presenting the theoretical framework of developmental pedagogy (Pramling Samuelsson and Asplund Carlsson 2007, 2008), we introduced the distinction between the learner's and the teacher's perspective (Marton and Booth 1997; Wallerstedt et al. 2011). If we look at the children's drawings from the teachers' or the researchers' point of view, several children drew things that did not concern the dance as such. For example, they drew curtains, a stage and wall bars. However, if we see the drawings from the child's perspective, what was drawn was what the child considered relevant to the task as he or she understood it. Children's signs are, in Kress' (1997) words 'motivated', they are not arbitrary or irrational. Looking at sense-making from the learning child's perspective, we must assume that what he or she does is what appears reasonable to him or her. The task for the analyst (as well as for the teacher) then becomes to try to unravel the logic in the child's 'take' on the task. What is being asked of the child, in his or her own understanding? Finding out what kind of activity the drawing task is and as a consequence, what may be relevant and irrelevant to represent (draw, depict) is one of the challenges faced by the children. There is a discrepancy between what the children and the teachers consider to be the purpose of the activity. Hence, an ensuing task is to try to co-ordinate these different understandings. This important analytical distinction between the teacher's and the learner's perspective also leads to another fundamental issue of education, viz. learning something specific in a certain situation and/or generating a more general, principal, kind of understanding. This is the tension between the principles of 'categorisation' and 'particularisation' (Billig 1996). In the present case, this is the issue of whether what the children have paid attention to (and was thus represented in the drawing and talked about) is what they did at a particular time and place, or if it is a more general issue such as how to represent the particular kind of dancing on paper (in order to describe to others and remember oneself at a later point in time) (cf. Pramling 1996). Hence, a didactic challenge is to help learners understand that an illustration is supposed to exemplify something else, a more general kind of insight than where and what they did there and then. Against the background of the recurrent finding (e.g. in regard to how to understand what it means to represent in this case and activity) concerning the discrepancy between the teachers' perspective and the children's perspectives, trying to coordinate these different perspectives is a key task for achieving an educational encounter.

A particular kind of difficulty in drawing conclusions concerning children's sense-making, is the difficulty of transducing (Jewitt et al. 2001) the moving and fleeting nature of the dance (the process of dancing) into a static drawing (the product of a

picture). The movement (process) in a room needs to be transformed into a product (a certain place and object) in another kind of room, space (the drawing). The children manage this challenge in their drawings through (a) introducing sequentiality in the form of numbers related to images (frames in the drawing) and (b) using the conventional symbol of the arrow (to indicate direction and order). As a meta-note, we may add that one of the tasks facing the children is analogous to a difficulty faced by researchers in dance (education): how to represent this flow of activity on paper (graphically, including in writing). For this reason, children's and teachers' actual movement during their dancing is not analysed here. Still, it is important to remember that they did dance extensively during the term in which the study took place. Hence, it was not merely a talk-and-draw activity, as here analysed. Still, analysing how teachers and children communicate in speech and drawings about the dance they practise is of considerable educational interest. Communicating about what one does is at the heart of educational activities referred to in this book as 'didactic'.

Against the background of the teachers framing this dance learning project in terms of 'aesthetics' and 'art education' (rather than physical education), we raised the issue of whether the set of activities as they developed could be considered 'aesthetic'. So, in what ways (if any) may the activities followed in this study be considered 'aesthetic'? Firstly, and most obviously, they are practising a dance, which is an activity that is well within the bounds of the arts, the aesthetic domains. Secondly, and less obviously, they make drawings of the dance. In fact, the children in many instances take this task as a visual-art activity, and in a sense transform the activity into another aesthetic field. Thirdly, aesthetic judgments are made by the participants, primarily the children but also, if to lesser extent, by the teachers. That is, they use judgments such as 'fine', 'beautiful', etc., which are examples of one common aesthetics concept (aesthetics as value judgments of this kind). However, such judgments are not only made in domains of art but also in other fields of knowing, for example in science education as clarified by Wickman (2006). Finally, the issue of transduction (Jewitt et al. 2001) is central in the activities followed. This transformation from one sense (cf. synaesthesia) or form of communication into another is frequent and characteristic of many activities and 'products' we call aesthetic or art (Pramling and Wallerstedt 2009), even if in no way exclusive to such activities and products. To give some examples: Vivaldi's "The Four Seasons", 'musical alliteration' in poetry (Sloan 2001), representational (gestalting) dance, music notation (score) and "Rhapsody in Blue".

As seen in the excerpts analysed, when given the opportunity to draw the dance, the children were able to speak in a far more productive way as time progressed, indicating that they had discerned many features of the dance, as compared to when they talked without the support of a graphic representation. While we have already indicated this, an additional point is important to make in this regard. In the context of early schooling in Sweden (as we would expect in many other countries throughout the world), children are often encouraged to make drawings and tell stories with their help. Had they instead been challenged to make, for example, a sculpture of the dance, they would probably have found themselves in much greater difficulties. Hence, while the representations used in this case proved facilitative, it is important

to realise, we argue, that using representations in a productive way in learning presupposes that the children have been given ample opportunities and scaffolding for appropriating that particular representational skill. Being able to represent in various modes and media is a skill in itself, which children need to learn (cf. Chap. 5). Furthermore, the use of representations in this study indicates yet another potential use in dance education. Inventing notations for dance may be used in designing (choreographing) new dances, even if not used in this way in the practice studied in the present study. When the child has appropriated the skill of, and insight into, notating dance, this skill could be used to further the child's thinking about dancing, and subsequently, their actual dancing (cf. Warburton 2000). Learning to represent, we may conclude, is also a means of differentiating one's perception, which could be argued to lie at the very heart of aesthetic knowing.

Letting children represent the fleeting/transient art form of dance through inventing dance notations and speaking about these paves the way for a set of didactic challenges and opportunities, including, importantly, directing their attention to the dance, that is supporting children to 'mind the dance'.

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Chapter 12
Pedagogical Quality in Preschool: A Commentary

Sonja Sheridan

Introduction

The aim of this chapter is, from a perspective on didactics and pedagogical quality, to discuss conditions for children's learning of different content in preschool. Conditions for children's learning are here approached by reviewing the studies contained in this volume. The focus of this reanalysis is on teacher–child interaction and communication in relation to a number of central aspects in contents and learning objects, teacher approaches, children's learning and the preschool context. In so doing, four dimensions of quality are used as analytical lenses. The notion of a central aspect is that it is an aspect that, more so than others, seems to be particularly vital for discernment and understanding in order to learn about specific content. The questions addressed are as follows: What central aspects can be discerned from a perspective on didactics and pedagogical quality, and how are these aspects related to one another and to conditions for children's learning of different content in preschool?

Didactics and pedagogical quality are phenomena that focus on conditions for children's learning in relation to the overall goals for preschool. Didactics concerns the question of creating conditions for children's learning of central aspects of different content in preschool (Broström and Veijleskov 2009). Pedagogical quality is seen as a complex system of interplay between different dimensions and different aspects of material and human resources, thus creating a broad spectrum of conditions for learning in preschool (Sheridan 2009). These conditions comprise structural aspects such as space, equipment and materials that are used in both indoor and outdoor environments. Other aspects are the overall goals of preschool and how, in practice, these goals are implemented as content and pedagogical processes. Conditions for learning also embrace the organisation of preschool, the social and emotional climate, the interaction and communication between teacher and child and between children. Further, it embraces teachers' competence, educational style

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and approaches, as well as children's participation, play and learning within different content areas. Pedagogical quality needs to be considered both as a whole, and as dimensions and aspects of the whole.

This chapter is structured in the following way: First, the theoretical framework of pedagogical quality is discussed as an interactionistic and inter-subjective perspective. Second, the constitution of four dimensions of quality, used as analytical lenses to examine the studies presented in this book, is described and discussed in relation to research on quality. Third, analyses of central aspects in content and learning objects, teachers' approaches, children's learning and in the learning contexts described in the studies in this volume are discussed in relation to each of the four dimensions of quality. Finally, the analyses of the four integrated dimensions are discussed in relation to didactics and to the pedagogical quality of teacher and child interaction and communication.

Theoretical Framework

The theoretical framework of pedagogical quality is based on interactionistic theory, where the learning environment in preschool is seen as a complex system of interplay in which individuals/children and the environment influence and are influenced by one another in a continuous interaction. Bronfenbrenner's (1979, 1986) ecological framework is used to explain how, on different levels, systems interact and influence conditions for children's learning in preschool. The ecological framework describes how, alongside chrono-systems (time), micro-systems of cultures and societies (i.e. the family) meso-systems (preschool and school) and macro-systems (economic and social policies) interact and influence conditions for communication, interplay and learning in preschool, and the ways in which such systems determine the forms in which didactics and quality can develop. Whilst macro-systems, which are formed by ideological, legal, economic, historical and political values, influence what children are expected to learn in preschool within different cultures, chrono-systems show how these values and expectations change and develop over time. The systems are mutually interdependent and the dialectic between them means that the overall intentions of preschool are intertwined with events in practice (Ball 2006). Consequently, all of these systems need to be taken into consideration in order to understand conditions for children's learning in preschool in a more comprehensive way (Sheridan et al. 2009a).

