

Educational language practices and language development in Early Childhood Education and Care

by

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Summary

The overarching aim of the study is to examine staff educational language practices with children under 3 years in high-quality early childhood education and care (ECEC), and associations between ECEC quality and language development. The main research question is: *What characterises educational language practices in Norwegian ECEC measured to high quality, and what are the associations between quality of the language-learning environment and vocabulary development?* This question is explored to get a more comprehensive understanding of how to support early language development in ECEC.

The theoretical framework builds on sociocultural perspectives on learning and social pragmatic perspectives on language development. This approach implies an understanding that adult-child interactions drive child development and contextual aspects (e.g., culture, tradition, and languages) are influential. Research on educational language practices and language development with children in ECEC under 3 is scarce (Dickinson, 2011; Melhuish et al., 2015). In a Norwegian and Nordic context, there are studies on staff-child and peer-to-peer interactions; however, few focus on educational aspects related to children's learning processes (Bjørnestad, Pramling Samuelsson, & Bae, 2012).

The aim of this study is to address the research gap using a multimethod approach focusing on 1) how preschool teachers describe planning, implementing, and assessing work on language; 2) staff-child verbal interactions across different situations; and 3) the associations between quality of language-learning environment and vocabulary development.

Overall, this study contributes with three main findings. First, educational language practices with children under 3 in high-quality Norwegian ECEC are characterised by a child-centred holistic approach that provides a rich and meaningful language-learning environment

(Article 1 and Article 2). Second, educational language practices in high-quality ECEC with children under 3 years are characterised by the use of diverse and situated strategies for supporting language learning (Article 1 and Article 2). Third, language-learning environments for children under 3 characterised by staff being responsive to children, extending children's communication, and facilitating conversations with children are related to vocabulary growth from 3 to 5 years (Article 3).

Based on the findings, three topics are addressed in the discussion section. First, characteristics and possible challenges of child-centred educational language practices are discussed. The main strategy of providing rich and varied vocabulary is seen in relation to the child-centred approach. Second, contextual aspects influencing educational language practices are discussed. Characteristics of practices during free play, mealtime and circle time are discussed in relation to supporting language learning in an ECEC context. Third, aspects of the language-learning environment, and the measures used, are discussed in relation to early language development.

In total, these findings contribute to the discussion of how to develop high-quality ECEC for children under 3. This study shows the complexity of the subject and the need for highly skilled staff working with children under 3. This study adds to the research highlighting the importance of providing a high-quality language-learning environment in children's early years.

Table of Contents

Acknowledgements.....	iii
Summary.....	v
1 Introduction.....	1
1.1 Aim and research questions	2
1.2 Quality in early childhood education and care (ECEC)	5
1.3 Gode barnehager for barn i Norge / Better provision for Norway's children in ECEC (GoBaN/BePro)	7
1.4 The Norwegian ECEC context.....	8
2 Theoretical framework.....	11
2.1 Sociocultural approach to learning and development	11
2.2 Social pragmatic approach to language learning.....	13
2.3 Early language development (0–6 years).....	16
2.4 Educational language practices in ECEC.....	18
3 Research	21
3.1 Quality of educational language practices in ECEC	21
3.2 ECEC quality and language development.....	23
4 Method	25
4.1 Design	25
4.2 The qualitative case study	28
4.2.1 Selection of cases and participants	28
4.2.2 Data collection	31
4.2.3 Analytical strategies	34
4.3 The quantitative longitudinal study.....	36
4.3.1 Sample.....	37
4.3.2 Procedure	37
4.3.3 Analytical strategy.....	40
4.4 Ethical considerations	40
4.5 Validity and reliability	42
5 Results.....	47

5.1	Article 1. Educational language practices described by preschool teachers in Norwegian kindergartens	47
5.2	Article 2. Language-learning environments and educational language practices in groups of children aged between 1 and 3 in Norwegian ECEC	48
5.3	Article 3. ECEC quality and vocabulary development in Norwegian ECEC	49
5.4	Summary of the main findings	49
6	Discussion	51
6.1	Diverse and child-centred educational language practices.....	51
6.2	Contextualised educational language practices.....	54
6.3	Quality of language-learning environment and early language development.....	57
6.4	Implications for practice	59
6.5	Limitations and future research.....	60
7	References	63
	Appendices	79
	Appendix 1 – Information letter including declaration of consent.....	79
	Appendix 2 – Confirmation letter NSD	83
	Appendix 3 – Interview guides	84

Table of Figures

Figure 1 – Design of the study	27
Figure 2 – Detailed overview of design, methods, and analytical strategy in the different parts of the thesis	27

List of Tables

Table 1 – Language in Framework Plan and Guide	10
Table 2 – Information on participating ECEC centres and child groups	29
Table 3 – Detailed timeline of the data collection	31

Table 4 – Detailed information on video observations included	34
Table 5 – Focuses, empirical data, and units of analyses in Article 1 and Article 2.....	36

Appendices

Appendix 1 – Information letter including declaration of consent	79
Appendix 2 – Confirmation letter NSD	83
Appendix 3 – Interview guides	84

1 Introduction

The quality of early childhood education and care (ECEC) and children's early language development has been a topic in research for decades (McCartney, 1984; National Institute of Child Health and Human Development [NICHD], 2000; Sylva et al., 2006). The significance of high-quality ECEC for children's language development is now widely acknowledged (Melhuish, 2011; Zaslow, Martinez-Beck, Tout, Halle, & Ginsburg, 2011). Studies within the field of ECEC and the field of early language development have shown that the quality of staff-child interactions and language-learning environments matters for early language development (Hoff, 2006; Melhuish, 2011; Snow, 1999). Language has been given much attention in research because of the importance of language skills for children's well-being in the here and now (e.g., participation in play) and for later educational attainment (e.g., reading skills) (Dickinson & Porche, 2011; Storch & Whitehurst, 2002).

In Norway, research has shown that attending high-quality ECEC is beneficial for children's development (Havnes & Mogstad, 2015; Lekhal, Zachrisson, Wang, Schjølberg, & von Soest, 2011). Despite the importance of quality, findings from the large-scale research project *Gode barnehager for barn i Norge* (GoBaN) indicate that the quality of toddler care in Norway varies (Bjørnestad & Os, 2018). Research combining results from large-scale studies and small-scale case studies has been valuable for enhancing the quality of practice and policy (Melhuish, 2016; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2010). This study combines a qualitative, in-depth approach with longitudinal data from GoBaN to get a comprehensive understanding of how to support language learning in the early years.

The majority of the ECEC research on language and language-learning environments in a Norwegian context has included children over 3 (Sandvik, Garmann, & Tkachenko, 2014). Children under 3 have gained

Introduction

more attention in research and policymaking because of the increased enrolment of the age group in ECEC over recent decades. A review of the research has shown that there is an overall focus on everyday life, including staff–child and peer-to-peer interactions, with less focus on educational aspects related to children’s learning processes (Bjørnestad et al., 2012). Internationally, research on children under 3 often includes aspects of sensitivity, responsiveness, and attachment in relation to social and emotional development (Dalli et al., 2011). This study takes an educational approach, focusing on how children’s early language learning is supported in ECEC. The concept of educational language practices is used to focus on core aspects of the early childhood educator profession (i.e., planning, work, and assessment).

1.1 Aim and research questions

Since research on educational language practices with children under 3 is scarce, the overarching aim of this study is to add knowledge to this area and to the area of quality in ECEC. The main research question is:

What characterises educational language practices in Norwegian ECEC measured to high quality, and what are the associations between quality of the language-learning environment and vocabulary development?

The main research question implies both exploration of educational practices in settings with children under 3, and explanation of associations between language-learning environments and children’s vocabulary development. A research design combining qualitative and quantitative approaches was chosen to get a more comprehensive understanding of educational language practices with children under 3 in high-quality settings and how the quality of ECEC is related to early language development.

Introduction

The first part of the research question focuses on what characterises educational language practices (defined as practices concerning planning, work, and assessment) in child groups with a high-quality language-learning environment. The second part builds on the first by focusing on longitudinal associations between the quality of the language-learning environment and children's vocabulary development. The thesis is a three-part study comprising three articles specifically focusing on 1) preschool teachers' own perspectives on their work on language, 2) the quality of staff-child interactions, and 3) the effect of the quality of the language-learning environment on vocabulary development.

The first part-study presented in Article 1 (Hansen & Alvestad, 2017) relates to the first part of the research question. The focus is on Norwegian preschool teachers' perspectives on how they promote and support language and language development in child groups with children under 3 measured as high-quality on the subscale 'Listening and Talking' in the Infant/Toddler Environment Rating Scale-Revised (ITERS-R; Harms, Cryer, & Clifford, 2006). The research question is: *What characterises educational language practices as described by preschool teachers in kindergartens with high-quality scores on ITERS-R?* We chose a qualitative case study design to gain insight into the preschool teachers' perspectives on and experiences with educational language practices. The findings indicated that preschool teachers describe a holistic dialogical approach to educational language practices, where varied social settings and strategies are used for language learning and aspects of planning and assessment are seen as important. The preschool teachers highlighted the importance of children's language learning during day-to-day activities.

The second part-study presented in Article 2 (Hansen, accepted) relates to the first part of the research question and builds on the findings from the first part-study (Hansen & Alvestad, 2017). The focus is on staff-child verbal interactions to examine the language-learning environment

Introduction

and educational language practices in child groups with children under 3 measured as high quality. The research question is: *What characterises staff's verbal interactions with children in four toddler groups?* In this qualitative observational study, the empirical data consists of 98 video observations of staff-child verbal interactions. Findings from this study indicate that educational language practices in high-quality language-learning environments are characterised by responsive staff who use a rich and contextual language and, to a certain degree, expand on children's utterances and explain meanings of words and/or make logical connections. Moreover, the findings indicate that educational practices vary depending on contextual aspects. These findings show the importance of staff knowledge and skills in interpreting and following up on children's attempts to communicate in order to take advantage of valuable child-initiated learning situations.

The third part-study presented in Article 3 (Hansen & Broekhuizen, in review) relates to the second part of the research question. The focus is on associations between the quality of the language-learning environment in ECEC and vocabulary development from 3 to 5 years. The hypothesis was that the quality of language-based interactions and provision of language-learning opportunities (i.e., domain-specific quality aspects) predict vocabulary development. Multilevel analysis showed that the quality of the language-learning environment experienced in toddler groups was associated with verbal ability at 5 years, when controlling for verbal ability at 3 years and the quality experienced in kindergarten groups at 5 years. These results indicate that toddler language-learning environments characterised by responsive staff that have many conversations, use a wide range of words, and add to children's utterances promote vocabulary development.

These findings indicate that educational language practices in high-quality child groups are described by preschool teachers as child-centred and holistic. Staff verbal interactions are characterised by being responsive, using a rich and contextual language, and to a certain degree

expanding and explaining based on children's utterances. Moreover, the findings show that educational language practices characterised by responsiveness, extended talk, and facilitating conversations experienced in toddler care promote vocabulary development.

1.2 *Quality in early childhood education and care (ECEC)*

ECEC quality is a complex and multifaceted construct used in policy, research, and practice with different purposes and understandings. In this study, ECEC quality is understood and operationalised in line with research using structural quality, process quality, and result quality. (Howes et al., 2008; Sommersel, Vestergaard, & Søgaard Larsen, 2013; Sylva et al., 2006; Zaslow et al., 2011). Structural quality is relatively stable over time and is often measured in terms of group size, adult-child ratio, staff training and qualifications, curriculum, wages, and staff stability. Process quality refers to children's daily experience, and variables included are aspects of adult-child interactions, communication, and responsiveness. Measuring process and structural quality can give some indications on associations between different aspects of quality and the level of quality. However, the main interest is often in the relationship between process and/ or structural quality and result quality (i.e., child outcomes). There is an assumption of a linear relationship: structural quality → process quality → result quality. The discussions are on which aspects of structural quality have an effect on process quality, and how structural and process quality relate to child outcomes (e.g., mediating functions) (Cassidy, Hestenes, Hegde, Hestenes, & Mims, 2005; Phillipsen, Burchinal, Howes, & Cryer, 1997; Slot, Leseman, Verhagen, & Mulder, 2015). The hypothesis in this study is that higher process quality in the early years, including language-based interactions and provision of rich language-learning opportunities, contributes to children's language learning (i.e., result quality).

Introduction

Process quality is often measured by global observational tools such as the Environment Rating Scales (ITERS-R, ECERS-R) and the Classroom Assessment Scoring System (CLASS Infant, Toddler, Pre-K). These rating scales are widely used to monitor and evaluate the level of quality and examine relations between structural and process quality (e.g., Bjørnestad & Os, 2018; Manning, Garvis, Fleming, & Wong, 2017; Vermeer, van IJzendoorn, Cárcamo, & Harrison, 2016). Moreover, the scales are used to investigate the effect of quality on child development (e.g., Burchinal et al., 2000; Eliassen, Zachrisson, & Melhuish, 2017; La Paro, Williamson, & Hatfield, 2014; Mashburn et al., 2008). Since these are widely used in policy and research, there are discussions related to the validity of the measures in terms of measuring different levels of quality, measuring different dimensions of quality, and the predictive effect on child development (e.g., Bisceglia, Perlman, Schaack, & Jenkins, 2009; Cassidy et al., 2005; Gordon et al., 2015; Perlman, Zellman, & Le, 2004; Zaslow et al., 2011).

The environment rating scales used in this study are developed to provide a measurement of a global quality, with a focus on interaction, materials, and activities (Cryer, Harms, & Riley, 2003; Cryer, Harms, & Riley, 2004; Vermeer et al., 2016). More detailed, the perspective on quality includes child-initiated activities and age-appropriate materials that foster children's solitary and social play and a 'whole child' approach that integrates physical, emotional, social, and cognitive development. In terms of educational practices, highly trained teachers need to facilitate development by being warm and responsive to children's age-related and individual needs (Dickinson, 2006; Gordon, Fujimoto, Kaestner, Korenman, & Abner, 2013). However, the scales are criticised for emphasising the physical environment and safety aspects and missing out core aspects of process quality (Perlman et al., 2004). Qualitative in-depth studies have contributed more detailed descriptions and better understanding of educational practices in high-quality settings. The qualitative part of the EPPE study has, with the empirically developed

Introduction

concept ‘sustained shared thinking,’ informed policy and practice (Melhuish, 2016; Siraj-Blatchford et al., 2003).

The perspective on quality applied in research has influenced policy. ECEC quality is emphasised in the Organisation for Economic Co-operation and Development’s (OECD) *Starting Strong* publications (OECD, 2001, 2006, 2012, 2015b, 2017). The argument is that high-quality ECEC matters for children’s well-being here and now and for long-term learning and development. Moreover, there is an argument that an increase in public spending on ECEC will lead to better social and economic development for the society as a whole. ECEC quality is highlighted in several national governmental white papers (Barnefamiliedepartementet, 1999; Kunnskapsdepartementet, 2009, 2013, 2016). Quality came into focus in the late 1990s (St. meld. nr. 27 1999–2000 ‘Barnehage til beste for barn og foreldre’), and was again actualised at the end of 2000 after universally accessible and subsidised childcare was achieved (for discussions on quality in a Norwegian ECEC context, see Bjørnestad, Tuastad, & Alvestad, 2017; Gulbrandsen & Sundnes, 2004). In the most recent white paper (St. meld. nr. 19 ‘Tid for lek og læring’), the Norwegian government’s overall goal is defined as providing all children with high-quality ECEC, with a special focus on the content and the work on a new framework plan to ensure quality (Kunnskapsdepartementet, 2016). The focus on curriculum to enhance and secure the quality of Norwegian ECEC is also present in the OECD’s review of Norway (OECD, 2015a).

1.3 *Gode barnehager for barn i Norge / Better provision for Norway’s children in ECEC (GoBaN/BePro)*

This study is part of the national research project *Gode barnehager for barn i Norge* (GoBaN – www.goban.no). This project is the first large-scale longitudinal study in Norway to systematically investigate the

short-term effect of early years conditions at ECEC and home related to children's social and cognitive development. The project is following the career paths of 1131 children from a wide range of social and cultural backgrounds in kindergartens with differing organization, and focuses specifically on the quality and effectiveness of ECEC.