Born with an inclination to learn and understand, children communicate and interact with the surrounding world (Sommer et al. 2010). The theoretical view of children's learning and development is that the development of cognitive, social and emotional aspects cannot be separated. Together they constitute an integrated whole where learning is seen as a change of perspectives that takes place via experiencing, acting and communicating with the environment which, in turn, interacts with them in various ways (Marton and Booth 1997; Pramling 1994).

The core of pedagogical quality lies in the interplay between the teacher and the child, and between the children themselves. It means that children learn how to play, interact, communicate and, for example, use mathematics in interplay with each other. By interacting both with other children and with teachers, children create meaning and learn how to deal with the world around them. In the same way that children's learning processes (the learning act) cannot be separated from the content of learning (the learning object), preschool quality cannot be evaluated without knowledge of children's understanding and progression in learning.

Based on an interactionistic perspective, pedagogical quality does not exist in itself, but takes shape and develops in pedagogical processes through the interaction and communication between children and teachers, and interaction with objects in various learning contexts of preschool (Sheridan 2001; Sheridan et al. 2009a). An interactionistic perspective on pedagogical quality in preschool also means that the level of quality depends not only on how the environment is constituted to meet, extend and challenge the experience and intentions of children, but also on how the child can influence and form both the overall environment and his or her own learning process.

An Inter-subjective Perspective on Pedagogical Quality

The notion of pedagogical quality as an inter-subjective phenomenon provides a novel perspective on quality. In research, quality in preschool is often conceived of as being either a subjective or an objective concept (Dahlberg et al. 1999; Moss et al. 2000). The main difference between these perspectives of quality is that, in contrast to an objective approach, a subjective approach is based on cultural variation, visions of society and political and philosophical perspectives. A subjective perspective means that quality is seen as a relative and dynamic concept which is always associated not with an objective reality, but rather with a particular situation, a particular period of time and a specific social and cultural context. According to this approach, intercultural comparisons of quality based on common definitions and methods are both unachievable and undesirable (Dahlberg et al. 1999; Tobin 2005; Tobin et al. 1989).

Even if the knowledge of people and institutions is constituted and maintained through interaction in specific cultural contexts, it does not mean that each community has a unique set of values and goals. Instead, there are regularities among the variation (Rogoff 2003), which can be related to the philosophy of an inter-subjective perspective on quality. An inter-subjective perspective on quality derives from the view that there are values and conditions that are so crucial to children's learning and wellbeing that they serve to bridge specifics and function as unifying devices (Balaguer 2004; UN Convention on the Rights of the Child 1989).

Inter-subjectivity means that, to a certain extent, people can agree on and share understandings of experiences, values, phenomena, concepts and situations (Stern 1985; Wertsch 2000). In order to share views on quality and to assess preschool

quality in a comparable way, inter-subjectively agreed upon understandings of conditions, values and knowledge have to be defined (Sheridan 2007, 2009; Sheridan et al. 2009a). Pedagogical quality focuses on conditions for children's learning in relation to overall goals for preschool and can be defined as "a multidimensional phenomenon, in which interdependent dimensions and aspects constitute an environment that in different ways contribute to children's opportunities for learning and development in educational settings. These dimensions and aspects are partly constituted of sustainable qualities that are inter-subjectively agreed on and partly by dynamic and relative qualities that are subjectively conceived depending on perspective, time and context" (Sheridan 2009, p. 254). From such a perspective, pedagogical quality is seen as a phenomenon of sustainable dynamism and one that has both sustainable structures and is culturally sensitive.

The definition of pedagogical quality is based on values and knowledge from research on preschool quality and contemporary theories on children's learning and development. Perspectives as to how such values and knowledge are to be carried out in Swedish preschool practice are articulated in the goals and stated intentions of the National Curriculum for Preschool (Ministry of Education and Science 2010).

Four Dimensions of Quality

The four interacting dimensions of society, teachers, children and learning contexts, form the main constituents of pedagogical quality (Sheridan 2001, 2007, 2009). Each dimension is constituted by aspects/qualities that are unique for the dimension and can be related to structure, process, content and results (Donabedian 1980; Karlsson 1997, 2000; Sheridan 2009). To understand children's experiences of and conditions for learning in preschool in a more comprehensive way, all of these dimensions need, in an integrated way, to be taken into consideration and positioned in relation to the focus of analysis. In the pedagogical practice of preschool the dimensions are inseparately and mutually interdependent. Depending on how the dimensions interact with one another, learning environments of different quality and which impact differently on children's wellbeing, learning and development, are created in preschool. Dimensions and aspects of quality can, from this interactionistic perspective, be regarded as interdependent and not as separate entities. In other words, no aspect exists or ought to be studied in isolation from any of the others (Rogoff 2003).

In this chapter, the dimensions are, initially, used as independent analytical lenses to discern and analyse central aspects in contents, teachers' approaches, children's learning and the overall context in preschool. Thereafter, the analyses are integrated through the four dimensions of quality. Through them, overall patterns of didactics can be discerned and identified as well as the quality of conditions for children's learning in preschool. From this perspective, quality is regarded as a question of valuing conditions for children's learning as such is expressed in terms of goals, content, pedagogical processes, communication, interaction and participation.

The Dimension of Society

This dimension focuses on the collective knowledge of society and societal intentions relating to views of child, childhood and preschool. The dimension provides knowledge of the overall goals for preschool and shows how these goals are implemented in practice as content and activities. The dimension of society also encompasses, for example, norms and values, traditions, cultural and contextual specifics and the traditions concerning children's learning in preschool that need to be taken into account when the quality of preschool is studied holistically.

Structural quality embraces dominating discourses, laws, political decisions, expectations and demands on preschool. In Sweden these intentions are mainly expressed in the curriculum for preschool and other documents that contain guiding principles for preschool education. Overall, intentions also find expression via the allocation of economic resources from both government and municipalities. The contents and process quality of this dimension provide knowledge about the meaning given to the goals, and reveal how the goals are implemented in practice as content and activities. The outcome quality within this dimension mirrors the ways in which the task of preschool is understood and carried out in practice in relation to the overall intentions concerning children's learning.

In the dimension of society, critical aspects are to be found in the intersection between the intentions of the collective and the individual. The focal points of research, documentation and analyses are the conditions for children's learning as they appear in relationships between intentions in the overall goals, preschool practice and children's learning (Sheridan 2009).

It is indisputable that the meaning of preschool quality is tied up both with the influence of culture, context and societal intentions relating to the child and childhood (Moss 2004), as well as political and educational intentions in terms of the regulation of preschool (Sylva et al. 2006). Just as the overall goals of society influence preschool practice, views of the child and teachers' approaches, they are also of importance in relation to quality (NAEYC 1991, 2006). Bennett (2004) describes two broad approaches to early childhood education, namely, *the social pedagogic approach* and *the pre-primary approach*. The central aim of social pedagogic approach is to empower children as active citizens with control over their own lives by strengthening identity and self-esteem. The other approach is seen as more school-oriented, focusing on cognitive development and school readiness. Siraj-Blatchford (2010) means that the difference between these approaches can be interpreted in terms of the presence or absence of predefined goals (knowledge, skills and attitudes) that children should acquire in preschool. To avoid dichotomies between education and care, Bennett (2004) and Siraj-Blatchford (2010) proposes that high levels of quality in preschools and positive outcomes for children are related to forms of practice in which cognitive and social development are viewed as complementary and of equal importance to children's learning and development.

Pedagogical quality focuses on conditions for children's learning in relation to overall goals for preschool. In the Swedish national curriculum for preschool, chil-

dren's social and cognitive learning is integrated and viewed as of equal importance (Ministry of Education and Science 2010). In the curriculum it is stated that all activities in preschool should be carried out in accordance with the fundamental democratic values enabling children to acquire an understanding of the values upon which Swedish society is based. The preschool should also lay the foundations for lifelong learning and offer an enjoyable, secure and rich learning environment. The goals are formulated as "goals to aim for". They set out directions for pedagogical work and contain targets for quality development. According to the goals in the curriculum, preschool is to provide children with support to develop a positive picture of themselves as learning and creative individuals, to develop confidence in their own ability, to increase their competence, to acquire new knowledge and insights through their own activity and to stimulate their language and mathematical development. In the revision of the preschool curriculum the content areas of language, mathematics, science and technology are all emphasised areas (Ministry of Education and Science 2001).

Content and Learning Objects: Analyses of the Findings of the Studies in This Book

The focus of the studies collected together in this book is here on central aspects in the content and learning objects viewed in relation to values and goals in the Swedish preschool curriculum. For example, democracy as content is not a free choice in Swedish preschools. These values are part of the preschool curriculum in the same way as, for example, mathematics, science, dance and art. Each of the different studies in the book shows how meaning is given to different curriculum goals and how these goals are concretised in practice as content and learning objects. In line with Siraj-Blatchford's (2010) standpoint, each analysis shows how, irrespective of content and learning object, children's cognitive and social development are viewed as of equal importance to the child's learning and development. In Sweden, in the preschool curriculum, there is no distinction between age and content, meaning that even the youngest children have the right to learn about all of the curriculum goals in preschool.