I would like to highlight three aspects that have been important for conducting this PhD study as a part of the GoBaN project. First, being part of the project gave access to empirical data that was crucial for conducting this study. The GoBaN data was used in the selection of participants in the qualitative part, and longitudinal data from the project was used on quality and language development in the quantitative part. I think this study shows the potential of using observational data in multiple ways to enhance our knowledge on ECEC quality. Second, being involved in the data collection has been a unique experience in understanding how to design and conduct large-scale research projects in the field of ECEC. Direct involvement in coordinating and collecting data gave an in-depth understanding of the data included in the project, which was vital for using the data effectively. Finally, being part of a knowledge community including fellow PhD students and international and national experts on the field of ECEC has strengthened this study. Sharing experiences and getting feedback on the study as it developed contributed to my development as a researcher.

1.4 *The Norwegian ECEC context*

Today the vast majority of children 1–5 years of age attend ECEC in Norway (91.3% in 2017), and 82.5% are enrolled at 1–2 years (Statistics Norway, 2017, 2018). The high enrolment rate has shifted the political focus from providing universally accessible ECEC to its content and quality (Gulbrandsen & Eliassen, 2013; Kunnskapsdepartementet, 2016). Supporting children's language development is emphasised as one of the core tasks, and head teachers report that work on language has

Introduction

high priority and is increasing (Gulbrandsen & Eliassen, 2013; Østrem et al., 2009).

In terms of structural aspects, there are regulations for the number of pedagogical leaders (i.e., trained preschool teachers) per child. In child groups with children under 3, the current regulations require one pedagogical leader per 7–9 children, and one pedagogical leader per 14–18 children over 3 when children attend more than 6 hours per day.¹ However, there are no regulations for group size or a general staff–child ratio today. Age-based grouping is most common, and children attend a toddler group when 0–2 years, and kindergarten group when 3–5 years (Gulbrandsen & Eliassen, 2013). Based on the regulations on pedagogical staff, the mean group size for children under the age of 3 is nine, and for children over 3 years is 18, giving one pedagogical leader per group (Utdanningsdirektoratet, 2018). The pedagogical leader is given the responsibility to lead the educational work in accordance with the national curriculum. In addition, there are usually two assistants per group who are either vocationally trained or have no specific training in the field of early childhood.

The national curriculum Framework Plan for the Content and Tasks of Kindergarten (Kunnskapsdepartementet, 2011) is a regulatory document in accordance with the Kindergarten Act regarding kindergartens' educational orientations.² The framework plan is an integrated, play-based curriculum promoting a unified approach to learning, and it provides guidelines for fundamental values, content, and tasks (Lohmander et al., 2009; OECD, 2015a). Language is described as a key aspect, and interaction and dialogue are presented as central components in promoting language development (Kunnskapsdepartementet, 2011).

¹ New regulations on staff–child ratio were implemented in August 2018; however, I report based on the regulations that were current when the data was collected.

² The national curriculum was revised in August 2017, but I report based on the framework plan that was current at the time the data was collected.

Introduction

The importance of early and good language stimulation and all children experiencing a rich and varied language environment is highlighted (Kunnskapsdepartementet [KD], 2011, 2013). The Directorate for Education and Training published the guide ‘Language in Kindergarten’ as an extension to the framework plan (Utdanningsdirektoratet [Udir], 2013). The aim of the guide was to add to the knowledge and skills of the staff in ECEC. In it, systematic language stimulation that must be knowledge-based is highlighted as one of the everyday duties of staff in the Norwegian kindergarten. To create a good environment for language stimulation, the staff must use language as they interact with the children. The intention in the framework plan is that the educational work on language should be a part of the overall work on providing children with a supportive learning environment. Based on a review of two central policy documents (see Table 1), there is a tendency towards a more explicit systematic language stimulation characterised by being knowledge-based, reflective, planned, and coherent.

Table 1 – Language in Framework Plan and Guide

Framework Plan (KD, 2011)	Guide (Udir, 2013)
Kindergartens must ensure that all children must have a rich and varied language environment at their kindergarten.	Systematic language stimulation is one of the everyday duties of a kindergarten, and it must be knowledge-based, reflected, planned, justified, organized, purposeful and coherent.
Staff play an important part as linguistic role models and create an environment that stimulates all children to use language well.	To create a good environment for language stimulation, staff will use language as they interact with the children throughout the day.

Research has shown knowledge and skills are required to successfully understand the complexity between the intentions in the plan and implementing it into practice (Alvestad, 2004; Håberg, 2015). Today, we know little about how the intentions in the national framework plan are implemented in high-quality settings.

2 Theoretical framework

The theoretical framework in the current study builds on a sociocultural perspective on learning and a social pragmatic perspective on language development. This approach implies an understanding that adult-child interactions drive child development and contextual aspects (e.g., culture, tradition, and language) are important.

2.1 *Sociocultural approach to learning and development*

Sociocultural perspectives build on the understanding that learning is an internalisation of socially and culturally situated knowledge through participation in social practices and interactions with other members of the culture (Vygotsky, 1978). There is a transformation of socially shared activities into internalised processes, and language that at first is a tool for social interaction becomes a private tool (private speech) as the child internalises language (Bohannon & Bonvillian, 2013). In this perspective, learning is a situated social practice, and communication (instead of, for example, exploration) becomes the key mechanism of learning. Communicative encounters between people are understood as central to human development, in which language is an important mediating tool (Veraksa, Shiyan, Shiyan, Pramling, & Pramling Samuelsson, 2016; Vygotsky, 1978). To address the aspects of language and communication in educational practices and language learning more specifically, I have chosen to focus on the theoretical concepts of the zone of proximal development (ZPD; Vygotsky, 1978) and scaffolding (Bruner, 1996; Wood, Bruner, & Ross, 1976). Both concepts are influential in the field of ECEC policy and practice (Sheridan, Pramling Samuelsson, & Johansson, 2009; Siraj-Blatchford, 2009; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2004).

Theoretical framework

Language is central to Vygotsky's theory, and his concept of the ZPD is central to his understanding of child development. The ZPD is defined by Vygotsky (1978) as

the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.

(p. 86)

This means that 'what a child can do with assistance today she will be able to do by herself tomorrow' (Vygotsky, 1978, p. 87). In this definition Vygotsky's notion of learning is present in his emphasis on the process of internalisation of shared social experiences. In other words, the language (speech) used in the social interaction is taken over by the individual child and internalised (Wertsch, Cole, & Leont'ev, 1981). The assumption is that the adult can identify the current development level and, based on this knowledge, guide the child to the next level of development, which is the proximal zone of development.

This emphasis on interactions as a driving force in child development and adult guidance is present in the concept of scaffolding introduced by Wood et al. (1976) and developed by Bruner in his work on the culture of education and learning (Bruner, 1997). Vygotsky never used the concept of scaffolding; however, it is argued that it derives from the notion of ZPD (Siraj-Blatchford, 2009; Siraj-Blatchford, Sylva, Muttock, Gilden, & Bell, 2002). Bruner's work focused, in line with Vygotsky, on learning as a socially situated activity and emphasised the notion of culture in the process of learning. Moreover, the theory of transformation described by Vygotsky from an interpersonal (e.g., between staff and the child) process into an intrapersonal (e.g., inside the child) process can be identified in the concept of scaffolding (Siraj-Blatchford, 2009).

Scaffolding is defined by Wood et al. (1976) as a

process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts. This scaffolding consists essentially of the adult ‘controlling’ those elements of the task that are initially beyond the learner’s capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence. The task thus proceeds to a successful conclusion (p. 90).

In this perspective, the assumption is that when temporarily providing support to a child within a social context, and gradually withdrawing the support, the child becomes capable of solving problems independently, and thus the child’s learning processes continue beyond the current situation (Wood et al., 1976). The ZPD is closely related to the concept of scaffolding, in relation to adult guidance and the learner’s focus on solving problems that are adapted to their level of development.

With a focus on educational language practices in the current study, the intention was not to observe practices directed at children’s ZPDs and scaffolding, given that this requires knowledge of children’s levels of development. Therefore, the theoretical framework of the ZPD and scaffolding are used to conceptualise interactions where staff support children’s language learning through active involvement and guide children to the next level in their development.

2.2 *Social pragmatic approach to language learning*

Language development and learning has been systematically studied from different theoretical positions for centuries, and today the field of early language development can be seen as cross-disciplinary, including a variety of research questions and theoretical and methodological approaches (Bavin, 2009; Hoff, 2014; Stone, 2004). There is an

Theoretical framework

agreement today that language development is dependent on an interplay between biological (e.g., genetics) and social (e.g., verbal input) influences (Bohannon & Bonvillian, 2013). Thus, both cognitive and social pragmatic theoretical approaches influence modern research, policy, and practice in the field of language development (Bohannon & Bonvillian, 2013; Chapman, 2000; Hoff, 2006; Stone, 2004; Stromswold, 2001). The discussions between a cognitive and a social approach are based on what children bring to the task of acquiring a language and how contextual aspects impact language learning.

Within a formalist view (e.g., structuralism, cognitive) on language learning, the social aspect and the use of language to communicate are not understood to impact the learning. This means that a child's inherent social capacity and need to communicate do not have any influence on language acquisition. The formalist view was developed by Chomsky and colleagues focusing on the structure of language, with the 'poverty of the stimulus' as the key argument (Bohannon & Bonvillian, 2013). This argument implies that input from the environment (e.g., adult verbal communication) is insufficient to explain the speed and complexity of children's language development (Bavin, 2009; Behme & Deacon, 2008). With its focus on the innate abilities and cognitive structures, the social and pragmatic use of language are not important aspects of language development in this approach (Bohannon & Bonvillian, 2013).

In a social perspective, language and the process of learning language are understood as shaped and supported by the communication function they serve (Bohannon & Bonvillian, 2013; Hoff, 2014, p. 19). The argument is that the social function of language and the social capacities of children are a part of the explanation of how children acquire language, and children are more likely to process language when they hear it in the context of communicative interaction (Hoff, 2014, p. 74). Catherine Snow (1999) argues that crucial social factors for language development are 'the child's precocious social capacity and the social-interactive context provided to developing children by adult caregivers'

(p. 273). Children's language learning starts with their social precocity, and they are learning language as they are learning about the world (Snow, 1999). The child's ability to understand others' intentions and engage in joint attention with adults is thus a part of the explanation of how social factors influence language development (Grøver, 2018; Hoff, 2014). Thus, there is enough complexity in the environmental input to account for variations in early language development. However, there are discussions within the social perspective in regard of which aspects of the environment influence development most. Hoff and Naigles (2002) describe two different approaches: social pragmatic including joint attention and following children's utterances. On the other hand, there is a data-providing approach focusing on number of utterances, word types, and tokens. In a social pragmatic approach, language is viewed as a social phenomenon and language development as a social process where the communicative experiences in interactions are essential (e.g., ZPD, scaffolding). In the data-providing approach the language input is seen as most important (Baldwin & Meyer, 2008; Bohannon & Bonvillian, 2013; Hoff, 2014).

The Nordic early childhood education tradition has an open and broad understanding of language learning and development in line with the focus on the influence of environmental aspects in a social pragmatic perspective (Grøver, 2018; Hoff, 2006). The formalist view with a focus on internal aspects (e.g., phonological memory) is not consistent with a broad and comprehensive view on learning and the emphasis on staff support for children's learning and development in everyday interactions in the Nordic social pedagogical tradition (Kunnskapsdepartementet, 2011; OECD, 2006; Vist & Alvestad, 2012). Placing this study within a Norwegian and Nordic ECEC tradition, the language-learning environment and the support from adults are understood as central aspects in supporting children's language learning.

2.3 Early language development (0–6 years)

Learning language is a complex process, and the study of language development is divided into different components (e.g., phonology, lexicon, and semantics) to deal with this complexity (Grøver, 2018; Hoff, 2014; Melby-Lervåg & Lervåg, 2014). The components are developing concurrently, and knowledge of the sounds (phonemes) and the content (lexicon and semantics) establishes the basis of early years language development (Melby-Lervåg & Lervåg, 2014). Phonology is the sound system of the language, and in Norwegian this could be the difference between *m* and *p* that separates *mil* and *pil*, and *mark* and *park*, (example used in Tetzchner, 2012) or *b* and *v* separating *bekk* and *vekk*, and *bære* and *være* (example used in Garmann & Torkildsen, 2016). Lexicon and semantics are the vocabulary, the word meanings, and how to form new words. Morphology is the knowledge of combining units of meaning and syntax is combining words into sentences. In addition, children develop pragmatics, which makes them able to use language to communicate information to others in a socially appropriate way (Hoff, 2014, pp. 4–5).

There are individual differences in language development, and the questions of late talkers and typical and atypical development are widely discussed. During the second year, children develop their vocabulary rapidly, both expressive and receptive, from just a few words at the start of the second year (12–18 months) to an explosion of new words at the end of the second year (18–24 months). A Norwegian study found that around half of the children expressed 60 words at age 18 months and over 300 words at 24 months (Simonsen, Kristoffersen, Bleses, Wehberg, & Jørgensen, 2014). There is a discussion about if there is a vocabulary or word spurt during this period, starting when children know around 50 words, or if the developments seen are more stable (Ganger, Brent, & Dannemiller, 2004; Hoff, 2014; Simonsen et al., 2014). During the third year (24–36 months), the most obvious development is grammar (syntax and morphology), and children start to produce two-

and three-word sentences and inflect words. During the fourth year, there is a refining of the language skills acquired, and children can produce complex sentences; their conversation skills are improved to tell short accounts of things they have done and ask questions. At the end of the fourth year, the development of basic language skills is seen as complete, and further development seems to be dependent on the skills at age 4 (Hoff, 2014; Klem, Hagtvæt, Hulme, & Gustafsson, 2016; Melby-Lervåg et al., 2012).

Lexical (vocabulary) development is a vital part of early language development and has been a topic of interest in research due to its ability to predict later reading skills and educational attainment (Bornstein, Hahn, Putnick, & Suwalsky, 2013; Grøver, 2017; Melby-Lervåg et al., 2012; Rowe, Raudenbush, & Goldin-Meadow, 2012; Scarborough 2009). Receptive vocabulary is children's word comprehension, and expressive vocabulary is the production of words (Grøver, 2018; Hoff, 2014). Results from a Norwegian study, in line with international findings, showed that vocabulary comprehension precedes vocabulary production, and both increase with age (Simonsen et al., 2014). The early years are crucial for vocabulary development, and individual differences at the ages of 3 and 4 seem to be persistent (Bornstein et al., 2013; Melby-Lervåg et al., 2012). Because of the rank-order stability in individual development from 4 years of age, the achievement gap established at this age seems to persist into school and later life (Dickinson & Porche, 2011; Vandell et al., 2010). Some findings indicate that vocabulary size as early as age 2 already accounts for a significant portion of the variance in language skills at age 8 (Marchman & Fernald, 2008; Rowe et al., 2012). The variation can partially be explained by environmental factors such as the quality of the language-learning environments at home (mother-child talk) and in ECEC (teacher-child/peer-to-peer talk) (Bohannon & Bonvillian, 2013; Bowers & Vasilyeva, 2011; Dickinson, 2011; Hoff, 2014). Socioeconomic status has been a powerful predictor for child development; however, recent research has shown that it is parents'

knowledge and focus on stimulating language at home that matter (Dickinson, 2011; Hart & Risley, 1995; Snow, 1999).

There are concerns about giving the social perspective on language development too much emphasis and thus ignoring language's relation to genetics, early foundational skills (e.g., working memory and executive functioning), and the fact that children develop language regardless of the amount of joint attention and intersubjectivity. However, evidence indicates that individual differences in children's vocabulary development are to a certain degree related to the availability of environmental support and caregiver speech (Hoff, 2006, 2014; Huttenlocher, Waterfall, Vasilyeva, Vevea, & Hedges, 2010; Spinath, Price, Dale, & Plomin, 2004). The question under scrutiny in this study is not the debate between nature and nurture nor typical and atypical language development, but how to provide children with the high-quality language-learning environment they are entitled to.

2.4 Educational language practices in ECEC

Educational language practices are defined in a broad manner in this study as practices concerning planning, work, and assessment related to fostering language development in ECEC. The quality of staff-child interactions are, from sociocultural and social pragmatic perspectives, understood as significant for child development. Three aspects of educational language practices possibly related to language development are discussed (i.e., responsiveness, verbal input, and conversations).