To understand a specific content area some aspects seem to be more central than others to discern. These aspects are also unique in the sense that they are strictly related to a specific content. From a didactic perspective these aspects need to form a central area of focal attention in learning situations. One might say that, in order to learn about the substance of an area of content, the content itself needs to become an object for learning. As can be seen in a number of studies in this book, the content is the focal point. It is thus the content that forms a central area of focus and thus becomes constituted as a learning object in communication and interaction between teacher and child, as well as the focus of documentation. In a few studies, such as for example Johansson's investigation of morality, the object of learning is more implicit and becomes visible in encounters between the child and teacher and children's own interaction.

Let us here focus on children's learning of narratives, which is a goal in the Swedish preschool curriculum (Ministry of Education and Science 2010). For example, in the study carried out by Pramling and Ødegaard (this book), central aspects in relation to narrative as a learning object are highlighted in a situation in which two teachers and six children (1–4 years old) are engaged in the collaborative creation of a story using cards. Of central importance in enabling children to learn to narrate is the ability to discern that a narrative is constituted of one or several actors, a series of temporally organised events and a contextualisation that involves the weaving together of events, actors and time using connective phrases such as, for example, 'and then', 'because' etc. This requires communicative skills, an awareness of what to tell and what other children want to hear.

In Thulin and Helldén's study (this book) focus is directed on how the object of learning is constituted in the communication between teacher and child and what aspects they talk about and focus on. Central for children to learn about ecology is the ability to discern the complexity of processes and systems by experimenting, focusing on and communicating about relationships, conditions, classifications and differences. Central aspects are also the teacher's content-knowledge and approach to ecology.

Gender, democratic and moral values are contents that appear to become visible in encounters between children and between teacher and child. Democratic values seem to be mediated in situations and encounters that are characterised by participation and influence as demonstrated by Emilson (this book) in her study of children's learning of democratic values. Here central aspects are identified as engagement, playfulness, physical and emotional proximity between teacher and child, possibilities for children to take initiatives, make suggestions, and to contribute to turn-taking on equal terms. Stereotyped gender norms seem to be mediated in routine situations, in situations that are stressful and in certain planned preschool activities, as shown by Hellman in her study of the construction and children's learning about gender in preschool (this book). Central aspects in relation to stereotyped gender norms seem to be strength, size, achievements, age, colours and clothes. For example, norms about strength, being brave and having super-heroes as role models are used to encourage boys to eat. Similarly, such strategies are used to make children feel younger when they transgress gender borders, and older when they internalise expected gender performances. Central aspects for countering stereotyped gender patterns seem to be influence, participation, co-operation, caring, creativity and humour. It is important to emphasise that whether or not focus is placed on stereotyped gender norms, depends on culture, the preschool context and societal intentions around children and childhood (Moss 2004). For example, in a Swedish preschool context, stereotyped gender norms have a specific meaning, and the ways in which these gender norms are communicated in preschool practice becomes an issue of quality.

To summarise, analyses that take their point of departure in the dimension of society focus on aspects in contents that are more central than others for teachers and children to discern and understand. These aspects need to be made visible in order to develop preschool didactics and to create the conditions needed for chil-

dren's learning of different contents in preschool. The analyses show that whilst some aspects are *unique* and related to a specific content, others seem to be *common* and can be found in all of the studies of this volume. These are *content-knowledge, shared focal point, discernment, relationships* and *communication.* To be the focus of attention in learning situations, a learning object needs to be discerned, communicated, and studied in relation to other aspects, focusing on, for example, the complexity of processes and systems.

The Dimension of Teachers

The focus of this dimension is teachers' professional competence. The dimension embraces the teachers' attitudes and values and their views of the child, knowledge and learning. A central feature of this dimension is the teacher's perspectives of the child and the ability to understand the child's own perspectives in terms of strategies, approaches, communication and interplay. It is a question of being part of the child's learning processes and to combine the child's interests and intentions for learning with the goals in the preschool curriculum.

The structural quality in this dimension is constituted by the teachers' formal education, theoretical knowledge, attitudes and values. Political and pedagogical issues are here related to the profession and positions preschool teachers hold in a specific society. The dimensions content and process quality highlight the teacher's pedagogical awareness and knowledge of children's learning both in general as well as in relation to specific contents. The focus here is on the teacher's knowledge within different content/topic areas, approaches, communication and interplay, as well as their endeavours to understand children's learning processes and strategies. Important content and process qualities include the teachers' understanding of competence and professionalism, how their competence is expressed in communication and interaction with the children, and how they comprehend their own part in children's learning. The outcome quality in this dimension is the teacher's competence to combine the child's interests to learn with the goals of society.

Critical aspects are to be found in the teacher's competence to communicate, share and focus on the same learning object as the child. Research, documentation and analyses involve, in this dimension, a question of highlighting how teachers approach children in their learning processes, teachers' strategy use, their knowledge of different content and their competence to share and communicate different leaning objects with children (Sheridan 2009).

The EPPE-project (Effective Provision in Preschool Education) is a large-scale, longitudinal study of the learning and development of 3,000 children in various types of preschools in England and Northern Ireland. As part of the project, different case studies were conducted in order to understand the characteristics of high-quality preschools. The results of these case studies indicate that in high-quality preschools, communication, collaboration and creativity, are combined in the pedagogical approach of the teacher. Siraj-Blatchford (2007) argues that creativity, com-

munication, and collaboration are all combined in the pedagogical approach that she terms 'sustained shared thinking' and which, she suggests, is "an effective pedagogic interaction, where two or more individuals 'work together' in an intellectual way to solve a problem, clarify a concept, evaluate activities, or extend a narrative" (Siraj-Blatchford 2007, p. 11).

This study, along with others, clearly demonstrates that high levels of quality in preschool are closely linked to the competence and professionalism of the teacher (Sheridan 2001, 2009; Sylva et al. 2004). These refer to, among other things, the competence to create a negotiating and challenging learning-oriented environment and one in which teachers are physically, emotionally and cognitively present in the 'here and now'. Further, teacher-child interplay is characterised by communication, reciprocity, a sharing of interests, attention and learning objects (Sheridan et al. 2009b).

Teachers' Communication and Interplay with Children: Analyses of the Findings of the Studies in This Book

The quality of teachers' communication and interplay are fundamental conditions for children's learning in preschool. Depending on what teachers communicate and how they approach the child and the object of learning, learning environments of different quality are created. The meta-analyses, through the teacher dimension of the studies presented in this book, highlight central aspects in teachers' communication and interplay, both generally as well as in relation to specific contents.

The analyses show that central aspects in teachers' communication and interplay are what teachers *communicate about* and *how they communicate*. Other central aspects are teacher's *content knowledge* and *pedagogical knowledge.* Content knowledge in different areas needs to be combined with a general pedagogical knowledge of how children learn such content, as well as a specific knowledge of individual children's learning about different learning objects. Of fundamental importance here is the knowledge of how to *coordinate their own (the teacher's) and children's (the learner's) perspectives* (Pramling and Pramling Samuelsson, this book). Let us now examine central aspects in the teacher's communication and interplay in three different studies in this book.

It is of central importance that teachers are present in the 'here and now' and that they ask specific questions that help, for example, a child to tell a story in a way that makes sense to others. In Niklas Pramling and Elin Ødegaard's study (this book) the teachers scaffold the children by asking them the question, for example, how does a story begin? They repeat what the children say and are involved in the story-telling by helping the children to move the story forward by making suggestions as to how it can be extended. They encourage the children and confirm them as storytellers. They seem familiar with each child's unique way of telling a story and their narrative skills. The teacher's own knowledge of the constitution of a narrative and how children learn to narrate thus seems to be of fundamental importance. The teachers' knowledge of children's personal experiences is also crucial when encouraging children to tell about their life experiences in the form of a narrative.

Early mathematics in the preschool context reconsiders several research studies focusing on children's learning of different learning objects, such as, for example, the concept of numbers, measurement and shape, and children's ability to orient themselves in space and time (Doverborg and Pramling Samuelsson, this book). Aspects that are of central importance in this respect are the teacher's communication and interaction with children about different mathematical tasks, the direction of the children's attention towards central aspects in the learning object, and challenging them to think, talk, reflect, argue and count, and to solve problems and recognise shapes and patterns related to activities and objects. In this regard the teachers use concrete and visible objects for mathematical learning. With the help of these objects, they enable the children to categorise, sort and compare differences and similarities, to discern the largest and smallest and the longest and shortest, heaviest and lightest, and to form a series of objects. The teachers ask explicit questions to help children solve mathematical problems, such as, for example, by asking how many stones are needed to make a troll. They also challenge children to estimate and measure. Central aspects in teachers' mathematical approaches are thus the skill of using variation as a source to make mathematics visible to children and the ability to help children to document and evaluate their mathematical experiences. This involves the specific competence of being able to share and focus children's reflections upon varied and changing ways of representing numbers, including operations and spatial thinking, geometry and measurement. Further, it is of critical importance that teachers work systematically and in various ways with the same issues over a period of time.

Teachers have an important role in facilitating children's learning in music as the research conducted by Wallerstedt (this book) clearly demonstrates. In this study the teacher aims to develop children's skills to discern time in music, which becomes visible in the intersection between the teacher's and the learner's perspectives and experiences (and which in this study is documented and analysed). The study is conducted as a learning study, in which the teacher's professional development can be followed in parallel with the children's learning processes. In her approaches the teacher attempts the use of different strategies, discounting those that seem to confuse the children. She tries to focus the children's attention on the object of learning by asking direct and explicit questions. The teacher also tries to create a variation in the learning situation by constituting a figure against an invariant background and varies the object of learning in relation to the children's responses. The ability to discern both the pulse and, at the same time, the accented beats that limit and mark out a bar, appears, as viewed from the child's perspective, to be a central aspect in understanding time in music. In spite of trying a range of different strategies, a gap nevertheless remains in the teacher and children's understandings. Thus, for this reason, the need to identify the intersection of the teacher's and the learner's perspective, and indeed to coordinate these perspectives, becomes a crucial task.

To summarise, the recognition of the relationship between high quality in preschool and the competence and professionalism of the teacher (Sheridan et al. 2009) is enhanced by the findings of the studies in this volume. However, the analyses also show that, in order to create high-quality conditions for children's learning of different content in preschool, teachers need to have several competences, and

know how to *simultaneously combine and integrate* these competences in different learning situations. For example, in order to create situations of shared sustainable thinking (Siraj-Blatchford 2007), teachers need to be able to direct children's attention towards an object of learning. When teacher and child share the same object of learning, the teacher needs to ask fruitful questions in order to help the child discern central aspects in the object of learning, as well as devising strategies that enable the child to reflect and express his/her views both on the issue at hand and his/her own learning process. Wallerstedt's study (this book) highlights the complexity of and difficulties in coordinating the teacher's and the learner's perspectives.

The Dimension of Children

This dimension focuses on children's wellbeing, learning, development and participation from a child perspective and the perspective of the child. Central in this dimension is children's meaning making, communication and interaction, both with one another and with preschool teachers.

The dimension structural quality is the theoretical framework that provides the point of departure for focusing on the child and learning and, thus, creates conditions for children's learning and participation in preschool. Its content and process quality highlights how children understand and experience the world around them. It mirrors how communication and interaction between children and between teacher and child is expressed, as well as focusing on children's opportunities to make their voices heard, to participate in activities and to influence the learning context. The outcome quality in this dimension has a focus on children's learning processes in relation to curriculum goals and conditions for learning in preschool.

In this dimension critical aspects include the perspectives of the child and progression in children's learning. Research, documentation and analyses are, in this dimension, regarded as a question of seeing children as subjects with voices of their own. It is based on a desire to understand children's intentions and expressions of meaning in relation to a specific content, a certain situation and a particular context. Documentation and evaluation provide means to support and challenge children in their learning, as well as to enhance preschool quality. From this perspective the challenge is to document and analyse what children have learned over time and within different content areas in relation to encounters of communication and interplay with the teachers (Sheridan 2009).

In research on preschool quality, the inclusion of a child perspective and the perspective of the child—the voice of the child—is a necessary requirement (Clark et al. 2006; Clifford and Bryant 2003; Sheridan et al. 2009a; Sommer et al. 2010; Sylva et al. 2004; Siraj-Blatchford et al. 2008). Without such a commitment an essential part of how children understand different contents, what learning strategies they use, and how they experience their learning opportunities within various preschool settings—as well as an overall understanding of its quality—would be lost (Sheridan 2001, 2007, 2009).

Research on children's participation and influence in preschool shows that, whilst, to a certain extent, children can decide about play and events in preschool, they can seldom influence the overall preschool organisation, activities and content (Sheridan and Pramling Samuelsson 2001). The results of the aforementioned study highlight a gap between the children's and the teachers' experience of children's participation and possibilities to influence ongoing activities in preschool, indicating that even if the teachers involve the children, they cannot take for granted that the children feel a part of what goes on. One reason could be that children are not placed in positions where they can abstract meaning from their experience, as participation and minor everyday-decisions are taken for granted and, consequently, not made visible for the children as acts of influence and democracy. The results also show that children experience that they participate in decision-making on equal terms if the situation is characterised by reciprocity, turn-taking and involvement.

Children's Perspectives and Learning: Analyses of the Findings of the Studies in This Book

The Swedish curriculum for preschool determines the values and content that the children have the right to learn while being there (Ministry of Education and Science 2010). However, depending on the quality of teacher's communication and interaction, different conditions for children's learning of contents are created in preschool (Sheridan et al. 2009b). Children's perspectives and learning, as presented in the studies in this book, are here analysed through the child dimension and are discussed in relation to perspectives on didactics and pedagogical quality.

Several studies in this book highlight that children's learning of democratic values in preschool is dependent on their participation and possibilities to influence ongoing activities and content. In Emilson's study (this book) the children are part of a pottery activity, influencing events and, together with their teacher, developing communication. The children are engaged, take the initiative to sing and talk. Another scenario is played out between three young children interacting around a Christmas tree (Johansson, this book). The children seem to have contradicting intentions and are active in defending their perspectives in confrontations that arise within the group. In these encounters moral values become visible through unexpected events and reactions from other children, forcing them to reflect and learn about what might be good and bad in relation to others. The study highlights how important it is for children to learn to express their own intentions and reactions in interplay with others through posture, words, emotions and gestures. Here it is not only the ability to be able to see and to read/interpret the face, expressions and gaze of the other, but also the empathic capacity to be moved by the others' distress and to be willing to respond to it in a positive way that are of crucial importance.

Elisabeth Mellgren and Karin Gustafsson's study of literacy (this book) shows that it is important that, early in life, children establish an approach to the development of literacy skills and are continuously exposed to texts, pictures, books, etc. in different communicative contexts. Participation in activities such as storytelling

and that teachers and children build on each other's communication and interaction are regarded as central for children's development of literacy skills. This approach to book reading highlights a progression in children's participation in storytelling that involves, progressively, *attention, acting, inference* and *integration.* These categories are hierarchical and relate to qualitative steps in the children's acting in relation to book reading situations. At first the child's participation is only expressed through his/her body language, eye movements and facial expression. However the child becomes progressively more active in the book-reading situation and, in the retelling of the story, makes some kind of extension in relation to the story while recounting what took place. The child starts to go beyond the 'here and now' and makes personal interpretations. In the final category children are engaged and interested in the storytelling and integrate the text and the artefacts in their own play. In order to be able to do this, children need to be read to individually and hear the same story many times. Further, the children need to focus their attention on the understanding of words, symbols and concepts and to develop their ability to focus on details and relations.

In a study of a circle-dance, Pramling and Wallerstedt (this book) highlight that children need to talk about their dancing and focus on specific features in the dance, both as meta-cognition and meta-communication. In order to learn the characteristic features of circle-dance, such as pairing, circling, the direction of the circling movement, the co-ordination of movements etc. the children in the study, after each practice session, made drawings of how they had danced. Drawing and talking about the dance helped the children to discern specific aspects in the dance, such as, the direction of movements, their own movements and in relation to other children's movements etc. The study highlights a change of focus in the children's attention. In the beginning of the dancing activity the children expressed the feeling that it was fun to dance. Over time, however, they came to focus more on movements, directions etc. Similarly, their drawings also became richer in representing features of the dance.

To summarise, in relation to previous research (Clark et al. 2006; Sommer et al. 2010; Siraj-Blatchford et al. 2008), the findings of the studies in this book contribute to the significance of sharing and understanding children's perspectives, intentions and expressions for meaning in relation to a specific content, a certain situation and a particular context. The meta-analyses show that the object of learning is intertwined with the act of learning and that, in ongoing situations, children learn about different contents while interacting with peers and teachers. For example, in Doverborg and Pramling Samuelsson's study (this book) a child realises/learns in the middle of the task he is given that making two lines can represent two animals. Analyses of such learning situations/processes are, in this study described, as *an evaluation of children's knowledge as a touch down in time.* Another way of describing this would be the documentation and evaluation of *a child's situated learning process* particularly in the sense that many of the studies in this book highlight a dynamic learning process/a change of understanding in a specific learning situation. The studies also reveal a progression in children's learning over time, as evidenced, for example, in the studies of children's participation in storytelling and circle-danc-

es. The critical point to emerge from these studies is that children can discern, focus on, experience variance and invariance in, manipulate, communicate, reflect on and evaluate the object of learning both on a cognitive and a meta-cognitive level.

The Dimension of Learning Contexts

The dimension of learning contexts highlights the observable quality in preschool. It shows how teachers, children and objects interact and, in practice, are related to one another. The focus of this dimension is on how contents, pedagogical processes, communication and interaction are formed to support children's learning and development, and to enable them to participate and influence ongoing processes and activities in preschool.

The structural quality in this dimension is constituted of space, materiel resources, formal teacher education, organisation, time, the structuring of the day, the planning of contents and activities, and teacher–child ratios, group size etc. Its content and process quality provides knowledge of preschool practice and demonstrates how contents and activities are integrated in pedagogical processes, communication and interplay, and the ways in which these are used to promote and challenge children's learning and development. It highlights children's participation and influence in practice and how their voices are heard and considered. The outcome quality within this dimension is constituted in the interaction between dimensions and aspects. For example, quality in interaction and relationships can be ascertained in relation to mathematics by the use of materials, the teacher's knowledge of numerical concepts, how they approach and introduce mathematical issues, children's learning in mathematics and the creation of an encouraging learning environment.