Responsiveness is argued to be an essential part of high-quality interactions, especially with children under the age of 3 (Dalli et al., 2011; Girolametto & Weitzman, 2002; Helmerhorst, Riksen-Walraven, Vermeer, Fikkink, & Tavecchio, 2014). Sensitive responsiveness is defined by Helmerhorst et al. (2014, p. 772) as when 'a caregiver recognises children's individual emotional and physical needs and responds appropriately and promptly to their cues and signals'. Related

Theoretical framework

to language development, responsiveness is often referred to in terms of verbal communication strategies (Cabell et al., 2011; Girolametto & Weitzman, 2002), and recent research has shown that communication-facilitating strategies are related to language development (Justice, Jiang, & Strasser, 2018). In this study, staff responsiveness to children's attempts at non-verbal and verbal communication and following children's lead in terms of topic and activity are seen as an important part of educational language practices.

The quantity and quality of verbal input is seen as important for early language development in research on mother-child dyads (Pan, Rowe, Singer, & Snow, 2005; Rowe, 2012; Weizman & Snow, 2001), and in an ECEC context (Dickinson & Porche, 2011). The content and quantity of verbal interactions are often measured by types (number of different words) and tokens (number of words), where types (e.g., use of sophisticated vocabulary) predicted later language skills (Dickinson, 2011). In this study, the use of rich and varied language in meaningful conversations, expanding children's talk by repeating and adding meaningful and descriptive words for objects and actions, is seen as important in staff educational language practices.

Creating meaningful conversations with children requires more than using a wide range of words. The concepts of extended discourse (Jacoby & Lesaux, 2014) and sustained shared thinking (SST; Siraj-Blatchford, 2009) point to central components in meaningful and language-supportive conversations. The 'Home-School Study' found that teacher support for extended discourses predicts language development. Dickinson and Tabors (2001) state that an extended discourse

requires participants to develop understandings beyond the here and now and that requires the use of several utterances or turns to build a linguistic structure, such as in explanations, narratives, or pretend. (p. 2)

Theoretical framework

Although the notion of extended discourse has been developed in relation to children over 3 years, children tell short stories and can engage in extended discourse during the third year (Ninio & Snow, 1999). The EPPE study identified SST to occur more often in high-quality ECEC settings (Siraj-Blatchford, 2009; Sylva et al., 2010). SST is in line with the theoretical concepts of ZPD and scaffolding with an explicit focus on the pedagogy of adult guidance, and scaffolding can be found in the empirical concept of SST (Siraj-Blatchford, 2009). SST is defined as

an episode in which two or more individuals ‘work together’ in an intellectual way to solve a problem, clarify a concept, evaluate activities, extend a narrative etc. Both parties must contribute to the thinking and it must develop and extend. (Siraj-Blatchford et al., 2003, p. 153)

In a Norwegian context with a focus on children over 3, Gjems (2013) found that the children’s utterances received few comments from staff, they were seldom asked to expand on their answers, and they were not invited to work together to develop their understanding. In a UK study Siraj-Blatchford and Manni (2008) also found that the majority of the questions asked were closed, which did not increase the children’s encouragement or provide the children with the opportunity to participate in sustained shared thinking/talking. In this study extending on children’s utterances by encouraging them to remain on the same topic and provide additional information is understood as an important part of creating meaningful conversations. Supporting children’s learning and their knowledge of the world is central to educational practices in ECEC. In this study, the staff’s ability to extend on children’s knowledge and reason with them about this knowledge is understood as important. Specifically related to educational language practices, extending on and explaining meanings of words and/or reasoning in cooperation with children are understood as important.

3 Research

Research on educational language practices with children under 3 and associations between quality of language-learning environment and language development are scarce in a Norwegian context. The research presented in the following chapter is mainly based on international research from the field of language development and ECEC that is relevant to the study's focus.

3.1 *Quality of educational language practices in ECEC*

Research on the quality of educational language practices with children under 3 is mainly done by studying mother–child dyads (e.g., Pan et al., 2005; Rowe, 2012; Tamis-LeMonda, Bornstein, & Baumwell, 2001; Weizman & Snow, 2001), and this has informed research on educational practices in ECEC (Dickinson, 2011). The basic assumption is that quantity (e.g., numbers of word types and tokens) and quality (e.g., responsiveness, joint attention) in adult–child communication are significant for language learning.

Different aspects of mothers' communication are addressed, and children's vocabulary sizes are often used as an outcome measurement as a predictor for later reading skills and academic success (Hoff & Naigles, 2002; Pan et al., 2005; Rowe, 2012). Tamis-LeMonda et al. (2001) looked at how maternal responsiveness (e.g., response to looks, to exploration, to vocalisation, to play) predicts children reaching five milestones in expressive language (first imitation, first word, first 50 words, combinatorial speech, and talking about the past). They found that responsiveness at age 13 months was a stronger predictor than at age 9 months, and responsiveness at 13 months predicted the timing of children's first 50 words, combinatorial speech and first use of language to talk about the past. This points to children already at 13 months being

sophisticated communicative partners, and feedback on and elaboration of their own language initiatives are important for language development (Tamis-LeMonda et al., 2001). Hoff and Naigles (2002) looked at both what they describe as social pragmatic aspects (e.g., joint attention, following children's utterances) and data providing aspects (e.g., number of utterances, words types, and token). They found that data providing aspects (i.e., quantity of words, lexical richness, and syntactic complexity mothers produce in conversations) were related to children's lexical development (over 10 weeks). Their conclusions are that the social aspect 'provides motivation and occasion for language use and thus brings the children into the context in which language-advancing data are provided' (Hoff & Naigles, 2002, p. 430). The importance of data providing aspects was also found in Pan et al.'s (2005) study on mother-child communication and children's vocabulary production between 1 and 3 years. They studied maternal communicative input in word types, word tokens and pointing, and found that word types (not tokens or pointing) predict vocabulary development (Pan et al., 2005). Rowe (2012) studied the effect of quantity and quality of child-directed speech on vocabulary development from 14 to 46 months. She concluded that the use of diverse and sophisticated vocabulary with toddlers explains variations in vocabulary development and use of decontextualised language with preschoolers (Rowe, 2012).

In a review focusing on educational practices in an ECEC context, Dickinson (2011) found, in line with mother-child research, that variety of words used (types and tokens), responsiveness (joint attention) and extending and clarifying utterances (extended discourse) support children's language acquisition. In another review of effective strategies to support language development, Burger (2015) suggests that providing children with opportunities to hear and use language, use of language in meaningful contexts that are relevant for the children, direct interaction, and a shared focus are core aspects. The research included in these reviews is mainly on children above the age of 3.

Girolametto and Weitzman (2002) focused on linguistic responsiveness with toddlers and preschoolers in their study. Responsiveness included following the children's lead (child-oriented responses), extending on conversations (interaction-promoting responses), and providing semantic and syntactic models of language (language-modelling responses). They found that interaction-promoting responses are related to toddlers' language production (Girolametto & Weitzman, 2002). In addition, they found the same amount of child-centred and interaction-promoting strategies in both age groups; but language modelling strategies differed, with more use of labelling with toddlers and extension with preschoolers. Justice et al. (2018) investigated three dimensions of the language environment: linguistic responsibility (responsiveness), data-providing features of teacher talk (input, type-token), and system-level general quality of teacher-child interactions (global quality measurement). Teachers' communication-facilitating behaviours, defined as the strategies used by teachers to encourage and maintain conversations, predicted growth in children's vocabulary from preschool to kindergarten (Justice et al., 2018).

3.2 ECEC quality and language development

Associations between ECEC quality and language development are often studied by using regression analysis on cross-sectional data (Eliassen et al., 2017; Gordon et al., 2013; Mayer & Beckh, 2016; Ruzek, Burchinal, Farkas, & Duncan, 2014) and longitudinal data (Burchinal et al., 2008; Howes et al., 2008; Keys et al., 2013; Sylva et al., 2006).

Taking a meta-analytical approach, Keys et al. (2013) included 6250 children from four studies to look at the relationship between quality in preschool (3–5 years) and school readiness skills at kindergarten entry. They found the ECERS total score to be significant related to language outcomes. Burchinal et al. (2008) investigated the effect of the ECEC quality measured by ECERS-R and CLASS on academic achievements. Based on factor analysis they used a one-factor structure from the

ECERS-R named ‘Interaction and Teaching’ (including items on staff–child interaction, encouraging children to communicate, and using language to develop reasoning skill). They found no statistical relations between the ‘Interaction and Teaching’ factor and language development (Burchinal et al., 2008). Including data reported in Burchinal et al. (2008) and from other large-scale projects in the US, Howes et al. (2008) used longitudinal data on 2800 children. The regression analysis of a two-factor structure (‘Activities and Interaction’ and ‘Provision for Learning’) from the ECERS-R showed no statistically significant associations with language and literacy outcomes. However, they found small effect sizes of a composite of process quality measured by ECERS-R and CLASS on language and literacy, which also was the case in Burchinal et al.’s (2008) study. In the UK-based longitudinal EPPE study, Sylva et al. (2006) found no relation between ECERS-R and cognitive development (including language) from 3 to 5 years in a sample of over 3000 children using multilevel analysis. When looking at an extended version of the ECERS-R named ECERS-E, they found statistically significant (though small in magnitude) relations to non-verbal measures of language, but not to expressive language (Sylva et al., 2006). On the other hand, Ebert et al. (2013) found no significant associations between quality measured with the German version of the Early Childhood Environment Rating Scale – Extension (ECERS-E; Sylva, Siraj-Blatchford, & Taggart, 2003) subscale ‘Literacy’ and receptive vocabulary development from 3 to 6 years. The NICHD (2000) team measured children’s language stimulation in childcare using the ORCE scale, and they showed that the quality of language stimulation experienced from 6 to 36 months predicted vocabulary skills at 15, 24, and 36 months.

Despite diverging results from empirical research, there is an overall agreement on the importance of high-quality ECEC for children’s early development and later skills, especially for disadvantaged children (Melhuish, 2011).

4 Method

A multimethod approach was chosen to explore and provide in-depth descriptions of educational language practices in ECEC, and to explore and understand possible associations between educational practices and children's language development. The qualitative case study and the quantitative longitudinal study are presented.

4.1 Design

A qualitative explorative and interpretative approach is used in Article 1 and Article 2 to empirically investigate educational practices situated within a specific social context. Using qualitative methods provides a detailed description and exploration of educational practices within a high-quality ECEC context. A quantitative longitudinal approach is used in Article 3 to empirically investigate the importance of the social context in supporting children's verbal language development. Using quantitative methods enables an exploration of the relationship between the quality of language-learning environment in ECEC and children's language development. A multimethod approach will make it possible to get knowledge on educational language practices in ECEC and associations with children's language development.

With a pragmatic approach, the aim is to provide the best understanding of the research question by focusing on *why* the research is being conducted in the way it is rather than on *what* is being done (Creswell, 2014; Morgan, 2014; Onwuegbuzie & Leech, 2005). Situating a study within a paradigm implies following a set of 'assumptions about the nature of the world (ontology) and how we can understand it (epistemology)' (Maxwell, 2009, p. 224). In pragmatism, all experiences are social in nature, meaning that our experiences are shaped by others, and thus any attempt to produce knowledge occurs within a social context (Morgan, 2014). Taking this approach implies an understanding

Method

that knowledge is ‘not about an abstract relationship between the knower and the known; instead, there is an active process of inquiry that creates a continual back-and-forth movement between beliefs and actions’ (Morgan, 2014, p. 1049). This means that knowledge about the world is a result of taking actions and experiencing the outcomes. In this perspective, knowledge exists apart from our understanding and is created by our understanding of the world. The aim is, according to Merriam (1998), after all to produce knowledge about the world; in this study, the world is the world of educational practices. The aim is to produce knowledge that can be useful for enhancing the quality of educational language practices in ECEC.

There are some implications for using a pragmatic approach to empirically explore educational practices situated within a specific social context and associations between educational practices and children’s development. First, in pragmatism the production of knowledge occurs in a social context. There are several contextual aspects to take into account when studying the field of ECEC (e.g., societal, institutional, and individual cultures and traditions). Second, in pragmatism knowledge is understood to exist apart from my understanding and is created by my understanding of the world. As a researcher, I need to be aware of the implications my own understanding of the world will have on the answers given and the knowledge produced. Third, and maybe most central to conducting research within a pragmatic approach, is the question of why the research is done in this way. This implies an argument for the choice of theoretical framework, methods, and analytical strategies that can be used to answer the research question.

The overall study constitutes a qualitative study on educational language practices and a quantitative study on ECEC quality and language development, giving a multimethod design. The qualitative study aimed at providing in-depth understanding of educational language practices in high-quality ECEC, and the quantitative study aimed at investigating the

Method

relationship between quality of language support and children's verbal development (presented in Figure 1).

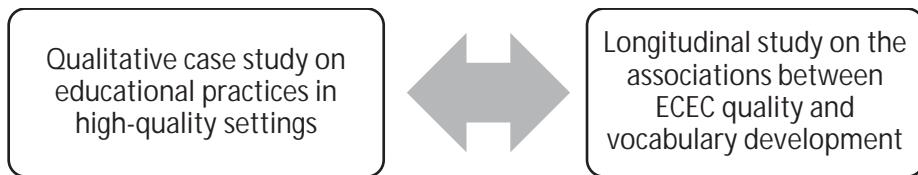


Figure 1 – Design of the study

A more detailed overview is presented in Figure 2, illustrating the methods and analytical strategies used in the three articles that constitute the thesis. The main sources of qualitative data were collected using interview and observation, which are well-known qualitative methods (Creswell, 2013). Quantitative data was collected using observational measurement, assessment, and survey as methods (Johnson & Christensen, 2012).

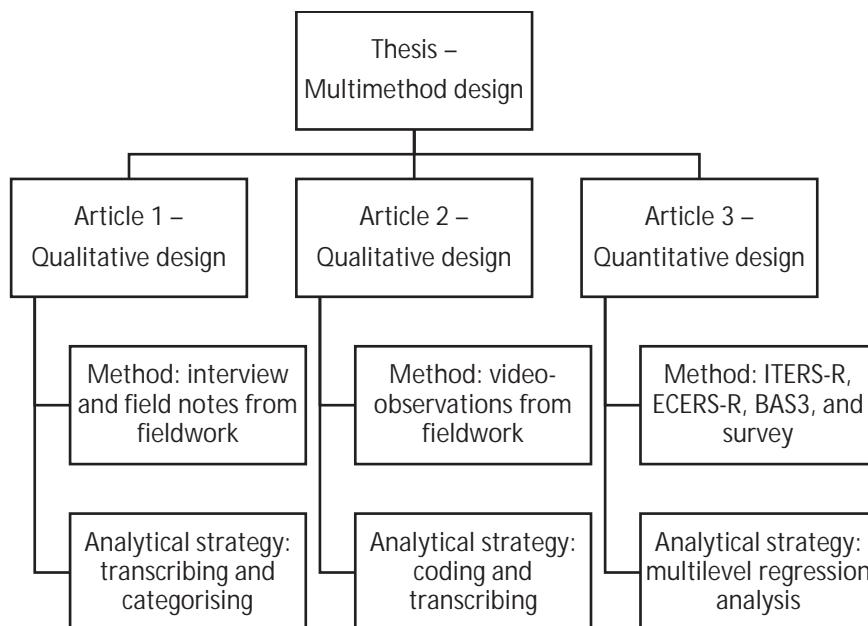


Figure 2 – Detailed overview of design, methods, and analytical strategy in the different parts of the thesis

4.2 The qualitative case study

An explorative case study approach (Yin, 2014) was chosen to answer the first part of the research question addressing characteristics of educational language practices (Article 1 and Article 2). The aim was to gain insight into preschool teachers' perspectives on and experiences with educational language practices, and to explore and describe staff-child verbal interactions during everyday activities. The strength in a case study design is the intensive and comprehensive focus on phenomena or constructs in a real-life context in contrast to focusing on individuals' experiences in phenomenology or on cultural aspects of practices, which are central in ethnographic research (Johnson & Christensen, 2012; Merriam, 1998; Yin, 2014). Several methods (e.g., observation and interviews) were applied in this study to get information from different sources to capture the complexity and entirety of the cases studied (Creswell, 2013; Yin, 2014).

4.2.1 Selection of cases and participants

The participating ECEC centres are selected from the GoBaN sample of 93 centres and 205 child groups (Bjørnestad, Gulbrandsen, Johansson, & Os, 2013; Bjørnestad & Os, 2018). For practical reasons, all the selected ECEC centres in this study are from the southwestern region of Norway.