In this dimension a critical factor concerns the aspects involved, how they interact and relationships between them. Research, documentation and analyses involve, in this dimension, a question of taking all dimensions and aspects into consideration, integrating them with one another and the development of an understanding of children's conditions for learning and development in preschool (Sheridan 2009).

A considerable amount of research has been focused on the interrelation between preschool quality and children's learning experiences. Taken together they show that high-quality early childhood education can significantly benefit children's learning, academic achievements, self-esteem and attitudes towards lifelong learning (Burchinal et al. 2000; NICHD 1998, 2002, 2005; Peisner-Feinberg et al. 2000; Schweinhart et al. 1993; Sylva 1994; Sylva et al. 2004; US Department of Education 2000).

In a Swedish study on preschool quality (Sheridan et al. 2009) three qualitatively different learning environments were identified, namely *Separating and limiting environments*, *Child-centred negotiating environments* and *Challenging learning environments*. In this study learning environments of low, good and high quality were found, indicating that the children have unequal opportunities for learning in preschool. The findings demonstrate how low-quality preschools are characterised by few reciprocal encounters, poor interaction and communication between teacher and child, and few

opportunities for children's participation in and learning of different content. Further, in such preschools teachers seemed to focus on keeping control and maintaining order and it appeared as if, when engaged in activities, they and the children pursued parallel but separate paths that never actually merged. Teachers and children appeared to have different intentions and/or were unaware of each other's intentions, meaning that, as a consequence, they gained different experiences. In preschools evaluated as being of high quality, the learning environment seemed to be rich in the provision of challenges and learning opportunities. The teachers seemed to focus on children's interests, experience and knowledge-formation in relation to the overall goals for preschool. Both teachers and children appeared to focus on shared and reciprocal learning objects. The children participated in ongoing activities and the teachers interacted with them in the 'here and now' by being present both physically and mentally in communication about issues in the past, present and future (Sheridan et al. 2009b).

Preschool As a Learning Context: Analyses of the Findings of the Studies in This Book

Central aspects in the learning environment of preschool will now be analysed through the dimension of the learning context. Focus here is directed towards the social and emotional climate and the relation between content, activities, communication and interplay.

The studies in this book highlight how diverse learning environments communicate different values depending on the teachers' approaches and the social and emotional climate. In Emilson's study of a pottery-making situation (this book), teachers and children seem to create the learning environment together by sharing the same interest and making mutual choices and taking mutual initiatives. The atmosphere is pleasant and enjoyable. Emilson's other study on choosing activities (this book), demonstrates how a strict and controlling preschool climate creates a learning environment, in which children's voices seldom are considered. It is a climate of double and contrasting messages and one which confuses children. Instead of democratic values and participation, disciplinary values of exclusion and lack of influence seem to be mediated. In this environment children have, in reality, no choice and they probably learn that it is the teachers who decide. This can be related to Hellman's study of gender (this book), in which stereotyped gender norms were mediated in specific preschool situations and in a climate of stress.

Marie Bendroth Karlsson's study (this book) provides an example of a learning environment where few reciprocal encounters between teachers and children take place. In this study the teachers seem to use art as means of realising pedagogical intentions. The children in her study were given the dual tasks of listening to the music of Vivaldi and making a painting about springtime. This is an activity which means that the children are asked to make two separate translations; from music to words and from music to pictures. Bendroth Karlsson's analyses show that the teachers and the children seem to act in a way in which they pursue parallel paths that never actually merge with one another and either have different intentions or are unable to understand each other's intentions.

In other studies in this book the object of learning becomes visible even in the physical environment. For example, in Susanne Thulin and Gustav Helldén's study (this book) children examined how woodlice lived in a tree stump. In this way a scientific environment was created in which the children made ecological experiments and tried out their hypothesis and own ideas in a natural and meaningful situation. The teacher asked questions, confirmed the children's suggestions and statements and directed the children's attention towards the learning object, namely ecological relationships and processes. For example, by focusing the children's attention on the small black dots in the glass-jar where some of the woodlice were kept, and by asking, "why is it so dirty?", teachers were able to create a challenging learning environment. To create an environment in preschool that takes advantage of children's interest and natural curiosity about scientific phenomena requires concrete materials for experimentation, that teachers possess knowledge about the domain of learning (here, ecology), and that they have the competence to communicate ecological issues and processes with the children. This can be related to children's learning of mathematics, which requires, as Doverborg and Pramling Samuelsson (this book) make clear, learning environments in which children have opportunities to discern and use various aspects of mathematics in everyday life situations, communicate about them with other children and adults, and have the opportunity to document and reflect upon them.

In Pramling and Wallerstedt's study (this book) teachers' participation in a research project created conditions for children to learn about circle dances. As participants in the project the teachers read a book about dance education, became inspired and decided to try out the ideas with their own groups of preschool children, and created a learning environment, which made it possible for children to learn to dance. In this process the teachers' shared goals in relation to the dance activity, the support provided by the researchers and the fact that the dance activity took place in a naturalistic setting and was part of children's daily life experiences in school, were all regarded as important aspects.

To summarise, the studies collected together in this book demonstrate that, in working with literacy, narratives, mathematics and scientific issues, it is of fundamental importance that such activities take place in natural and meaningful contexts in which children can obtain concrete experiences, both in the 'here and now' as well as over time (Sylva et al. 2010; Sheridan et al. 2009b). Aspects of central importance are the social and emotional climate and the sharing of learning objects. Further, it is also important that the learning environment is created jointly by the teacher and child, with both of them taking initiatives and building on each other's ideas through communication and action.

Conclusions

In this chapter the conditions for children's learning of different content in preschool have been discussed from a didactic perspective and from the perspective of pedagogical quality. Four dimensions of quality were used as analytical lenses to

discern central aspects in, contents and learning objects, teachers' approaches, children's learning and the preschool context. Each of these aspects has been discussed in relation to each of the four dimensions. It is in the integration of the analyses of these four dimensions that the way in which these aspects are related to one another, and to conditions for children's learning of different contents in preschool, emerges.

This analysis of the findings of the studies that make up this book would appear to confirm the interrelation between preschool quality and children's learning experiences (Sylva et al. 2010). Taken together, the studies collected here demonstrate that high-quality teacher communication and interplay benefit children's participation, influence and lifelong learning of different content. The analyses indicate that preschool didactics develops in the relationships of dimensions and aspects, or, to put it another way, in the interaction and communication between teacher, child and learning objects. Thus it is the ways in which such interactions take place that determines the quality of the didactics.

For children to learn about different content, central and unique aspects need to be made visible and to form the focus of attention in learning situations. In order to become a point of focal attention, a learning object needs to be discerned, communicated, and, at the same time that it is studied in relation to other aspects, focus must also be directed to its central and unique aspects. If a learning object is implicit, as in the study of morality and gender, it can never form a subject for pedagogical interventions or become a shared issue between teacher and child. However, even if a learning object is the focus of attention, this in itself does not provide any guarantee, as demonstrated in Emilson's study of choosing activities (this book), that high-quality learning conditions will be achieved.

In research, the need to approach the perspective of the child is something that is continually emphasised (Pramling Samuelsson and Sheridan 2003; Sommer et al. 2010). To see what is important from the child's view, and, ultimately, to reach sustained shared thinking, teachers need to attempt to adopt the perspective of the child and share with the child both communication and the objects for learning (Siraj-Blatchford et al. 2002). The findings of the studies in this book demonstrate that it can be very difficult to reach a shared understanding of a learning object, even if the teacher, as in Wallerstedt's study (this book), tries hard and uses different strategies. Several studies in this book show that, in spite of sincere efforts, trying to understand children's perspectives, intentions and expressions for meaning in relation to a specific content and/or situation, a gap in understanding will nevertheless often remain between teacher and child. Even if it seems hard for teachers to interpret children's understanding and to reach shared and sustainable thinking (Siraj-Blatchford 2007) it is, from perspectives on didactics and pedagogical quality, nevertheless their responsibility to try. The studies in this book serve as admirable pointers as to how this can be done.

When the findings of the studies in this book are related to research on the quality of communication and interaction, two qualitatively different teacher approaches stand out (Sheridan 2001; Sheridan et al. 2009b). In the studies that focus on the choice of activity (Emilson, this book), morality (Johansson, this book) and visual arts (Bendroth Karlsson, this book), the teachers seem to focus on the activ-

ity itself without considering children's perspectives. In contrast, the teachers in Niklas Pramling and Elin Ødegaard's study (this book) seemed to be interested in the meaning the children abstracted through narrative experiences. These teachers were engaged, sensitive, social and creative and were willing to negotiate with and to challenge their children. Their approach can be related to the ways that teachers work in preschools recognised as having high quality (Sheridan et al. 2009). In these preschools, the teachers seemed, at the same time, to be both ahead of the children and present in the 'here and now' of the child's world. They seemed to have a mental and physical proximity that enabled them to confirm the child's experiences and to enable the child to pursue his or her own line of reasoning.