The selection strategy was based on two criteria. The main selection criterion was a score of 5 or above (on a 7-point scale) on the subscale 'Listening and Talking' in the ITERS-R, consisting of three items: Item 12 – Helping children understand language, Item 13 – Helping children use language, and Item 14 – Using books. The requirements for obtaining a high score are explained in detail by the developers of the scale (Cryer et al., 2004), and a score of 5 or above is defined as high-quality (Howes, Phillips, & Whitebook, 1992). The ITERS-R observation was done before the case study was conducted, but there were no significant changes in staff in the child groups included. The data collection in this

Method

study and the following analysis was done blind in regard to the exact ITERS-R score. The second criterion was variation of structural aspects (e.g., group size and staff composition). The second criterion was used to see if structural aspects could give some variance in the quality of educational language practices. Structural aspects are hypothesised to affect educational and pedagogical quality (Gulbrandsen & Eliassen, 2013; Vassenden, Thygesen, Brosvik Bayer, Alvestad, & Abrahamsen, 2011).

Table 2 – Information on participating ECEC centres and child groups

	Ownership	Total size	Location	Group size	Staff members included
Centre 1	Private	79 in 5 child groups	Urban	14	1 head teacher, 2 pedagogical leaders, and 2 assistants
Centre 2	Municipal	66 in 4 child groups	Urban	12	1 head teacher, 2 pedagogical leaders, and 2 assistants
Centre 3	Municipal	74 in 5 child groups	Rural	9	1 head teacher, 1 pedagogical leader, and 2 assistants
Centre 4	Municipal	118 in 11 child groups	Urban	10	1 head teacher, 1 pedagogical leader, and 2 assistants

There is no intention of having a representative sample in a case study (Yin, 2014). However, a comparison between the characteristics of the selected centres and child groups and Norwegian ECEC centres in general can assess if the aim of variation is achieved. Concerning ownership there are one privately and three municipally owned centres, and total size (number of children enrolled) ranges from 66 to 118. This shows that all the centres in the current study are above the median size in Norway (48 children) and are placed within the three highest deciles (Gulbrandsen, 2017). Looking at ownership, only one of the four is privately owned, which is lower than the actual 54% of privately owned

Method

ECEC centres in Norway (Utdanningsdirektoratet, 2018). The variation in group sizes in this study ranges from 9 to 14, and compared to national statistics the common size is 9 and 14 children with an average of 11 for children under 3, indicating that the groups included are within the average range (Utdanningsdirektoratet, 2018). In accordance with the national regulations, there was one pedagogical leader in groups with nine children or less and there were two pedagogical leaders in groups of more than nine children. In Centre 4, there was only one pedagogical leader, despite having 10 children in total, because of an overlapping period where one child was starting and another was stopping, giving the normal group size as nine children. There is a variation on structural aspects in the participating centres, reflecting the national population of ECEC centres; however, there are more municipality-owned ECEC centres and there are no centres within the majority size range (less than 60 children).

Participants included in this study were four child groups, each from a different ECEC centre, including in total 18 staff members and 45 children. All four head teachers were female and had between two and twenty-five years of work experience. The six preschool teachers were also female and had from two to more than twenty years of experience. All head teachers and preschool teachers had a bachelor's degree within the field of early childhood education. Out of the eight assistants there were two male and six female, and they all worked full-time and had between five and twenty-five years of experience. Two of the assistants had vocational training for child and youth work. In the four child groups, a total of 45 children were enrolled at the time of the observations, including 15 girls and 30 boys; 9 one-year-olds, 21 two-year-olds and 15 three-year-olds.

In the process of getting access, the head of each centre was contacted by phone and informed briefly on the scope of the study. Since the design of the study involved interview and observation including staff and children, a meeting was arranged with the pedagogical leaders to give

more information and to allow them to decide if they wanted to participate. At the meeting with the pedagogical leaders, the project was presented with emphasis on how it would affect their daily work to have a researcher present. All the preschool teachers were positive about and interested in participating in the study. The next step was to inform and collect written consent from the parents of the children and staff members in the child group (see Appendix 1). The pedagogical leader informed, handed out the information to, and collected the signed consent forms from staff members and parents. This turned out to be an effective strategy, and all parents and staff returned their written consent.

4.2.2 Data collection

Data collection for the case study was conducted between April 2015 and January 2016, and included interviews with staff, observations in child groups with use of video, and more informal observations. The data collected includes a total of 20 days of observation, including 16 days with video-recorded observations and 14 audiotaped interviews with the head teachers, preschool teachers and assistants. All head teachers and preschool teachers were interviewed. In order to reduce the workload for the groups participating, one assistant per group was interviewed. The observations were done between April and June 2015, and the interviews between April 2015 and January 2016 (see Table 3 for a detailed overview).

Table 3 – Detailed timeline of the data collection

	Centre 1	Centre 2	Centre 3	Centre 4
Observation	April – June 2015	May – June 2015	April – June 2015	June 2015
Video observation	May – June 2015	May – June 2015	May – June 2015	June 2015
Interview head teacher	January 2016	October 2015	October 2015	November 2015

Method

Interview preschool teacher 1	April 2015	May 2015	April 2015	June 2015
Interview preschool teacher 2	April 2015	June 2015	-	-
Interview assistant	November 2015	November 2015	October 2015	October 2015

Interview

Semi-structured, in-depth interviews were chosen as a method to record the participants' perspectives on educational language practices. The interviews were recorded using a digital voice recorder (Olympus WS-832), and the audio file was transferred to an external hard drive and stored securely immediately after the interview. The interviews were carried out following an interview guide based on four themes: (1) work on language, (2) educational planning, (3) tools for language assessment, and (4) professional competence (see Appendix 3). Questions asked included: 'How do you work with language stimulation in your group?', 'Can you give some examples on this?', and 'Which assessment tools are you familiar with, and what are your experiences of using these tools?' The themes were similar for head teachers, preschool teachers and assistants. The questions were adapted to fit the responsibility level of each of the staff members: questions asked to the head teachers focused on the overall work and responsibility for supporting language and questions asked to the assistants had more emphasis on everyday work. The purpose of using open-ended questions was to allow the participants to elaborate on their experiences and to provide opportunities for them to make detailed explanations of their own practices (Fetterman, 2010; Kvæle, Brinkmann, Anderssen, & Rygge, 2015). The interview guide was piloted and minor changes were made before the interviews were carried out face-to-face on-site in the ECEC centres. Some questions were changed for clarification and to make them more open-ended, to allow the interviewees to relate them more to their own educational practices.

Observation

The observational data was collected using video recordings and field notes. The observations were done between April and June 2015. Each of the four centres was visited for five days (Monday to Friday), giving a total of 20 days. The method used can be defined as naturalistic observation, meaning that the observations were carried out in the natural setting (the ECEC centre) and were not structured by predefined categories (Siraj-Blatchford et al., 2003). However, the focus of the study was defined, and the intention was to get in-depth descriptions of staff–child verbal interactions in everyday situations including contextual aspects. Before the observations started, the staff were informed that during the observations my position as a researcher was as an observer and I was not going to participate. During the observations, the staff were observed across situations and activities to get a comprehensive perspective. The first day was used to get familiar with the ECEC centre, the staff members, and the children; video observations were not collected at this time.

Field notes were used to get descriptions of the ECEC centres' environments, spaces for play indoors and outdoors, and educational practices. The field notes were transcribed after the observations and constitute a total of 35 pages. Video observations were recorded on a handheld video camera with an on-camera microphone (Panasonic HC-X920 and Røde VideoMic). Several recordings were deleted during the observations due to children from other child groups who had not been consented participating. Immediately after the observations, the video files were transferred to an external hard drive and deleted from the camera. The external hard drive was stored securely before the files were transferred to Services for sensitive data (TSD) for secure storage. The empirical data consists of 115 video-recorded observations (1115 min). A video recording includes verbal interaction between a staff member and a child or child group. The start of an observation was defined by a verbal interaction between a staff member and one child or a group of

Method

children. The end was marked by a shift in activity or when the staff member or child left the ongoing interaction or activity. In order to get naturalistic observations of staff-child interactions in everyday situations, the number of observations per activity, the length of the observations, and the number of children and staff participating varied. More detailed information on the observations included is presented in Table 4.

Table 4 – Detailed information on video observations included

	Total	Free play	Free play (outside)	Meal time	Group activity	Transition	Circle time
Number of recordings	115	41	17	33	7	4	13
Length in total (min)	1114	319	88	456	55	18	178

4.2.3 Analytical strategies

The process of analysing qualitative data relies on interpretations done by the researcher, a process also described as reflexive empirical research (Alvesson & Sköldberg, 2008). Denzin and Lincoln (2013) define qualitative research as a situated activity where the researcher transforms the world into a series of representations through practices including interviews, field notes, and recordings. In a qualitative analytical process, one strategy is to reduce and interpret these representations by describing and categorising (Creswell, 2013; Maxwell, 2009). This process of meaning-making includes, according to Merriam (1998), ‘reducing and interpreting what the participants said, and what the researcher has said and seen’. The analytical process can be described within a hermeneutical perspective, where the meaning, interpretation, motive, and intentions are important for the understanding of an empirical observation (Alvesson & Sköldberg, 2008). Taking an abductive research approach (Blaikie, 2010) the starting point is the empirical data, and the observations are related to a theoretical framework or vice versa, where the result is presented as a plausible

Method

interpretation rather than a logical conclusion. Both the hermeneutical process and the abductive approach move back and forth between theory and the empirical data in an iterative process, where the intention is to interpret and explore the phenomena or construct under scrutiny. The case study design is in this sense a situated and detailed study for learning, and not for proving (Flyvbjerg, 2006).

The research questions, empirical data, and units of analyses used in Article 1 and Article 2 are presented in Table 5. These components are central to choosing an analytical strategy. The focus in the following paragraphs is on why these strategies were chosen to answer the research question, in order to clarify the analytical procedure.

In Article 1 (Hansen & Alvestad, 2017), a hermeneutical approach was chosen to get insight into the preschool teachers' perspectives on, and experiences with, educational language practices. The analytical process was based on categorising empirical data, which is a core element in interpreting qualitative data (Bogdan & Biklen, 2007; Creswell, 2013; Maxwell, 2013). The process of analysing can be described in three steps. The first step included reading the transcriptions to search for common topics and patterns. Statements regarding the preschool teachers' descriptions of their educational practices were marked. The second step resulted in the identification of five broad description areas. In the third step the five description areas were written out as broad categories, supported by quotations from the interviews and field notes. In this process theoretical concepts provided contributions to the descriptions and interpretations, pendulating between theory and the empirical data in a way that is similar to the hermeneutical circle (Alvesson & Sköldberg, 2008).

In Article 2 (Hansen, in review) an abductive approach was chosen to get more detailed descriptions and explore staff educational language practices in ECEC, combining theoretically constructed categories and empirical data (Alvesson & Sköldberg, 2008; Blaikie, 2010). The

Method

analytical procedure included use of predefined codes and transcribing selected speech samples based on the results from the coding, which is a common approach used to study language in ECEC (Dickinson, 2012; Dwyer & Harbaugh, 2018). The first step was to code the video observations, based on the content in the verbal interactions and contextual aspects, to enable examination of the characteristics of the language-learning environment. The second step was to analyse selected examples of staff educational practices, based on the initial coding. In this step, the empirical observations were related to theory and research in order to get more detailed descriptions of the practices.

Table 5 – Focuses, empirical data, and units of analyses in Article 1 and Article 2

	Research question	Empirical data	Unit of analysis
Article 1	What characterises educational language practices as described by preschool teachers in kindergartens with high quality scores on ITERS-R?	Semi-structured interviews with six preschool teachers and field notes.	Preschool teachers' descriptions of their educational work on language.
Article 2	What characterises staff's verbal interactions with children in four toddler groups?	Video observations of staff-child interactions.	Verbal interactions between staff members and individual children or child groups.

4.3 The quantitative longitudinal study

A longitudinal design was used to answer the second part of the research question addressing the association between the quality of the language-learning environments of ECEC and children's vocabulary development (Article 3). The data is from the GoBaN project, which has a non-experimental longitudinal design, following 1131 children in ECEC over 4 years with two measurement points (T1 at age 3 and T2 at age 5). The potential of addressing a cause and effect relationship with a non-

experimental design (rather than a randomised controlled trial) is discussed in methodological literature (Johnson & Christensen, 2012). However, the focus in this study is the effect of differences in quality of the language-learning environment on children's vocabulary development, and thus a non-experimental approach is most suitable.

4.3.1 Sample

The sample used in the current study comes from the first and second wave of GoBaN. Participants in the current study were 1131 children (47.9% girls) from 206 toddler groups from 93 centres; the average age of assessment at T1 was 35.5 months ($SD = 2.7$ months), and at T2 it was 60.3 months ($SD = 1.4$ months). Through a stratified random selection (SRS) and self-recruitment in six counties in Norway, 93 centres were enrolled, and within these centres 206 groups were observed using the ITERS-R at T1 (Bjørnestad et al., 2013; Bjørnestad & Os, 2018). One additional centre was included at T2 (to follow up children changing centres), leading to a sample of 94 centres, and within these centres 205 groups were observed using the ECERS-R at T2.

4.3.2 Procedure

The data used in the current study includes data from test situations with children at T1 and T2, survey data from parents at T1, and observational data on quality in toddler groups at T1 and kindergarten groups at T2. The test was conducted in familiar surroundings in the ECEC centre, and a familiar staff member accompanied the children. Prior to the test (naming vocabulary subtest from BAS3), the preschool teacher informed and prepared the child for the test situation. The parents were also informed the day before so that they could take part in preparing the child. A staff member participated in the test to create a secure and pleasant situation for the child. During the test situation, an emphasis was put on being sensitive to the children's signals to see whether they wanted to participate or not (Pettersen, 2014). The quality assessments

Method

were done by certified ITERS-R and ECERS-R researchers and trained observers who followed the procedures described by the Environment Rating Scales Institute (ERSI – ersi.info). The certified researchers completed the online course offered by ERSI (ersi.info), which was followed by intensive training and certification with the developers of the ITERS-R and ECERS-R (with an average within-one-point reliability score of 96%). For the 12 trained observers at T1 and 11 at T2 (two to four per region), the interrater reliability was high, with an average within-one-point interrater agreement of 87.5% (range of 85% to 96% for all items).

Measures of quality – ITERS-R and ECERS-R

The Infant/Toddler Environment Rating Scale – Revised (ITERS-R; Harms et al., 2006) was used to measure quality at T1 and the Early Childhood Environment Rating Scale – Revised (ECERS-R; Harms, Clifford, & Cryer, 2005) at T2. Each has been developed as a global measure of quality and focuses on multiple processes within early childhood learning settings. The ITERS-R consists of seven subscales ('Space and Furnishings', 'Personal Care Routines', 'Listening and Talking', 'Activities', 'Interaction', 'Program Structure', and 'Parents and Staff') and within these subscales there are 39 items. The ECERS-R also consists of seven subscales ('Space and Furnishings', 'Personal Care Routines', 'Language-Reasoning', 'Activities', 'Interaction', 'Program Structure', and 'Parents and Staff') that contain in total 43 items. Each item is rated on a scale from 1 to 7 (1 = inadequate, 3 = minimal, 5 = good, and 7 = excellent). The rating is based on whether the hierarchically ordered indicators belonging to that item are met (i.e., a yes/no score). The rating scales measure the quality of the learning environment, and thus do not focus on individual children or staff. The subscale 'Parents and Staff' was not used, because information on parents was collected through a parental questioner. The scales have been adjusted to the Norwegian context by the GoBaN project group (Bjørnestad et al., 2013). In this study, three items from the subscale

Method

‘Listening and Talking’ from the ITERS-R were included: Item 12 – Helping children understand language, Item 13 – Helping children use language, and Item 14 – Using books. These were considered the most relevant measures for the language-learning environment. From the ECERS-R, four items from the subscale ‘Language-Reasoning’ were included: Item 15 – Books and pictures, Item 16 – Encouraging children to communicate, Item 17 – Using language to develop reasoning skills, and Item 18 – Informal use of language.

Measures of vocabulary development – BAS3

Verbal ability was measured twice using the subtest ‘Naming Vocabulary’ from the British Ability Scales 3 (BAS3; Elliot, 2011) when the children were around 3 years ($M = 35.5$ months, $SD = 2.69$) and 5 years ($M = 60.3$ months, $SD = 1.4$). The children were shown a series of pictures of objects, one at a time, and asked to name them. Correct answers were worth one point, while incorrect answers or answers not given were scored as zero. In order to adjust for age, the children were presented with different items with varied degrees of difficulty. To deal with the problem of comparability of test scores across different sets of items, the raw scores were converted to ability scores in line with the BAS3 Scoring Manual (Eliassen et al., 2017; Elliot, 2011).

Covariates

Information on family socioeconomic background and the home learning environment (HLE) was included to adjust for confounders possibly related to children’s language development. Parents reported their home learning environment on frequency of reading, frequency of letter play, and frequency of number play on the following scale: 0 = never, 1 = special occasions, 2 = once a week, 3 = several times a week, 4 = every day, and 5 = several times a day. As the indicator for socioeconomic status, we used the highest attained educational level in the household, measured on the following scale: 0 = up to minimum compulsory education, 1 = post-secondary education, 2 = bachelor’s

degree or lower university degree, 3 = master's degree or higher university degree.

4.3.3 Analytical strategy

A multilevel analysis (Hox, Moerbeek, & van de Schoot, 2010) was chosen to analyse the two-level-structure data included, where children (level 1) are nested in toddler groups (level 2). A multilevel regression analysis was used to investigate the relationship between the quality of the language-learning environment in toddler childcare groups and children's vocabulary development from age 3 to age 5. Verbal ability at age 3 (T1) was included as a covariate when predicting verbal ability at age 5 (estimating residualised change). This was done to see if there was additional change, predicted by the quality of the language-learning environment in toddler groups, above the stability in vocabulary development. Mplus version 8 (Muthén & Muthén, 2013) was used to estimate a series of multilevel models using verbal ability at T2 as dependent variable and quality of the language-learning environment at T1 (clustered by T1 child group) as main independent variable. The issue of missing data was dealt with by using full information maximum likelihood estimation (FIML; Enders, 2010). FIML has been recommended as an appropriate way to deal with missing data and shown to provide less biased estimates by accounting for systematic attrition in longitudinal studies (e.g., Asendorpf, van de Schoot, Denissen, & Hutteman, 2014).

4.4 Ethical considerations

Using methods such as video observation, test, and interview requires ethical considerations on issues regarding respect for individuals and, especially, children's right to protection (Backe-Hansen, 2009; The National Committee for Research Ethics in the Social Sciences and the Humanities [NESH], 2016). This study has been approved by the Norwegian Centre for Research Data (NSD) as a part-study of the

Method

GoBaN project (see Appendix 2). The GoBaN project was approved by the NSD and by the Norwegian Data Protection Authority after recommendations from the NSD (Bjørnestad et al., 2013). All data in this study has been used and stored in accordance with the approval given by the NSD.

There are different ways to obtain the right of informed consent set out by the Personal Data Act when involving children and adults in research (NESH, 2016). The ECEC staff are required to be informed on the scope of the project and how the data collected will be used. In this process, the researchers are obliged to underline the fact that participation is voluntary and that staff may withdraw from the study without giving a reason. Moreover, it is important to inform the participants what being observed and interviewed as professionals implies. In this study, the focus was on securing the participants through correct and clear information about the study and methods to be used, as well as the societal importance of participating in research.

The NESH guidelines state that the use of informed voluntary consent for children may be challenging because children are more willing to follow adults' instructions, and thus they feel that they cannot refuse to participate (NESH, 2016). This issue is linked to the UN Children's Convention Article 12, which states that children who are able to form their own views have the right to speak, and their viewpoint must be weighted based on age and maturity. In this, there is an understanding that children should be seen as active participants in the research process. The children in the current study were between 1 and 3 years of age at the point of recruitment, and to ensure the children's right to protection their parents were given an information letter and gave written consent for their children's participation (see Appendix 1). This approach is in line with the guidelines from NESH (Backe-Hansen, 2009; NESH, 2016).

Observing and testing children generated several challenging situations that can be seen as practical ethical dilemmas and issues. For instance, being a non-participating observer with a handheld videorecorder among curious and contact-seeking children presented some ethical challenges. One example was the issue of ignoring children's attempts to interact and getting them to understand my role as a non-participating observer. ECEC environments are based on interaction between staff and children, and children are used to adults supporting them and wanting to interact and play. My experience was that it required pedagogical knowledge to avoid offending or hurting the children's feelings when taking a position as a non-participating observer. In addition, there is an ethical responsibility to intervene when observing a child treated badly by other children or adults. In this study, the ethical considerations always favoured the children's best interests. It was especially important to be aware of ethical considerations in the test situation because it required the active participation of the children. In accordance with the guidelines given by the GoBaN project, each test was conducted in familiar surroundings in the ECEC centre, and a familiar staff member accompanied the child taking part. A study done by Pettersen (2014) found that sensitive and caring adults with an ability to improvise are important for creating good situations for children. This is in line with my experiences that the researcher needed to have knowledge and skills in the field of early childhood education and care.

As a researcher within the ECEC field, one needs to be aware of traditions, regulations, and guidelines, as well as the more procedural aspects of interacting with children. Securing a good and safe relationship with the participants requires practical ethical knowledge.

4.5 Validity and reliability

The questions of validity and reliability are addressed in relation to the qualitative and quantitative parts of the study. Addressing the issue of validity generates critical questions on the accuracy of the data collected,

and how the data supports the results and conclusions. These are often followed by questioning on other plausible interpretations and explanations, and whether the conclusions can be trusted. To deal with the level of accuracy and possible alternative explanations, validity is discussed to minimise misrepresentation and misunderstanding (Johnson & Christensen, 2012; Maxwell, 2009). Several issues must be addressed in relation to the process of interpretation and explanation of the empirical data. In the following paragraphs, strengths and limitations are discussed in relation to questions of validity and reliability.

Internal validity is the study's ability to argue for any causal relationships identified (Johnson & Christensen, 2012). The issue of causality requires 'thinking in terms of processes and mechanisms, rather than simply demonstrating regularities in the relationships between variables' (Maxwell, 2009, p. 222). In the present study both the qualitative and quantitative parts require explanations of the social processes and mechanisms producing the causal relationships identified. Three types of evidence need to be present in a quantitative study to reach a causal explanation: 1) evidence of a relationship between the independent variable (ECEC quality) and the dependent variable (vocabulary development), 2) evidence that the cause precedes the effect (controlled by a longitudinal design), and 3) evidence of no confounding extraneous variables (third variable problem). A threat to the validity in the quantitative part of the study is the third variable problem, with uncontrolled confounding variables that vary systematically with the independent variable and influence the dependent variable. Even if information on socioeconomic background and home learning environment are included to adjust for confounders possibly related to children's language development, there could be a third variable not included mediating the association. Moreover, issues regarding identifying causality in non-experimental designs are widely discussed. Therefore, the findings indicating a causal relationship in this study need to be interpreted with caution.

Method

In contrast to the quantitative part, there are no statistical analyses that control for the possible effect of confounding variables. According to Maxwell this requires the qualitative researcher to use ‘evidence collected during the research itself to make these “alternative hypotheses” implausible’ (Maxwell, 2009, p. 240). In the qualitative study, method triangulation (interview and observations) and data triangulation (multiple interviews and multiple observations) were strategies used to provide transparency of the process of data collection and to enhance the validity of the conclusions. Triangulation is a strategy used to reduce the risk of systematic biases due to a specific method (Creswell, 2013; Johnson & Christensen, 2012; Maxwell, 2009; Merriam, 1998; Yin, 2014). Yin (2014) argued that the question of validity can be met by using a prior clearly defined theoretical framework and established analytical techniques in the process of analysing and discussing the results from the empirical data. In Article 1 and Article 2, the theoretical framework and the analytical process are described and argued in relation to the research question to provide transparency to the research process and enhance the validity of the conclusions. However, when analysing and interpreting interview data, the meanings given by the participants (e.g., thoughts, feelings, and intentions) are always portrayed. This may raise questions of the interpretative validity (Creswell, 2013; Maxwell, 2009). The validity could have been strengthened using a respondent validation strategy, where the preschool teachers would have been included in the analytical process (Maxwell, 2013).

Another question of validity is related to how the constructs studied (e.g., quality of ECEC) are accurately represented (Johnson & Christensen, 2012). In this study, construct validity is aspired to by providing clear definitions and explanations of the process of operationalising the constructs studied. However, there will always be an imperfect relation between the way the constructs are measured or studied and the constructs themselves (Johnson & Christensen, 2012).

Method

External validity relates to questions of generalisations, samples, and participants (Creswell, 2013; Johnson & Christensen, 2012; Maxwell, 2009). In quantitative research, probability sampling to get a representative sample is used to enable generalisation. However, sampling errors can result in questions about the representation of the sample in terms of generalising to the population (Onwuegbuzie, 2003). Generalisability is not a purpose of a qualitative study, and strategies used are theoretical or purposefully related to the research question (Maxwell, 2009).

Reliability in quantitative research is related to questions of the accuracy of the measurement tool (e.g., internal consistency) and reduction of the variation between researchers using the tool (e.g., interrater reliability) to secure consistency of results over time and reproducibility of results (Johnson & Christensen, 2012; Maxwell, 2009). In a qualitative study, different strategies are used to deal with reliability threats. In Article 1, we were two researchers participating in the analytical process, which reduced the bias, as we experienced. According to Maxwell (2009), reliability in qualitative studies is also ‘understanding how a particular researcher’s values influence the conduct and conclusions of the study’ (p. 243). There is always some uncertainty in analysing both quantitative and qualitative data, however reliability can be strengthened by increasing the transparency of the analytical process.

There are always limitations in studies within educational science in terms of validity and reliability, and the limitations of the current study’s results are discussed in the articles and the final discussion.

Method

5 Results

The results from each of the three part-studies are presented with focus on aim, research question, theoretical and methodological framework, and results.

5.1 Article 1. *Educational language practices described by preschool teachers in Norwegian kindergartens*

The aim was to examine Norwegian kindergarten staff's descriptions of how they support and promote children's language development. The research question was: *What characterises educational language practices as described by preschool teachers in kindergartens with high-quality scores on ITERS-R?*

The study was based on sociocultural theoretical perspectives in order to understand children's language development and the importance of the social context for language acquisition. A qualitative case study design was used, building on qualitative, semi-structured interviews with six preschool teachers in four kindergartens, and field notes were used to support the findings from the interviews.

The analysis resulted in five categories being identified that in sum were interpreted as a holistic dialogical approach. This approach includes that staff are responsive and sensitive, the work is contextualised in both child-initiated and adult-led situations, staff use situated and diverse strategies, planning for learning is seen as important, and there is a flexible use of assessment tools.

These findings show that the preschool teachers interviewed had an approach to supporting and promoting children's language development based on careful considerations about how to create a holistic and rich learning environment for the children, and they valued working with

Results

language stimulation in everyday activities with a child-centred approach.

5.2 Article 2. Language-learning environments and educational language practices in groups of children aged between 1 and 3 in Norwegian ECEC

The focus in the second article was on staff-child verbal interactions. The aim was to examine the verbal language used by staff when they were interacting with children in four child groups. The research question was: *What characterises staff's verbal interactions with children in four toddler groups?*

The study is based on sociocultural theoretical perspectives, where the social context, including adult-child interactions, is understood to have an influence on children's language development. The empirical data was 98 video observations of staff-child verbal interactions. Participants were children and staff from four toddler groups in different settings, and included, in total, 45 children and 17 staff members.

Findings from this study indicate that educational language practices in high-quality language-learning environments are characterised by responsive staff who use rich and contextual language and, to a certain degree, expand on children's utterances and explain meanings of words and/or make logical connections.

These findings show the importance of staff knowledge and skills in interpreting and following up on children's attempts to communicate in order to take advantage of valuable child-initiated learning situations.

5.3 Article 3. ECEC quality and vocabulary development in Norwegian ECEC

The focus in the third article was on associations between the quality of the language-learning environments in toddler groups and children's vocabulary development in Norwegian ECEC. The aim was to investigate the associations between the quality of the language-learning environments (measured by selected items in ITERS-R) in toddler groups and children's vocabulary development from age 3 years (T1) to age 5 years (T2) (measured by BAS3). The hypothesis was that high quality language-based interactions and provision of rich language-learning opportunities have an effect on vocabulary development. Participants included in the study were 1131 children (47.9% girls; age at T1 assessment: $M = 35.5$ months, $SD = 2.69$; age at T2 assessment: $M = 60.3$ months, $SD = 1.4$) from 206 toddler groups from 93 centres.

When controlled for verbal ability at 3 years and the quality experienced in kindergarten groups (assessed at 5 years), the results showed the quality experienced in toddler groups (assessed at 3 years) was associated with higher verbal ability at 5 years. These results point to the importance of a rich and varied language-learning environment in early years.

The conclusion is that toddler language-learning environments characterised by responsive staff who have many conversations, use a wide range of words, and add to children's utterances promote vocabulary development from 3 years to 5 years.

5.4 Summary of the main findings

Overall, this study contributes three main findings. First, educational language practices with children under 3 years in high-quality Norwegian ECEC are characterised by a child-centred holistic approach

Results

to providing a rich and meaningful language-learning environment (Article 1 and Article 2). Second, educational language practices in high-quality ECEC with children under 3 years are characterised by the use of diverse and situated strategies for supporting language learning (Article 1 and Article 2). Third, language-learning environments for children under 3 years characterised by staff being responsive, expanding on children's communication, and facilitating conversations have a positive effect on vocabulary development from 3 to 5 years (Article 3).

In total, these findings highlight the importance of providing a high-quality language-learning environment in children's early years.

6 Discussion

The results from the three part-studies constituting the thesis are discussed in this chapter in order to answer the main research question: *What characterises educational language practices in Norwegian ECEC measured to high quality, and what are the associations between quality of the language-learning environment and vocabulary development?* Based on the findings, three topics will be addressed in the discussion. First, educational language practices will be discussed in relation to a child-centred approach. Second, contextual aspects influencing educational language practices will be discussed. Third, the quality of language-learning environments will be discussed in relation to early language development.

6.1 Diverse and child-centred educational language practices

The results from the first and second part-studies showed a child-centred approach in promoting and supporting language development with children under 3. In the first part-study, analysis of interviews and field notes showed that the preschool teachers emphasised a child-centred approach in planning, work, and assessment. Analysis of staff-child verbal interactions in the second part-study indicated that staff were responsive and followed up on children's initiatives. More detailed in-depth analysis of short excerpts of verbal interactions identified that following up on children's input led to meaningful conversations and child-initiated learning situations. Results from the third part-study identified responsiveness and expanding on children's communication as aspects of the language-learning environment in toddler groups that promoted vocabulary growth.

An overall focus on children's exposure to words was found to be a central strategy. One of the preschool teachers described their work as

Discussion

'bathing children in language' (Article 1) and referred to the importance of the overall exposure to words in everyday situations. Analysis of verbal interactions showed that adding words was present in 84% of the observations and confirms the focus on vocabulary training (Article 2). Children under 3 are in a developmental period where their receptive and expressive vocabulary grows rapidly (Simonsen et al., 2014). The overall focus on vocabulary in practice can be seen in relation to research showing vocabulary as a core aspect of language development and important for later attainment (Aukrust & Rydland, 2009; Grøver, 2017). Research has shown that supporting vocabulary development, especially working on the content and meaning of words, appears to be more common and more easily accessible than working on the sounds of language (phonological awareness). Phonological awareness is an important predictor for later reading skill; however, it has received little attention in the field of ECEC (Carroll, Snowling, Stevenson, & Hulme, 2003).

Findings from this study show that focusing on a rich and varied vocabulary can lead to interactions where children are included in terms of naming objects but not actively engaged in meaningful conversations (Example 1 in Article 2). The conversations were often characterised by staff asking many questions and then repeating the words used by the children, to correct them, or asking new questions often followed up the children's answers. A consequence of not capturing the children's intentions could be more instruction-based conversations that teach words, contrary to the child-centred approach valued. Accordingly, children are then not invited to participate actively in conversations they are commonly exposed to in ECEC. This was also evident in Gjems (2013) study of children over 3, where the results showed that children were mostly invited to answer closed questions and not invited to work together.

The overall focus on vocabulary training and the relatively low number of educational inputs observed in the current study could be related to a

Discussion

lack of knowledge of effective strategies to promote language in everyday situations with children under 3. A study by Vatne and Gjems (2014) showed that only 62% of graduate students from the preschool teacher education reported that they had a large amount of knowledge on how to promote language learning with children under 3.