An important common factor uniting the studies in this book is that they all highlight the meaning of preschool didactics. Taken together they show how children learn about different contents through communication and interplay in everyday life situations in preschool together with teachers, who are part of their lives, and who share in the everyday experiences. The research conducted in this book captures children's learning processes both in specific situations as well as over time. The studies collected here provide knowledge of the relation between teachers' communication and interplay and the ways in which children reason at a particular point in time, but also how they can change their understandings. Thus it seems important that children are placed in positions where they can abstract meaning from their experience. Further, the studies in this book confirm the mutual interdependence of the act and the object of learning. They show that participation and influence are basic conditions for children to be able to speak their mind, to participate in both words and actions and to enable the co-construction of environments in which it is possible for children to communicate and learn about different content in everyday situations together with competent teachers who can scaffold and challenge their learning processes. However, perhaps more than anything else, the studies collected here highlight the importance of teachers' approaches to high-quality conditions for children's learning in preschool and that children's learning needs to take place in everyday situations.

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Chapter 13
Didactics in Early Childhood Education: Reflections on the Volume

Ingrid Pramling Samuelsson and Niklas Pramling

In this book, we have studied children's learning in naturalistic settings in preschools and primary schools. The children were 1–9 years of age and their learning was studied in regard to a variety of domains of knowing: mathematics, ecology, music, dance, narrative (language) and visual art. In addition, children's learning in a more encompassing form than one confined to particular domains of knowing has been studied (democracy, moral and gender learning). In this final chapter, we will point out some overarching themes and tensions that have come to the fore over the course of the empirical studies. What can we learn from these studies about children's—and, if to a lesser degree, the teachers'—learning in a goal-directed preschool? What features may constitute didactics for early childhood education?

Pointing Out and Linguistically Informing Experiences

As seen in several of the chapters of this book, the issue of giving the child access to a language for a domain of knowing is one of the key tasks performed by the teachers. Often children communicate through deictic references. Deictic references are ways of pointing out something in a situation (Davidson 2005; Ivarsson 2003; Rommetveit 1968). Some examples of such referencing would be to point or saying 'that', 'this', 'it', etc.). These references, whether performed physically (e.g. pointing with a finger) or by speaking, both presume the communicative partner (the interlocutor) to be present in the here-and-now. For example, reading words such as 'now', 'it', 'there', or 'she' does not make much sense outside the described situation and event. Hence, deictic referencing constitutes a local language. Helping the child appropriate communicative means that extend beyond the present situation are therefore an important task in learning (Pramling and Wallerstedt 2009). Consequently, in response to the children using such referencing, the teachers, as seen

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in several of the chapters of this book, verbalise what these references may denote. This is a kind of meta-level talk highlighted by developmental pedagogy research (Pramling 1983, 1990, 1996; Pramling Samuelsson and Asplund Carlsson 2007, 2008). Naming the referents of deictic referencing (e.g. what 'it' is, see Wallerstedt, this book) thus develops the child's speech and knowledge of a domain of knowing. It also serves as means of co-ordinating perspectives (i.e. sharing perspectives on what 'it' is, how 'it' should be understood in this context). As pointed out in the introductory chapter of this book, 'didactics' stems from the Greek word "*didaskein* (meaning pointing at, demonstrating, demonstrate) and the Latinised derivation from the Greek term techne, *ikk* [art]" (Nordkvelle 2003, p. 315, italics in original). Hence, didactics is fundamentally the 'art of pointing something out to someone' (cf. Wallerstedt, this book). The ability for two or more people to share attention on something 'third' could be considered a foundation for what we call an education (cf. Pramling and Pramling Samuelsson 2010; Tomasello 1999). However, and importantly, while simply noticing something is a prerequisite for developing knowing and skills, it is not sufficient to develop the kinds of insights and abilities promoted in institutional learning practices such as preschool and school. What are promoted in these practices are more abstract forms of knowing (cf. Mercer 1995). Hence, the purpose of a music class, for example, is not only that children should notice *that* different music sounds different (i.e. are non-identical) but also that they should develop insight into *how* the pieces differ (genre knowledge, differences in timbre between instruments, etc.). Such knowing is based on the appropriation of the semiotic tools of the domain of knowing and the ability to coordinate these with the music listened to, or, to use a different metaphor, to perceive the music 'through' (in terms of) these tools.

The Child's Perspective and Institutional Order

Institutions such as preschool and school are inherently normative in nature. They are society's way of ensuring that certain valuable knowledge is preserved in the growing population. This foundational fact also implies an interesting potential didactic dilemma in these institutions. While needing to connect to children's experiences in order to help them make sense of what they encounter in, for example, preschool, teachers will sometimes need to act contrary to children's experiences, interest and sense made (Johansson 2003). In fact, it could be argued that the purpose of institutions such as preschool and school is to make sure that all children are introduced to knowledge that they would not necessarily have met in any other setting. Hence, teachers cannot only build upon the interests of children but also need to make children interested in and become aware of what is unknown, novel or perhaps even (hopefully only initially) uninteresting to them. To make this phenomenon intelligible to children, it is necessary to coordinate the perspective of the teacher (the domain of knowing) with the perspective of the learners (the children).

The Coordination of Perspectives

A premise for this book is that education is not about the teacher telling the children 'how it is' and then the children understanding the phenomenon in the same way as the teacher. Rather, if we study children's sense-making as initially suggested by Piaget as an alternative to traditional testing practices, it becomes evident that what and how the child understands may differ significantly from the teacher's understanding (rather than simply knowing less of the same). This fundamental empirical fact must be managed in some way by teachers in the preschool groups or classrooms and by researchers interested in children's learning and development. For research, this implies the need to study children's sense-making in action rather than simply documenting their products. For educational purposes, this means that the teacher has the important task of managing the dilemma of attending to the child's understanding while, at the same time, trying to develop in the child a certain knowing or skill (as regulated by the curriculum). Consider the following empirical example from a project on children's learning in the arts, in this particular case in music. A child (Matilda) has listened to a piece of music. Afterwards, the teacher talks to her about what she has heard. Matilda tells a story about dolphins being chased by a shark. The teacher, whose intention is to support the child in discerning certain features of the music as such (e.g. instruments and form, how the music begins, develops, and ends), then asks Matilda whether one could say that the dolphins were any of the instruments. At first Matilda is reluctant to make this connection. However, the teacher continues to talk to the child about her story, using words to denote sequentiality (e.g. 'when') and instruments ('trumpets', etc.). Matilda suddenly seems to have an aha-moment, exclaiming that "Hm…then the shark is the trumpet!" (Wallerstedt and Pramling manuscript). In this brief example, we see several things that are relevant to our present discussion. First, there are two distinct perspectives in the conversation between the teacher and child. The teacher speaks from the perspective of the domain of music (instruments and musical sequential form) and the child speaks from the perspective of a fantasy narrative. The latter is the sense made by the child of what she has heard and what it made her think of. Second, the teacher is responsive to the child's perspective (sense made) but at the same time has an intention with this educational encounter. She wants to support the child in discerning certain musical features of the music listened to. Third, the teacher challenges and provides the child with a scaffold for connecting the two perspectives that are simultaneously at play in the conversation. Fourth, after some initial resistance and further thinking, through conversing with the teacher, the child is able to make this connection. Fifth, and importantly, neither the intention nor the result is for the child to replace her perspective and sense for the one suggested by the teacher. Instead, the child is supported in relating (coordinating) two different perspectives on the same thing, in this case a musical piece. This means that her knowledge is used as an asset in further developing her knowing. Supporting children in making such connections between what they know and what the teacher wants them to learn (cf. Mercer and Littleton 2007; Pramling and Wallerstedt 2009)

is one important task of the teacher. It also means that the child is in the process of appropriating a richer repertoire of ways of listening to and making sense of, in this case, music. One feature of being an educated person (cf. the German didactic concept of *Bildung* (Hopmann 2007)) is to be able to perspectivise phenomena in a variety of ways for different purposes and in different activities (cf. Pramling and Pramling Samuelsson 2010; Tomasello 1999).

Settings, Demands and Competences

Throughout the chapters of this book, children's learning has been studied in naturalistic settings. This was done for several important reasons. One was that in order to produce knowledge from research to inform early childhood education practice, such knowledge has to deal specifically with learning as it occurs in such settings. Another reason was that studying children in their everyday life gives them a better chance to realise their potential as knowledgeable and competent beings. Testing children's competences in experimental laboratory settings, as often is the case in developmental psychology research, means placing the child in an unfamiliar and strange situation where he or she is deprived of the everyday support in the form of others. Conducting research on children's learning and development needs to be responsive to and provide for the child's experience and knowing. This is an ethical issue. We need to study children in a way that allows them to come to the fore as competent, knowledgeable, rather than making children incompetent through placing them in un-familiar settings and task demands (for further discussions of how to access children's skills, see, e.g. Aronsson and Hundeide 2002; Donaldson 1978; Mauritzson and Säljö 2001). Besides being an ethical issue, studying children in naturalistic settings is a question of validity (ecological validity).

Emergent Skills?

In the research literature on children's development of literacy skills, the notion of 'emergent literacy' is a central one (Clay 1975). This term was introduced in response to the insight that there is no clear-cut distinction between what was earlier referred to as 'pre-readers' and 'readers' (Fast 2007; Gillen and Hall 2003; Nutbrown 2006). Rather, children increasingly appropriate the written language over time through participating in various activities and situations where this cultural tool is used, displayed, etc. The notion of 'emergent' skills is connected with the discussion we raised in the introductory chapter, with Bruner (2006) pointing out that what it means to be skilled in a domain of knowing is contested. What do we take as indicators of someone having begun to develop certain skills? From the analyst's perspective, we can see that some things children do are early examples of skills they will meet in a more formalised manner in school mathematics, for

example. At the same time, from the child's perspective, they may perceive what they do when they draw or scribble as reading or writing (Clay 1975). Again, this testifies to the inherent perspective-contingent nature of viewing knowledge and skills. What it means to be knowledgeable or skilful in a domain of knowing should be continuously open to reconsideration. In Wallerstedt's chapter (this book), the ability to communicate an 'informed listening' is suggested as a foundational skill in the domain of music. This has also been suggested by Kellett (2000), who, importantly, points out that seeing children's developing skills in this way rather than, as traditionally, noticing whether they can sing in tune (hit the right note) paves the way for a far more inclusive music education. The issue of what is considered knowing or skilfulness in a domain of knowing is of vital importance to researchers and teachers (studying, promoting and evaluating educational efforts) as well as to the children, the learners themselves ('Am I skilful, is this for someone like me?').

Perspectives and Domains of Knowing

In this book we have reported a number of empirical studies of children's learning and how teachers provide for this in a variety of domains of knowing. However, the relationship between a situation and a particular domain of knowing need not be clear cut. Consider, for example, the communicative exchanges between teacher and children reported in Thulin and Helldén's study (in this book) on ecology learning. In their data, children in addition to speaking about feeding, how animals keep warm, and other features of natural life, speak about what they observe in nature in terms of 'beautiful', 'Daddy beetle', 'daddy in the family', and 'mummy'. These communicative encounters between teacher and children may be seen as learning in the domain of ecology, as done by the authors, but might also be seen as emergent aesthetics or learning about gender issues and family relationships. Other examples from the empirical studies of this book may be found in Wallerstedt's chapter on music, where mathematics could easily have been focused upon, or Doverborg and Pramling Samuelsson's chapter on mathematics, where the child Hjalmar may not only be seen as exploring mathematical features, as discussed by the authors, but also as exploring aesthetic features (throwing things in the drawer which results in particular sounds) or bodily-motoric learning (being able to throw the object where he intends), and in terms of play. A teacher who wants to provide children with opportunities for the development of important mathematical skills needs to disambiguate this situation. To support, for example, the children in discerning mathematical features of the situation, the tools of this domain of knowing must be used in communicating about the objects. That is, the objects must be described in mathematical terms. If a teacher wants, instead, to support children's gender learning, it would be advisable to use other terms for communicating about the features observed. This means that it is important that teachers are clear about what they want the children to develop when supporting them in different activities. The same situations and objects can be used to support very different knowledge and abilities.

At other times, the intent of the teacher may be that the children should become aware of the fact that the same objects or phenomena may be seen and spoken about in different perspectives and terms, mathematical, aesthetic, etc. Phenomena and objects cannot only be understood in one way, and being able to perspectivise these in different ways for different purposes is in itself a valuable lesson in the child's development (Pramling 1990; Pramling and Pramling Samuelsson 2010). Hence, whether a teacher fixates a perspective through the use of a particular terminology, or not, is an important issue to consider, that needs to be in accord with the intention of the particular pedagogical practice in question.

Possibilities and Pitfalls

The kind of research studies we have presented in this book offers possibilities as well as potential pitfalls. We see this research not as traditional basic research, the results of which will then be transferred to practice, but as a kind of research where genuine basic research questions are studied in the context of preschool, which means that the results are immediately and inherently relevant to practice and available both to the teachers involved and to academics specialising in the field of early childhood education (ECE). Many studies in the field of ECE have their basis in child development, which is a discipline that is quite distinct from education, which explains why these two disciplines generate different kinds of knowledge. This means that there are important lessons to be learnt from both traditions but that these are based on different premises. An important premise of the studies of this book is that it is pivotal to study children in their everyday life in their preschool, focusing on children's learning through investigating interaction and communication between teachers and children, and between children. In many cases, studies of this kind have a dual aim, to generate new knowledge and to improve something in early childhood education practice. So, these studies may be viewed as contributing, on the one hand, to a new academic discipline (cf. below), on the other hand, to the development of a new approach in early years practice. This is, however, where the pitfalls are many.

Changing practice takes time and is difficult. One challenge to teachers in practice may be to make sense of a content-related pedagogy/content-related didactics, since it is based on another perceptive of the child and the role of the teacher in children's learning (see Fleer 2010, for a discussion) than adapting tasks and issues to an age-specific level of development, as is the case in, for example, 'developmentally appropriate pedagogy' (Bredekamp and Copple 1997). The whole field of ECE is very much based on traditional child development, with specific hierarchical levels of development as the base for children's learning. Today, however, this is a perspective that scholars in many countries are struggling to change (see, e.g. Pramling Samuelsson and Fleer 2008). Another pitfall is to understand the present book as advocating that preschools should become more like schools. This is not our intention. Neither should 'didactics' as used in this book be read in the Anglo-

American sense of the word (cf. the introductory chapter of this book). The features of didactics for ECE will be summarised below (with its emphasis on the learner's perspective, etc.).

Overarching Themes and Particular Knowledge

If we stay within early years practice, we find another issue that has to be discussed. The tradition of preschool, as it was developed from Fröbel (1826/1995), and what later became called 'social pedagogy', is to a large extent based on thematic work, that is, what may be called the 'project approach' (Katz and Chard 1989), 'pedagogy of situations' or 'themes' (Doverborg and Pramling 1986). What is characteristic of these, irrespective of label, is that they involve bringing a 'larger part' of the surrounding world into preschool practice. Examples of themes that can be taken up are: the shop, the forest, the lake, the changing seasons, the family, various professions (the farmer, the fire-fighter, the nurse), etc. A basic idea is to work with something that is authentic, which is presented in a holistic way, integrating both different contents and methods (Doverborg and Pramling 1986). If, for example, the teacher and children are working with the theme of 'the lake', they may make an excursion to a lake, read stories where lakes occur, sing songs about lakes (water, animals living there, etc.), paint or do other artwork or dramatise something in connection with the theme. Other premises for this way of working are that children need to use all their senses when learning and to be active in doing concrete things (the latter being heavily emphasised in much pedagogy with young children).

This kind of preschool pedagogy should still be valid practice, and does not conflict with what we have seen illustrated in the different studies of this book, even if it may initially seem so. The studies presented here have focused on minor aspects within a particular domain of knowing (the chapters on narrative, gender, and ethics being the exceptions). But what we want to make clear is that within a theme there is always something specific that could be focused on in every interaction with a child (to continue our example of the lake, the children can be made aware of what animals can live in the lake, how the water in the lake differs from the water in the sea [sweet/salt], where the water for the lake comes from, etc.). When the teacher thinks about such features of the theme, he or she can also provide ample opportunities and support for developing these insights in children. What is focused on in a communicative exchange can vary, but whatever the theme, its scope or depth, it is important that the teacher is clear about what the intention of an activity is, from his/her perspective as well as from the children's perspectives, and how these perspectives may be coordinated (cf. Bendroth Karlsson's chapter in this book, where these perspectives remain discrepant).

It is, however, also important to state that what we are talking about here is a didactic approach to children's emergent understanding of different aspects of the world around them and how we may encourage children to take part in and relate to different situations and other people (Pramling Samuelsson and Asplund Carls-

son 2007, 2008). Within this frame there are many opportunities to provide for children's development, but there are also other important aspects of early childhood education that we do not study in this book, such as care, routines, friendships between children, organisation of the day, etc. Our aim is to contribute to one important feature of early childhood education, that is, how teachers facilitate the development of children's knowing.

Children's and Teachers' Learning

In all the chapters of this book except Johansson's, the communication between children and teachers has been in focus. This does not mean that we disregard the fact that children also learn from each other. However, if we want to develop didactics for children's learning in preschool, based on curriculum goals, the teachers have to take on the responsibility for guiding children towards these intentions.

One feature typical of the studies presented here is that the focus has been in children's sense-making of the things presented to them, for example, in ecology (Thulin and Helldén), literacy (Mellgren and Gustafsson), art (Bendroth Karlsson), etc. In the process of focusing on how children relate themselves to different learning objects, that is how they discern features of the domain of knowing, teachers can also learn about themselves and the opportunities for learning they provide (see particularly, Pramling and Wallerstedt's, and Wallerstedt's chapter). The teachers can learn what is critical from the children's points of view and their own role and importance to the communicative negotiation of sense. Hence, by being sensitive to children's sense-making and dealing with different tasks or questions, the teachers can also learn about their own participation in children's sense-making.

In all brevity, we would also like to mention video recordings as an important tool in conducting studies of the kind presented in this book. Using video recordings is important not only for obtaining relevant data for research purposes but is also an excellent tool for making teachers aware of themselves and their involvement in children's worlds (Pramling Samuelsson and Lindahl 1999). The teachers may study whether they did in fact provide opportunities and scaffolding for children to discern particular features of a domain of knowing or not, as they intended to.