In contrast, another finding from this study shows that when staff followed the children's initiative they created opportunities for a rich and varied language-learning environment, and the child-centred approach was evident (e.g., Example 2 and Example 4 in Article 2). The results from the first part-study showed that preschool teachers valued working with child-centred conversations by building on children's previous experiences or shared experiences. Findings from the second part-study showed the importance of having the skills and knowledge to fully interpret and follow up on children's input. Adding words and expanding on children's utterances are quality indicators included in the item (Item 13 – Helping children use language from ITERS-R) found to predict vocabulary development in the third part-study. For a high-quality score on this specific item, the staff needed to be observed having many turn-taking conversations, add words and ideas to what the children said, ask simple questions, and maintain a good balance between listening and talking (Cryer et al., 2004).

Educational language practices in high-quality ECEC are characterised by a child-centred approach actively built on children's input, use of familiar experiences, and use of knowledge of children's language skills to support language development. The main strategy identified for supporting language was vocabulary training during everyday conversations, and when following up on children's input the staff created meaningful learning situations. These findings are in line with Erica Hoff in her argument that 'the kind of experience that supports language acquisition is meaningful conversation with an engaged conversational partner who uses a rich vocabulary and varied syntactic structures' (Hoff, 2014, p. 106). This points to the importance of

focusing on the content, giving children experiences beyond vocabulary training in early years.

6.2 *Contextualised educational language practices*

Findings from the first and second part-studies showed contextual aspects influence the characteristics of educational language practices (Article 1 and Article 2). Findings from the first part-study indicated that the preschool teachers described informal situations such as free play, transitions, and mealtimes as contexts for use of a rich and varied vocabulary and child-centred conversations. More formal situations such as circle time were described as situations used for reading and storytelling (Article 1). This approach was also evident in the analysis of the observational data in the second part-study. Analysis of staff-child verbal interactions showed that staff expanded and followed up on the children's own initiative to a large degree in free play and at mealtimes, and only to certain degree during circle time. In contrast, during circle time staff were observed to a larger degree to explain meanings of words and/or make logical connections in cooperation with children, doing so less during free play and mealtimes. Accordingly, in situations where children experienced more educational input, they had fewer opportunities to get their own input included in the ongoing verbal interaction. Finding more staff-initiated interactions and instruction-based practices in adult-led formal situations (e.g., circle time) is in line with research showing that circle time is a frequent setting for instructional input (Phillips, Zhao, & Weekley, 2018) where children's opportunities for influence and participation are limited (Eide, Os, & Samuelsson, 2012). Research has shown that different situations (e.g., free play, mealtime, and circle time) with changing contextual aspects (e.g., small/large child groups, adult-/child-led activities, and planned/unplanned activities) influence educational practices (e.g.,

Discussion

Dickinson & Tabors, 2001; Dwyer & Harbaugh, 2018; Girolametto & Weitzman, 2002).

Findings in the first part-study show that the preschool teachers argued for an active participation in children's play, and the second part-study shows that staff to a large degree respond, add words and expand on children's utterances during free play. The question of how to support children's learning and development in play has often been discussed based on a continuum between child-initiated free play on one side and adult-led play activities, including direct instructions, on the other side (Lillemyr, Dockett, & Perry, 2013). Findings from the first and second show that the preschool teachers tried to keep a balance between participating in the children's play and supporting learning, and giving children space and time to explore by themselves. This balance may explain the lower amount of educational input during free play. This approach is in line with Vygotsky's notion of the ZPD, where the preschool teacher is trying to find a balance between what the children can do independently and what they need guidance to achieve (Vygotsky, 1978).

Mealtime was valued by the preschool teachers as a situation for child-centred conversations (Article 1). Findings from the second part-study showed that staff to a large degree added words and expanded on children's input, and there were fewer instances of explaining (Article 2). Mealtimes in this study included breakfast, lunch, and fruit/snack, and were often situations where the children sat on high chairs around a table. This provided staff with a unique situation to have turn-taking conversations and extended talk on different topics with smaller groups or one-to-one. The examples from mealtimes included in the second part-study show the quality of mealtimes as learning situations. They show the possibilities for working in one-to-one interactions. Moreover, they show how these interactions could be extended to include the whole group (Example 4 in Article 2) or work in smaller groups (Example 2 in Article 2). These findings are in line with research showing the

Discussion

possibilities for meaningful child-initiated learning situations during mealtimes (Bae, 2009; Dickinson & Tabors, 2001).

Circle time was often described by the preschool teachers as a situation for planned activities, and the analysis showed that storytelling with use of artefacts/objects was a common approach (Article 1). The focus on more direct instruction was also evident in the analysis of the observations in the second part-study. Circle time was the situation with the most observed educational input in terms of explaining and least observation of expanding on children's input (Article 2). These findings show that even if the staff take a child-centred approach in planning for learning, the form and intentions of circle time cause more direct instruction. Studies have shown the challenging aspects of including children's input in a planned activity (Emilson & Johansson, 2013). However, studies have also shown that targeted interventions and staff-child conversations with educational input are beneficial for child development (Burger, 2015; Cabell, Justice, McGinty, DeCoster, & Forston, 2015; Camilli, Vargas, Ryan, & Barnett, 2010).

The findings from the first and second part-studies can be interpreted as staff in high-quality settings providing children with an open framework. This includes access to learning environments where staff focus on balancing their engagement to support children's learning. In the REPEY study, Siraj-Blatchford et al. (2002) found that high-quality settings for children over 3 combined the provision of open framework, free-play opportunities, and more focused groupwork involving some direct instruction. The findings in the current study point to the importance of critical reflections on how to plan and implement a framework supporting learning and fostering well-being for children under 3.

6.3 Quality of language-learning environment and early language development

Findings from the third part-study showed that the quality of toddler care was related to expressive vocabulary growth (Article 3). More specifically, Item 13 – Helping children to use language, from the subscale ‘Listening and Talking’ in the ITERS-R, was found to be significantly related to vocabulary development, albeit with an effect that was small in magnitude. A high-quality measure in Item 13 requires responsive staff that have many conversations, use a wide range of words, and add to children’s utterances (Harms et al., 2006).

In the third part-study, a more domain-specific approach was taken to identify critical aspects of ECEC quality related to vocabulary growth. This approach is in line with research showing that using domain-specific approaches is more promising than using global measures of quality (Burchinal, 2018; Dickinson & Porche, 2011; Zaslow et al., 2016). Using global measures of quality has yielded diverging results when trying to study the effect of ECEC quality on developmental domains separately (Burchinal, 2018; Dickinson, 2006). Modelling associations between children’s experiences in ECEC and development is highly complex. Measurements with an inherent domain-independent understanding can be difficult to combine with domain-specific outcomes. The items included in this study from the ITERS-R are specified by the authors of the scale to measure aspects related to development of receptive vocabulary (Item 12), expressive vocabulary (Item 13), and early literacy (Item 14) (Cryer et al., 2004).

The necessity for a more domain-specific approach and focus on the content of staff educational practices has been discussed (Burchinal, 2018; Dickinson, 2006; Zaslow et al., 2011). Burchinal (2018) argues that research on quality should focus more on educational practices (e.g., how staff actively scaffold children’s learning opportunities) and the learning environment (e.g., access to age-appropriate activities).

Discussion

Examining the quality of the language-learning environment using specific measures is more common in research on early language development and early literacy. These studies often include analysis of adult-child conversations, focusing on verbal input in terms of quantity and quality. This approach provides detailed and rich descriptions of educational practices (Dickinson, 2006). However, these studies often include small samples, which makes it difficult to study the relation between environmental support and child development.

The qualitative part of this study presented in the first and second part-studies takes a more fine-grained approach to examining educational language practices and language-learning environments in high-quality settings. The qualitative part combines interviews and observations to study core aspects of the profession of an early childhood educator. The concept of educational language practices was used to focus on the active support for language development, planning for learning, and assessment. The results from the two part-studies included in the qualitative part show the potential for a more detailed understanding of educational practices. A qualitative approach to studying ECEC quality can be useful for practitioners to develop their educational practices.

The results from this study show that combining different approaches has the potential of enhancing our understanding of quality in ECEC and examining the impact of variability of quality on children. The approach taken can be interpreted as a toolkit approach, where global rating scales are combined with more detailed descriptions of educational practices (Dickinson, 2006). More specifically, the results from the rating scales were first used to select cases of interest, these cases were studied in detail, and finally specific aspects of the global scales were related to measures of child development. Combining small-scale qualitative case studies with large-scale quantitative longitudinal studies has provided findings that have been influential in the development of policy and practice (Melhuish, 2016; Sylva et al., 2010).

6.4 Implications for practice

Staff in ECEC are constantly working on creating a high-quality language-learning environment and supporting children's language learning. They are introduced to various theoretical perspectives and findings from research throughout their preschool teacher education and in-service professional development programmes. One of their main tasks as practitioners is to convert and use the knowledge gained to provide children with the best possible environment for development and well-being. Likewise, it is important for researchers to conduct and present research that can be used to inform and develop the field of practice.

Biesta (2007) presents a twofold perspective on the use of educational research in professional development. On one side, there is research that takes a technical role by focusing on child outcomes and presenting effective practices. On the other side, there is research that takes a cultural role and reports different interpretations and present understandings of educational practices. The present study takes both roles. Findings in the third part-study are related to the 'what works' perspective. This part-study adds knowledge on what aspects of language-learning environments seem to have an effect on children's vocabulary development. An important task for both researchers and practitioners is to carefully interpret and use the knowledge produced in a critical way to inform practice. The first and second part-studies relate to the cultural role of educational research by presenting interpretations and understandings of educational language practices in high-quality ECEC. These part-studies take into account social and cultural aspects in the results; however, the results also need to be carefully interpreted (e.g., in relation to the theoretical framework).

In summary, the findings from this study can contribute to identifying some context-sensitive hallmarks of good educational language practices supporting language development with children under 3. In that matter,

it can provide knowledge to staff in ECEC that can be used to identify and discuss their educational work on language with children under 3. Moreover, the findings can contribute to children having experiences in ECEC that foster their language development.

6.5 Limitations and future research

Further to the limitations discussed in the three part-studies, there are some general limitations related to the study's theoretical framework and methodology that are noteworthy.

This study is placed within the Nordic social pedagogical tradition, in terms of both the studied field (i.e., Norwegian ECEC) and the theoretical framework (i.e., sociocultural perspective). Social interaction is highlighted in this perspective and understood as a driving force for human learning and development. This has influenced the theoretical concepts (i.e., ZPD, scaffolding, sustained shared thinking) used for analysing the empirical data. Moreover, there is a focus on ECEC quality as being a part of the GoBaN project. These aspects have influenced the choices of theory used and conclusions. Use of other theoretical perspectives and research could have given different results (e.g., focus on attachment theory, social and emotional development, participation, and peer-to-peer interaction). However, these perspectives would not, to my knowledge, have given a more comprehensive understanding of the research questions asked.

Furthermore, there are some methodological limitations. A multimethod approach has a great potential for enhancing the quality of the study. However, this depends on the possibilities for combining findings contributing to informing the study's conclusions. In this study, the quantitative data was used to select cases. However, the longitudinal data on child development was not collected at the time the qualitative case study was conducted. Therefore, the results were first combined at the end. Another noteworthy limitation is the sample in the qualitative case

Discussion

study. There are only high-quality settings included, making a comparison between centres with high and low quality impossible. However, including low quality centres would not contribute to enriching the understanding of good educational practices.

Several topics could expand on the findings from this study:

- To what extent does ECEC teacher education qualify teachers to create rich and varied language-learning environments for all children?
- How are children from cultural and linguistic minorities included in the language-learning environment and educational language practices?
- What are the effects of peer-to-peer interactions on language development, and how do ECEC staff facilitate meaningful interactions between peers?
- What are the effects of quality in language-learning environments on other aspects of language development (e.g., receptive vocabulary, phonological awareness)?
- What are the long-term effects of high-quality language-learning environments?

These research questions are just some examples of what could be given attention in future research.

Discussion

7 References

- Alvesson, M., & Sköldberg, K. (2008). *Tolkning och reflektion : vetenskapsfilosofi och kvalitativ metod*. Lund: Studentlitteratur.
- Alvestad, M. (2004). Preschool teachers' understandings of some aspects of educational planning and practice related to the national curricula in Norway. *International Journal of Early Years Education*, 12(2), 83–97.
- Asendorpf, J. B., van de Schoot, R., Denissen, J. J. A., & Hutteman, R. (2014). Reducing bias due to systematic attrition in longitudinal studies: The benefits of multiple imputation. *International Journal of Behavioral Development*, 38(5), 453–460.
doi:10.1177/0165025414542713
- Aukrust, V. G., & Rydland, V. (2009). Barnehagens kvalitet og skolefaglig læring: en kunnskapsoversikt. *Norsk pedagogisk tidsskrift*, 93(3), 178–188.
- Backe-Hansen, E. (2009). “Barn”. Retrieved from <https://www.etikkom.no/FBIB/Temaer/Forskning-pa-bestemte-grupper/Barn/>
- Bae, B. (2009). Samspill mellom barn og voksne ved måltidet. Muligheter for medlæring? *Nordisk Barnehageforskning*, 2(1).
doi:10.7577/nbf.246
- Baldwin, D., & Meyer, M. (2008). How inherently social is language? In E. Hoff & M. Schatz (Eds.), *Blackwell handbook of language development* (pp. 87–106). Blackwell Publishing Ltd.
- Barne-familiedepartementet. (1999). *Barnehage til beste for barn og foreldre*. Oslo: Barne- og familiedepartementet.
- Bavin, E. L. (2009). Introduction. In E. L. Bavin (Ed.), *The Cambridge handbook of child language* (pp. 1–12). Cambridge: Cambridge University Press.
- Behme, C., & Deacon, S. H. (2008). Language learning in infancy: Does the empirical evidence support a domain specific language acquisition device? *Philosophical Psychology*, 21(5), 641–671.
doi:10.1080/09515080802412321
- Biesta, G. (2007). Bridging the gap between educational research and educational practice: The need for critical distance. *Educational*

References

- Research and Evaluation*, 13(3), 295–301.
doi:10.1080/13803610701640227
- Bisceglia, R., Perlman, M., Schaack, D., & Jenkins, J. (2009). Examining the psychometric properties of the infant-toddler environment rating scale-revised edition in a high-stakes context. *Early Childhood Research Quarterly*, 24(2), 121–132. doi:10.1016/j.ecresq.2009.02.001
- Bjørnestad, E., Gulbrandsen, L., Johansson, J.-E., & Os, E. (2013). *Metodiske idealkrav og nødvendige tilpasninger*. Høgskolen i Oslo og Akershus.
- Bjørnestad, E., & Os, E. (2018). Quality in Norwegian childcare for toddlers using ITERS-R. *European Early Childhood Education Research Journal*, 26(1), 111–127. doi:10.1080/1350293X.2018.1412051
- Bjørnestad, E., Pramling Samuelsson, I., & Bae, B. (2012). *Hva betyr livet i barnehagen for barn under tre år? : en forskningsoversikt*. Oslo: Høgskolen i Oslo og Akershus.
- Bjørnestad, E., Tuastad, S., & Alvestad, M. (2017). Kvaliteten i norske barnehagar: Eit nytt Pisa-sjokk? In I. Studsrød & S. Tuastad (Eds.), *Barneomsorg på norsk : i samspill og spenning mellom hjem og stat*. Oslo: Universitetsforl.
- Blaikie, N. (2010). *Designing social research: The logic of anticipation* (2nd ed.). Cambridge: Polity Press.
- Bogdan, R., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theory and methods* (5th ed.). Boston, MA: Pearson A & B.
- Bohannon, J. N. I., & Bonvillian, J. D. (2013). Theoretical approaches to language acquisition. In J. B. Gleason & N. B. Ratner (Eds.), *The development of language* (8th ed.). Boston: Pearson.
- Bornstein, M. H., Hahn, C.-S., Putnick, D. L., & Suwalsky, J. T. D. (2013). Stability of core language skill from early childhood to adolescence: A latent variable approach. *Child Development*, 85(4), 1346–1356.
- Bowers, E. P., & Vasilevaya, M. (2011). The relation between teacher input and lexical growth of preschoolers. *Applied Psycholinguistics*, 32(1), 221–241.
- Bruner, J. S. (1996). *The culture of education*. Cambridge, MA: Harvard University Press.

References

- Bruner, J. S. (1997). *Utdanningskultur og læring*. Oslo: Ad notam Gyldendal.
- Burchinal, M. R. (2018). Measuring early care and education quality. *Child Development Perspectives*, 12(1), 3–9. doi:10.1111/cdep.12260
- Burchinal, M. R., Howes, C., Pianta, R., Bryant, D., Early, D., Clifford, R., & Barbarin, O. (2008). Predicting child outcomes at the end of kindergarten from the quality of pre-kindergarten teacher-child interactions and instruction. *Applied Developmental Science*, 12(3), 140–153. doi:10.1080/10888690802199418
- Burchinal, M. R., Roberts, J. E., Riggins, R., Jr., Zeisel, S. A., Neebe, E., & Bryant, D. (2000). Relating quality of center-based child care to early cognitive and language development longitudinally. *Child Development*, 71(2), 339–357.
- Burger, K. (2015). Effective early childhood care and education: Successful approaches and didactic strategies for fostering child development. *European Early Childhood Education Research Journal*, 23(5), 743–760. doi:10.1080/1350293X.2014.882076
- Cabell, S. Q., Justice, L. M., McGinty, A. S., DeCoster, J., & Forston, L. D. (2015). Teacher-child conversations in preschool classrooms: Contributions to children's vocabulary development. *Early Childhood Research Quarterly*, 30, 80–92.
- Cabell, S. Q., Justice, L. M., Piasta, S. B., Curenton, S. M., Wiggins, A., Turnbull, K. P., & Petscher, Y. (2011). The impact of teacher responsiveness education on preschoolers' language and literacy skills. *American Journal of Speech-Language Pathology*, 20(4), 315–330. doi:10.1044/1058-0360(2011/10-0104)
- Camilli, G., Vargas, S., Ryan, S., & Barnett, W. S. (2010). Meta-analysis of the effects of early education interventions on cognitive and social development. *Teachers College Record*, 112(3), 579–620.
- Carroll, J. M., Snowling, M. J., Stevenson, J., & Hulme, C. (2003). The development of phonological awareness in preschool children. *Developmental Psychology*, 39(5), 913–923.
- Cassidy, D. J., Hestenes, L. L., Hegde, A., Hestenes, S., & Mims, S. (2005). Measurement of quality in preschool child care classrooms: An exploratory and confirmatory factor analysis of

References

- the early childhood environment rating scale-revised. *Early Childhood Research Quarterly*, 20(3), 345–360. doi:10.1016/j.ecresq.2005.07.005
- Chapman, R. S. (2000). Children's language learning: An interactionist perspective. *Journal of Child Psychology and Psychiatry*, 41(1), 33–54. doi:10.1111/1469-7610.00548
- Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. Los Angeles, CA: SAGE.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Los Angeles, CA: SAGE.
- Cryer, D., Harms, T., & Riley, C. (2003). *All about the ECERS-R*. New York: Teacher College Press.
- Cryer, D., Harms, T., & Riley, C. (2004). *All about the ITERS-R*. New York: Teacher College Press.
- Dalli, C., White, E. J., Rockel, J., Buchanan, E., Davidson, S., Ganly, S., . . . Wang, B. (2011). *Quality early childhood education for under-two-year-olds: What should it look like? A literature review*. New Zealand: Ministry of Education.
- Denzin, N. K., & Lincoln, Y. S. (2013). *Collecting and interpreting qualitative materials* (4th ed.). Los Angeles: SAGE.
- Dickinson, D. K. (2006). Toward a toolkit approach to describing classroom quality. *Early Education and Development*, 17(1), 177–202. doi:10.1207/s15566935eed1701_8
- Dickinson, D. K. (2011). Teachers' language practices and academic outcomes of preschool children. *Science*, 333, 964–967.
- Dickinson, D. K. (2012). Approaches to studying language in preschool classrooms. In E. Hoff (Ed.), *Research methods in child language: An introduction*. Chichester: Wiley-Blackwell.
- Dickinson, D. K., & Porche, M. V. (2011). Relation between language experiences in preschool classrooms and children's kindergarten and fourth-grade language and reading abilities. *Child Development*, 82(3), 870–886. doi:10.1111/j.1467-8624.2011.01576.x
- Dickinson, D. K., & Tabors, P. O. (2001). *Beginning literacy with language: Young children learning at home and school*. Baltimore, MD: P. H. Brookes Pub. Co.
- Dwyer, J., & Harbaugh, A. G. (2018). Where and when is support for vocabulary development occurring in preschool classrooms?

References

- Journal of Early Childhood Literacy.*
doi:10.1177/1468798418763990
- Ebert, S., Lockl, K., Weinert, S., Anders, Y., Kluczniok, K., & Rossbach, H.-G. (2013). Internal and external influences on vocabulary development in preschool children. *School Effectiveness and School Improvement*, 24(2), 138–154.
doi:10.1080/09243453.2012.749791
- Eide, B. J., Os, E., & Samuelsson, I. P. (2012). Små barns medvirkning i samlingsstunder. *Nordisk barnehageforskning [elektronisk ressurs]*, 5(4), 1-21.
- Eliassen, E., Zachrisson, H. D., & Melhuish, E. (2017). Is cognitive development at three years of age associated with ECEC quality in Norway? *European Early Childhood Education Research Journal*, 26(1), 1–14. doi:10.1080/1350293X.2018.1412050
- Elliot, C. (2011). *BAS3 – Administration and scoring manual*. London: GL Assessment Limited.
- Emilson, A., & Johansson, E. (2013). Participation and gender in circle-time situations in preschool. *International Journal of Early Years Education*, 21(1), 56–69.
doi:10.1080/09669760.2013.771323
- Enders, C. K. (2010). *Applied missing data analysis*. New York: Guilford Press.
- Fetterman, D. M. (2010). *Ethnography: Step-by-step* (3rd ed.). Los Angeles, CA: SAGE.
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, 12(2), 219–245.
doi:10.1177/1077800405284363
- Ganger, J., Brent, M. R., & Dannemiller, J. L. (2004). Reexamining the vocabulary spurt. *Developmental Psychology*, 40(4), 621–632.
doi:10.1037/0012-1649.40.4.621
- Garmann, N. G., & Torkildsen, J. v. K. (2016). Barns språkutvikling de første tre årene. In H. G. Simonsen & H.-O. Enger (Eds.), *Helt fabelaktig! : festskrift til Hanne Gram Simonsen på 70-årsdagen*. Oslo: Novus.
- Girolametto, L., & Weitzman, E. (2002). Responsiveness of child care providers in interactions with toddlers and preschoolers. *Language, Speech & Hearing Services in Schools*, 33(4), 268.

References

- Gjems, L. (2013). Teaching in ECE: Promoting children's language learning and cooperation on knowledge construction in everyday conversations in kindergarten. *Teaching and Teacher Education: An International Journal of Research and Studies*, 29, 39–45. doi:10.1016/j.tate.2012.08.008
- Gordon, R. A., Fujimoto, K., Kaestner, R., Korenman, S., & Abner, K. (2013). An assessment of the validity of the ECERS-R with implications for measures of child care quality and relations to child development. *Developmental Psychology*, 49(1), 146–160. doi:10.1037/a0027899
- Gordon, R. A., Hofer, K. G., Fujimoto, K. A., Risk, N., Kaestner, R., & Korenman, S. (2015). Identifying high-quality preschool programs: New evidence on the validity of the early childhood environment rating scale—revised (ECERS-R) in relation to school readiness goals. *Early Education and Development*, 26(8), 1086–1110. doi:10.1080/10409289.2015.1036348
- Grøver, V. (2017). Fostering vocabulary in early childhood education. In N. Kucirkova (Ed.), *The Routledge international handbook of early literacy education: A contemporary guide to literacy teaching and interventions in a global context* (pp. 284–294). Routledge.
- Grøver, V. (2018). *Å lære språk i barnehagen : kvaliteter ved barns samhandling med voksne og jevnaldrende som fremmer språklæring*. Oslo: Cappelen Damm akademisk.
- Gulbrandsen, L. (2017). Barnehagen er utvokst. *Kronikk på Barnehage.no*. Retrieved from <https://www.barnehage.no/artikler/barnehagene-er-utvokst/427216>.
- Gulbrandsen, L., & Eliassen, E. (2013). Kvalitet i barnehager. Oslo: Norsk institutt for forskning om oppvekst, velferd og aldring.
- Gulbrandsen, L., & Sundnes, A. (2004). *Fra best til bedre? : kvalitetssatsing i norske barnehager : statusrapport ved kvalitetssatsingsperiodens slutt*. Oslo: Nova.
- Håberg, L. I. A. (2015). *Didaktisk arbeid i barnehagen : kvalitativ studie av korleis assistenter og barnehagelærarar planlegg, gjennomfører og vurderer samlingsstund og femårsklubb* (nr. 227). Oslo: Det utdanningsvitenskapelige fakultet, Universitetet i Oslo.

References

- Hansen, J. E., & Alvestad, M. (2017). Educational language practices described by preschool teachers in Norwegian kindergartens. *European Early Childhood Education Research Journal*, 26(1), 128–141. doi:10.1080/1350293X.2018.1412052
- Harms, T., Clifford, R. M., & Cryer, D. (2005). *Early childhood environment rating scale – Revised edition*. Teachers College, Columbia University.
- Harms, T., Cryer, D., & Clifford, R. (2006). *Infant/Toddler environment rating scale - Revised edition*. New York: Teachers College Press.
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: P. H. Brookes.
- Havnes, T., & Mogstad, M. (2015). Is universal child care leveling the playing field? *Journal of Public Economics*, 127, 100–114. doi:10.1016/j.jpubeco.2014.04.007
- Helmerhorst, K. O. W., Riksen-Walraven, J. M., Vermeer, H. J., Fukkink, R. G., & Tavecchio, L. W. C. (2014). Measuring the interactive skills of caregivers in child care centers: Development and validation of the caregiver interaction profile scales. *Early Education and Development*, 25(5), 770–790. doi:10.1080/10409289.2014.840482
- Hoff, E. (2006). How social contexts support and shape language development. *Developmental Review*, 26(1), 55–88.
- Hoff, E. (2014). *Language development* (5th ed.). Australia: Wadsworth Cengage Learning.
- Hoff, E., & Naigles, L. (2002). How children use input to acquire a lexicon. *Child Development*, 73(2), 418–433.
- Howes, C., Burchinal, M., Pianta, R., Bryant, D., Early, D., Clifford, R., & Barbarin, O. (2008). Ready to learn? Children's pre-academic achievement in pre-kindergarten programs. *Early Childhood Research Quarterly*, 23(1), 27–50. doi:10.1016/j.ecresq.2007.05.002
- Howes, C., Phillips, D. A., & Whitebook, M. (1992). Thresholds of quality: Implications for the social development of children in center-based child care. *Child Development*, 63(2), 449–460. doi:10.2307/1131491

References

- Hox, J. J., Moerbeek, M., & van de Schoot, R. (2010). *Multilevel analysis: Techniques and applications*. Routledge.
- Huttenlocher, J., Waterfall, H., Vasilyeva, M., Vevea, J., & Hedges, L. V. (2010). Sources of variability in children's language growth. *Cognitive Psychology*, 61(4), 343–365.
doi:10.1016/j.cogpsych.2010.08.002
- Jacoby, J. W., & Lesaux, N. K. (2014). Support for extended discourse in teacher talk with linguistically diverse preschoolers. *Early Education and Development*, 25(8), 1162–1179.
doi:10.1080/10409289.2014.907695
- Johnson, B., & Christensen, L. B. (2012). *Educational research: Quantitative, qualitative, and mixed approaches* (4th ed.). Los Angeles, CA: Sage.
- Justice, L., Jiang, H., & Strassner, K. (2018). Linguistic environment of preschool classrooms: What dimensions support children's language growth? *Early Childhood Research Quarterly*, 42, 79–92. doi:10.1016/j.ecresq.2017.09.003
- Keys, T. D., Farkas, G., Burchinal, M. R., Duncan, G. J., Vandell, D. L., Li, W., . . . Howes, C. (2013). Preschool center quality and school readiness: Quality effects and variation by demographic and child characteristics. *Child Development*, 84(4), 1171–1190. doi:10.1111/cdev.12048
- Klem, M., Hagtvæt, B., Hulme, C., & Gustafsson, J.-E. (2016). Screening for language delay: Growth trajectories of language ability in low- and high-performing children. *Journal of Speech, Language, and Hearing Research*, 59(5), 1035–1045.
doi:10.1044/2016_JSLHR-L-15-0289
- Kunnskapsdepartementet. (2009). *Kvalitet i barnehagen*. Oslo: Kunnskapsdepartementet.
- Kunnskapsdepartementet. (2011). *Rammeplan for barnehagen: innhold og oppgaver*. Oslo: Kunnskapsdepartementet.
- Kunnskapsdepartementet. (2013). *Framtidens barnehage*. Oslo: Departementenes servicesenter.
- Kunnskapsdepartementet. (2016). *Tid for lek og læring : bedre innhold i barnehagen*. Oslo: Departementenes sikkerhets- og serviceorganisasjon.

References

- Kvale, S., Brinkmann, S., Anderssen, T. M., & Rygge, J. (2015). *Det kvalitative forskningsintervju* (3. utg., 2. oppl. ed.). Oslo: Gyldendal akademisk.
- La Paro, K., Williamson, A., & Hatfield, B. (2014). Assessing quality in toddler classrooms using the CLASS-Toddler and the ITERS-R. *Early Education and Development*, 25(6), 875–893. doi:10.1080/10409289.2014.883586
- Lekhal, R., Zachrisson, H. D., Wang, M. V., Schjølberg, S., & von Soest, T. (2011). Does universally accessible child care protect children from late talking? Results from a Norwegian population-based prospective study. *Early Child Development and Care*, 181(8), 1007–1019.
- Lillemyr, O. F., Dockett, S., & Perry, B. (2013). *Varied perspectives on play and learning: Theory and research on early years education*. Charlotte, NC: Information Age Publishing.
- Lohmander, M. K., Vandenbroeck, M., Pirard, F., Peeters, J., & Alvestad, M. (2009). New developments. *European Early Childhood Education Research Journal*, 17(3), 407–424. doi:10.1080/13502930903101610
- Manning, M., Garvis, S., Fleming, C., & Wong, G. T. W. (2017). The relationship between teacher qualification and the quality of the early childhood care and learning environment. *Campbell Systematic Reviews*, 13.
- Marchman, V. A., & Fernald, A. (2008). Speed of word recognition and vocabulary knowledge in infancy predict cognitive and language outcomes in later childhood. *Developmental Science*, 11(3), 9–16. doi:10.1111/j.1467-7687.2008.00671.x
- Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., . . . Howes, C. (2008). Measurement of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development*, 79(3), 732–749. doi:10.1111/j.1467-8624.2008.01154.x
- Maxwell, J. A. (2009). Designing a qualitative study. In L. Bickman & D. J. Rog (Eds.), *The SAGE handbook of applied social research methods* (2nd ed.). Thousand Oaks, CA: SAGE.
- Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd ed.). Los Angeles, CA: SAGE.

References

- Mayer, D., & Beckh, K. (2016). Examining the validity of the ECERS-R: Results from the German national study of child care in early childhood. *Early Childhood Research Quarterly*, 36, 415–426. doi:10.1016/j.ecresq.2016.01.001
- McCartney, K. (1984). Effect of quality of day care environment on children's language development. *Developmental Psychology*, 20(2), 244–260. doi:10.1037/0012-1649.20.2.244
- Melby-Lervåg, M., & Lervåg, A. (2014). Språklig utvikling hos barn fra null til fem år. In V. Glaser, I. Størksen, & M. B. Drugli (Eds.), *Utvikling, lek og læring i barnehagen : forskning og praksis*. Bergen: Fagbokforl.
- Melby-Lervåg, M., Lervåg, A., Lyster, S.-A. H., Klem, M., Hagtvet, B., & Hulme, C. (2012). Nonword-repetition ability does not appear to be a causal influence on children's vocabulary development. *Psychological Science*, 23(10), 1092–1098. doi:10.1177/0956797612443833
- Melhuish, E. (2011). Preschool matters. *Science*, 333(6040), 299–300. doi:10.1126/science.1209459
- Melhuish, E. (2016). Longitudinal research and early years policy development in the UK. *International Journal of Child Care and Education Policy*, 10(1). doi:10.1186/s40723-016-0019-1
- Melhuish, E., Erek-Stevens, K., Petrogiannis, K., Ariescu, A., Penderi, E., Rentzou, K., . . . Leseman, P. (2015). A review of research on the effects of early childhood education and care (ECEC) upon child development. CARE project; Curriculum quality analysis and impact review of European early childhood education and care (ECEC). Available at <http://ecec-care.org/resources/publications/>
- Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. ERIC.
- Morgan, D. L. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry*, 20(8), 1045–1053. doi:10.1177/1077800413513733
- Muthén, L., & Muthén, B. (2013). Mplus (Version 7.11). Los Angeles, CA: Muthén & Muthén.