Play and Learning

Today people often appear to be worrying about preschool turning into school. One reason for this worry is that many countries throughout the world have developed curricula for preschool and other early childhood settings, with contents related to school subjects (Oberheumer 2005). This worry is often explicitly or implicitly related to a fear that play will disappear from preschool and be supplanted by lessons (Olfman 2003). Play is and has been one of the hallmarks of early education since

its inception in the nineteenth century (Fröbel 1826/1995). There are also occasional 'alarm reports' about how badly children do in, for example, early mathematics since play is no longer on the agenda (Miller and Almon 2009). Studies have shown how children do better in preschools that are play-orientated than is school-like programmes (Marcon 2001; Sylva et al. 2004). So what does this mean in relation to the approach we advocate in this book?

Our point of departure, as we have already mentioned a few times throughout this book, is to develop a didactic approach to early childhood education, based on empirical research and theoretical assumptions about communication and interaction as key factors in children's learning. It is also important to realise that play and learning share several decisive features. In their meta-analysis of theories of, and research on, play and learning in early childhood education, Pramling Samuelsson and Asplund Carlsson (2008) point out three similarities between play and learning: "(1) children's experience as a point of departure, (2) discernment, simultaneity and variation as key-factors and (3) meta-cognition, meta-cognitive dialogues and meta-communication as crucial issues" (p. 631). The first feature, children's experience, is managed in a concrete manner in learning situations when attending to the learner's perspective. The second feature, discernment and variation, has been used in several of the studies in this book (Doverborg and Pramling Samuelsson; Wallerstedt). Finally, the third feature, meta-level talk, has also been emphasised in many of the studies we have presented (see e.g. Pramling and Wallerstedt's chapter). These are features characteristic of children's learning as well as of their play.

Pramling Samuelsson and Asplund Carlsson (2008) presented the notion of 'the playing learning child' to try to draw attention to the fact that young children do not separate play from learning. In a study investigating whether play and learning could be integrated in a goal-directed practice, Johansson and Pramling Samuelsson (2007) found that the answer to that question depends upon the attitude and actions of the teacher. First, it depends on the teacher's perception of play and learning, whether he or she can see the play dimension in learning and the learning dimension in play. Second, it depends on whether the teacher can allow the child to take the initiative and contribute something from his or her perspective. Third, it depends on whether teachers can accept that learning and fantasy can go hand in hand and do not have to be differentiated and relegated to different times of the day or situations. They also suggest that the integration of play and learning is contingent upon the way the teacher interacts and communicates with the children (Johansson and Pramling Samuelsson 2009).

What Do Teachers Need to Facilitate Children's Learning?

If seen in the perspective developed in this book, teachers need specific knowledge and to know how to relate themselves to children, based on attitudes formulated in the articles in the UN Convention on the Rights of the Child (UN 1989). This includes that education should be based both on a child perspective and the child's

perspective (see, Sommer et al. 2010, for an extensive discussion). This means creating an early childhood education that is not only child-centred but also involves listening to and respecting every child's experience as meaningful for the child. As we have seen in the chapters of this book, there is a willingness to take the child's perspective. Through this intent, the researcher as well as the teacher can gain an insight into the child's understanding of something. Being able to take the child's perspective is founded both on an attitude and a skill. The attitude is formed by what one believes a child to be capable of (Johansson 2003; Lindahl 2002; Sommer 2005) and an interest in understanding the child's meaning-making. The skill is a question of having developed a capacity to communicate and get children to express their ideas. A teacher could practise this skill through conducting dialogues/open interviews and recording and analysing these (Doverborg and Pramling Samuelsson 2000). When doing so, teachers are often astonished by how difficult it is to be there on the level and content the child is talking about, and really achieve a shared sustainable thinking (Siraj-Blatchford 2007), that is, when the child and the teacher share attention in their communication. We claim that this is the basis for a developmental pedagogy, and necessary for all didactics with young children (cf. Pramling and Pramling Samuelsson 2010; Tomasello 1999).

In addition to being able to relate oneself to children in communication and interaction, the teacher has to have knowledge about the content (domain of knowing) worked on, as well as more specific 'parts' of that domain (the objects of learning within that content). Consider, for example in Doverborg and Pramling Samuelsson's chapter on mathematics in this book, how different notions are focused on as learning objects in the different studies. These learning objects are, however, all part of the content of early mathematics as formulated in the Swedish curriculum (Promemoria 2010, U2010/4443/S). Another example could be Mellgren and Gustafsson's chapter on emergent literacy. In that domain a teacher could variously focus on vocabulary, narrations, descriptions, language structure, phonology, graphic symbols and many other features. These are all aspects that contribute to what it means to be literate, and therefore aspects that should affect the didactics of this domain. It is important not to lose track of this overarching form of knowledge, for example literacy, but in each situation with the child, something needs to be in focus or be seen as the figure while other aspects remain in the background of attention, so that children are scaffolded in discerning a particular feature.

There are certain aspects or features within all areas of knowledge or contents of early childhood education that each teacher has to know about in order to become didactically skilful. This includes what are, in some chapters of this book (see also, Pramling Samuelsson and Asplund Carlsson 2008), referred to as the object of learning (what children should become aware of or discern) and the act of learning (how this awareness or discernment could be brought about). It is, however, decisive for the development of this kind of didactics that the content as such, and by that also the learning object, is what is critical/foundational to learning within a particular area, and not the traditional school subject. This is where we argue that studies like the ones presented here can contribute to developing didactics for early years based on children's experiences.

Some Critical Features of Didactics for ECE

In summing up what we have learnt from the empirical studies presented in this book and the theoretical notions put to work in these, 'didactics' for early childhood education may be characterised in the following way:

- An interest in and the intent to build upon the child's perspective (Sommer et al. 2010). This means, among other things, that the child is given agency in his or her own learning.
- The importance of establishing and maintaining 'temporarily sufficient intersubjectivity' (Rommetveit 1974). This is what allows interlocutors (e.g. an early years teacher and a child) to 'go on' with a joint/mutual activity. The importance of this intersubjectivity further implies the need to verbalise, since an utterance such as 'it', 'there', 'they' and other forms of deictic reference (Davidson 2005; Rommetveit 1968) such as pointing and gesturing often lead to 'illusory intersubjectivity' (Ivarsson 2003). In other words, these kinds of references allow interlocutors to continue talking with one another while in fact pursuing (more or less) distinct communicative projects without this necessarily being visible to the interlocutors themselves (at least not until one says something incomprehensible or apparently irrelevant to the other). Hence, making explicit what 'it', etc. is, or what is pointed at (and how this is understood), is of pivotal importance in establishing 'temporarily sufficient intersubjectivity'.
- The importance of establishing an education from a series of events (cf. Mercer 1995, 2008). This means that a key task for the teacher is to support the child in connecting and re-connecting the novel to the previous (established, known) experience as well as to the coming one, that is, connecting events, activities and knowledge into a more or less continuous learning experience.
- A didactic or an educational encounter is not any meeting between people, even if every such meeting is potentially beneficial to one's learning. To qualify as an educational encounter (didactics), in our sense, is that teachers introduce children to and scaffold their appropriation of the 'tools of the domain' (which may be more or less specific to a domain of knowing), particularly categories (abstract generalities, patterns) and distinctions (differences). Our knowing is fundamentally built on and consists of discursive patterns in the form of similarities (categories) and differences (distinctions). How are phenomena similar and how do they differ?
- The dual communicative nature of didactics. In addition to the important functions/roles of verbalisation (as already listed), at least one further role needs to be mentioned: the importance of communication and meta-communication (meta-level talk). This means that it is important not only to verbalise but also to speak about what and how one does while (and before/after) learning something (Pramling 1983).
- An activity that is both goal-directed and responsive to the child's perspective (cf. above). This goal-directedness may be specific or more general, for example, it might involve developing an appreciation in children of the great variety of life

in nature (see Thulin and Helldén, this book), narrative communicative genre skills (see Pramling and Ødegaard, this book), or the discernment of time/metre in music (which is in itself a part of an overarching interest in developing in the child an 'informed' listening skill; see Wallerstedt, this book).

- Finally, this notion of didactics recognises and emphasises that education is at heart of a communicative nature. An important meta-comment here is that communication is understood in the original sense of the word, to 'make common' (Barnhart 2000, p. 195), not as 'sending' information from one to the other (see Reddy 1993, on communication metaphors and their practical implications). This 'make common' requires some coordination between perspectives (e.g. the child's and the teacher's/the established knowledge of a domain).

Final Words

In this book, a number of scholars in the field of early childhood education and children's learning have reported, analysed and discussed the opportunities and scaffolding provided by teachers in goal-directed educational practices (preschool and primary school) and how children take on and make sense of these opportunities. Through presenting the continental European notion of didactics (and how it fundamentally differs from an Anglo-American concept by the same name) to an international readership, we have tried to present not only new knowledge on these matters but also somewhat of a new language for communicating about these matters. In analogy to acronyms such as ECE (early childhood education) and ECEC (early childhood education and care), the issues we have been concerned with in this book could be labelled ECED, that is, 'early childhood education didactics'. If children all over the world are to benefit from early childhood education, skilful teachers are needed. Educating skilful teachers requires empirical research into children's learning in such naturalistic settings as described here and in a language that practitioners and researchers can use to communicate about these matters. This book has been an attempt at contributing to these objectives.

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