References

- The National Committee for Research Ethics in the Social Sciences and the Humanities. (2016). *Guidelines for research ethics in the social sciences, humanities, law and theology* (4th ed.).
- National Institute of Child Health and Human Development. (2000). The relation of child care to cognitive and language development. *Child Development*, 71(4), 960–980.
- Ninio, A., & Snow, C. (1999). The development of pragmatics: Learning to use language appropriately. In T. K. Bhatia & W. C. E. Ritchie (Eds.), *Handbook of language acquisition* (pp. 347–383). New York: Academic Press.
- Onwuegbuzie, A. J. (2003). Expanding the framework of internal and external validity in quantitative research. *Research in the Schools*, 10(1), 71–89.
- Onwuegbuzie, A. J., & Leech, N. L. (2005). On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies. *International Journal of Social Research Methodology*, 8(5), 375–387.
doi:10.1080/13645570500402447
- Organisation for Economic Co-operation and Development. (2001). *Starting strong: Early childhood education and care*. Paris: OECD Publishing.
- Organisation for Economic Co-operation and Development. (2006). *Starting strong II: Early childhood education and care*.
- Organisation for Economic Co-operation and Development. (2012). *Starting strong III: A quality toolbox for early childhood education and care*. Paris: OECD Publishing.
- Organisation for Economic Co-operation and Development. (2015a). *Early childhood education and care policy review Norway*.
- Organisation for Economic Co-operation and Development. (2015b). *Starting strong IV*. OECD Publishing.
- Organisation for Economic Co-operation and Development. (2017). *Starting strong V*. OECD Publishing.
- Østrem, S., Tholin, K. R., Nordtømme, S., Jansen, T. T., Hogsnes, H. D., & Bjar, H. (2009). *Alle teller mer: en evaluering av hvordan Rammeplan for barnehagens innhold og oppgaver blir innført, brukt og erfart*. Tønsberg: Høgskolen i Vestfold.
- Pan, B. A., Rowe, M. L., Singer, J. D., & Snow, C. E. (2005). Maternal correlates of growth in toddler vocabulary production in low-

References

- income families. *Child Development*, 76(4), 763–782.
doi:10.1111/j.1467-8624.2005.00876.x
- Perlman, M., Zellman, G. L., & Le, V.-N. (2004). Examining the psychometric properties of the early childhood environment rating scale-revised (ECERS-R). *Early Childhood Research Quarterly*, 19(3), 398–412. doi:10.1016/j.ecresq.2004.07.006
- Pettersen, S. J. H. S. (2014). *Små barn i testsituasjoner - en fenomenologisk-hermeneutisk studie om små barns trivsel* (Master's thesis, Stavanger University, Norway). Retrieved from <http://hdl.handle.net/11250/221769>
- Phillips, B. M., Zhao, Y., & Weekley, M. J. (2018). Teacher language in the preschool classroom: Initial validation of a classroom environment observation tool. *Early Education and Development*, 29(3), 379–397.
doi:10.1080/10409289.2017.1408371
- Phillipsen, L. C., Burchinal, M. R., Howes, C., & Cryer, D. (1997). The prediction of process quality from structural features of child care. *Early Childhood Research Quarterly*, 12(3), 281–303.
doi:10.1016/S0885-2006(97)90004-1
- Rowe, M. L. (2012). A longitudinal investigation of the role of quantity and quality of child-directed speech vocabulary development. *Child Development*, 83(5), 1762–1774. doi:10.1111/j.1467-8624.2012.01805.x
- Rowe, M. L., Raudenbush, S. W., & Goldin-Meadow, S. (2012). The pace of vocabulary growth helps predict later vocabulary skill. *Child Development*, 83(2), 508–525. doi:10.1111/j.1467-8624.2011.01710.x
- Ruzek, E., Burchinal, M., Farkas, G., & Duncan, G. J. (2014). The quality of toddler child care and cognitive skills at 24 months: Propensity score analysis results from the ECLS-B. *Early Childhood Research Quarterly*, 29(1), 12–21.
doi:10.1016/j.ecresq.2013.09.002
- Sandvik, M., Garmann, N. G., & Tkachenko, E. (2014). *Synteserapport om skandinavisk forskning på barns språk og språkmiljø i barnehagen i tidsrommet 2006–2014*. Oslo: Høgskolen i Oslo og Akershus.
- Scarborough, H. S. (2009). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In F.

References

- Fletcher-Campbell, J., Soler, & G. Reid (Eds.), *Approaching difficulties in literacy development: Assessment, pedagogy, and programmes* (pp. 23–39). SAGE.
- Sheridan, S., Pramling Samuelsson, I., & Johansson, E. (2009). *Barns tidiga lärande : en tvärsnittsstudie om förskolan som miljö för barns lärande*. Gothenburg: Acta Universitatis Gothoburgensis.
- Simonsen, H. G., Kristoffersen, K. E., Bleses, D., Wehberg, S., & Jørgensen, R. N. (2014). The Norwegian communicative development inventories: Reliability, main developmental trends and gender differences. *First Language*, 34(1), 3–23.
doi:10.1177/0142723713510997
- Siraj-Blatchford, I. (2009). Conceptualising progression in the pedagogy of play and sustained shared thinking in early childhood education: A Vygotskian perspective. *Education and Child Psychology*, 26(2), 77–89.
- Siraj-Blatchford, I., Sylva, K., Mutton, S., Gilden, R., & Bell, D. (2002). *Researching effective pedagogy in the early years*. Department for Education and Skills.
- Siraj-Blatchford, I., Sylva, K., Taggart, B., Sammons, P., Melhuish, E., & Elliot, K. (2003). *Technical paper 10 – Intensive case studies of practice across the foundation stage*. London: Department for Education and Skills.
- Siraj-Blatchford, I., & Manni, L. (2008). ‘Would you like to tidy up now?’ An analysis of adult questioning in the English Foundation Stage. *Early Years*, 28(1), 5–22.
doi:10.1080/09575140701842213
- Slot, P. L., Leseman, P. P. M., Verhagen, J., & Mulder, H. (2015). Associations between structural quality aspects and process quality in Dutch early childhood education and care settings. *Early Childhood Research Quarterly*, 33, 64–76.
doi:10.1016/j.ecresq.2015.06.001
- Snow, C. E. (1999). Social perspectives on the emergence of language. In B. MacWhinney (Ed.), *The emergence of language* (pp. 257–276). Mahwah, NJ: Lawrence Erlbaum.
- Sommersel, H. B., Vestergaard, S., & Søgaard Larsen, M. (2013). *Kvalitet i barnehager i skandinavisk forskning 2006–2011 : en systematisk forskningskartlegging*. København: Dansk Clearinghouse for uddannelsesforskning.

References

- Spinath, F. M., Price, T. S., Dale, P. S., & Plomin, R. (2004). The genetic and environmental origins of language disability and ability. *Child Development*, 75(2), 445–454.
- Statistics Norway. (2017). Befolknings utdanningsnivå, [Educational level]. Retrieved from <https://www.ssb.no/utniv/>
- Statistics Norway. (2018). Barnehager [ECEC]. Retrieved from <https://www.ssb.no/utdanning/statistikker/barnehager>
- Stone, C. A. (2004). Contemporary approaches to the study of language and literacy development. In C. A. Stone, E. R. Silliman, B. J. Ehren, & K. Apell (Eds.), *Handbook of language and literacy – Development and disorders* (pp. 3–25). New York: The Guilford Press.
- Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology*, 38(6), 934–947.
- Stromswold, K. (2001). The heritability of language: A review and metaanalysis of twin, adoption, and linkage studies. *Language*, 77(4), 647–723. Retrieved from <http://www.jstor.org/stable/3086845>
- Sylva, K., Siraj-Blatchford, I., & Taggart, B. (2003). *Assessing quality in the early years – Early childhood environment rating scale extension (ECERS-E): Four curricular subscales*. Stoke-on-Trent: Trentham Books.
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2004). *The effective provision of pre-school education (EPPE) project: The final report: Effective pre-school education*. Department for Education and Skills.
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2010). *Early childhood matters: Evidence from the effective pre-school and primary education project*. London: Routledge.
- Sylva, K., Siraj-Blatchford, I., Taggart, B., Sammons, P., Melhuish, E., Elliot, K., & Totsika, V. (2006). Capturing quality in early childhood through environmental rating scales. *Early Childhood Research Quarterly*, 21(1), 76–92.
doi:10.1016/j.ecresq.2006.01.003

References

- Tamis-LeMonda, C. S., Bornstein, M. H., & Baumwell, L. (2001). Maternal responsiveness and children's achievement of language milestones. *Child Development*, 72(3), 748–767.
- Tetzchner, S. v. (2012). *Utviklingspsykologi* (2. utg. ed.). Oslo: Gyldendal akademisk.
- Utdanningsdirektoratet. (2013). *Språk i barnehagen : mye mer enn bare prat: en veileder om språkstimulering, dokumentasjon og vurdering av språk, språktilegnelse*. Oslo: Utdanningsdirektoratet
- Utdanningsdirektoratet. (2018). *Utdanningsspeilet 2017 -Tall og analyse av barnehager og grunnopplæringen i Norge*. Oslo: Utdanningsdirektoratet.
- Vandell, D. L., Belsky, J., Burchinal, M., Steinberg, L., Vandergrift, N., & NICHD Early Child Care Research Network. (2010). Do effects of early child care extend to age 15 years? Results from the NICHD study of early child care and youth development. *Child Development*, 81(3), 737–756. doi:10.1111/j.1467-8624.2010.01431.x
- Vassenden, A., Thygesen, J., Brosvik Bayer, S., Alvestad, M., & Abrahamsen, G. (2011). *Barnehagenes organisering og strukturelle faktorers betydning for kvalitet*. Stavanger: International Research Institute of Stavanger.
- Vatne, B., & Gjems, L. (2014). Barnehagelæreres arbeid med barns språklæring. *Norsk pedagogisk tidsskrift*, 98(2), 115–126.
- Veraksa, N., Shiyan, O., Shiyan, I., Pramling, N., & Pramling Samuelsson, I. (2016). Communication between teacher and child in early child education: Vygotskian theory and educational practice. *Infancia y Aprendizaje*, 39(2), 221–243. doi:10.1080/02103702.2015.1133091
- Vermeer, H. J., van IJzendoorn, M. H., Cárcamo, R. A., & Harrison, L. J. (2016). Quality of child care using the environment rating scales: A meta-analysis of international studies. *International Journal of Early Childhood*, 48(1), 33–60. doi:10.1007/s13158-015-0154-9
- Vist, T., & Alvestad, M. (2012). *Læringskulturer i barnehagen: flerfaglige forskningsperspektiver*. Oslo: Cappelen Damm akademisk.

References

- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Weizman, Z. O., & Snow, C. E. (2001). Lexical output as related to children's vocabulary acquisition: Effects of sophisticated exposure and support for meaning. *Developmental Psychology*, 37(2), 265–279. doi:10.1037/0012-1649.37.2.265
- Wertsch, J. V., Cole, M., & Leont'ev, A. N. (1981). *The concept of activity in Soviet psychology*. Armonk, NY: M. E. Sharpe.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17(2), 89–100. doi:10.1111/j.1469-7610.1976.tb00381.x
- Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Los Angeles, CA: SAGE.
- Zaslow, M., Anderson, R., Redd, Z., Wessel, J., Daneri, P., Green, K., . . . Martinez-Beck, I. (2016). I. Quality thresholds, features, and dosage in early care and education: Introduction and literature review. *Monographs of the Society for Research in Child Development*, 81(2), 7–26. doi:10.1111/mono.12236
- Zaslow, M., Martinez-Beck, I., Tout, K., Halle, T., & Ginsburg, H. P. (Eds.). (2011). *Quality measurement in early childhood settings*. Brookes Publishing.

Appendices

Appendix 1 – *Information letter including declaration of consent*

Joakim Evensen Hansen, Ph.D.-stipendiat
Universitetet i Stavanger
Institutt for barnehagelærerutdanning
4036 Stavanger

Til foresatte på avdeling ... i ... barnehage

Stavanger, dato

Forespørsl om deltagelse i forskningsprosjektet «Språkarbeid i barnehagen»

Dette er en forespørsl om å delta i studien «Språkarbeid i barnehagen», der jeg vil undersøke hvordan barnehagen arbeider med barns språklige utvikling i småbarnsavdelinger.

Studien er en del av forskningsprosjektet GoBaN ('Gode barnehager for barn i Norge'). GoBaN er det største forskningsprosjektet innen barnehagefeltet noensinne og er det første i sitt slag til å ta for seg kvaliteten i norske barnehager og dens innvirkning på barn i barnehagen. Prosjektet vil undersøke hva som karakteriserer en god barnehage og hvilke faktorer som påvirker barnas trivsel, måloppnåelse og utvikling. GoBaN er et nasjonalt og internasjonalt samarbeidsprosjekt med forskere fra ulike forskningsinstitusjoner: Høgskolen i Oslo og Akershus (HiOA); Universitetet i Stavanger (UiS); Høgskolen i Vestfold (HiVe); og Universitetet i Nordland (UiN).

Appendices

Målsetningen med dette kvalitative delprosjektet er å undersøke hvordan barnehagene planlegger og arbeider med språk i praksis. Jeg vil samle inn data gjennom intervju med barnehagens personal og observasjoner av barnegruppen. I observasjonene vil jeg benytte notater og videoobservasjoner. Jeg vil filme korte sekvenser av hverdagssituasjoner for å få innsikt i samspillet mellom voksne og barn i formelle og uformelle språkaktiviteter som fri lek og samling. Derfor er det fokus på språkarbeidet i barnehagen, og ikke fokus på enkeltbarn i denne studien.

I løpet av prosjektet vil jeg etter avtale med barnehagen besøke avdelingen ca. sju ganger for å få et innblikk i avdelingens arbeid med språk i hverdagen. Studien vil gjennomføres av undertegnede, Joakim Evensen Hansen, stipendiat ved UiS.

Dataene fra denne undersøkelsen vil knyttes til hovedstudien del 1 (kartlegging av kvalitet og språkkartlegging). Dette for å kunne gi et best mulig bilde av det komplekse dagliglivet i en barnehage.

Innsamlede data vil bli lagret og oppbevart i samme database som hovedprosjektet.

Delprosjektet ‘Språkarbeid i barnehagen’ avsluttes 1.1.2017, men innsamlede og anonymiserte opplysninger vil bli overført hovedprosjektet 34301_GoBaN. Innsamlede opplysninger i hovedprosjektet vil bli slettet senest ved utgangen av 2053. Hovedprosjektet har konsesjon fra Datatilsynet.

All informasjon som vil framkomme, vil bli behandlet konfidensielt, og det samles ikke inn opplysninger om enkeltbarn i denne studien.

Delprosjektet er meldt til personvernombudet for forskning ved samfunnsvitenskapelig datatjeneste (NSD).

Appendices

Det er frivillig å delta i delprosjektet, og du/dere kan når som helst trekke samtykket til deltakelse tilbake uten å oppgi noen grunn. Dersom du/dere gjør dette, vil alle innsamlede opplysninger om ditt/ deres barn bli anonymisert.

Dersom du/dere ønsker at deres barn deltar i prosjektet, er det fint om du/ dere skriver under på samtykkeerklæringen under og returnerer svarslippen til barnehagens personale.

Hvis du/ dere har spørsmål, vennligst kontakt meg på telefon eller e-post.

Med vennlig hilsen

Joakim Evensen Hansen, Ph.D.-stipendiat

E-post: joakim.e.hansen@uis.no

Telefon: 51 83 35 68/ Mobil: 953 07 443

Samtykkeerklæring

Jeg/vi har fått og lest informasjonen om prosjektet «Språkarbeid i barnehagen» og samtykker til deltagelse i prosjektet.

Barnets navn: _____

Sted og dato:

_____, den ___, 20__

Underskrift (signatur skrives med blokkbokstaver)

Appendices

Appendix 2 – Confirmation letter NSD

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES



nsd@uib.no
N-5007 Bergen
Norway
tel. (+47) 55 21 11 11
fax. (+47) 55 54 50 50
http://www.nsd.uib.no
http://www.nsd.no

Joakim Evensen Hansen
Institutt for barnehagelærerutdanning Universitetet i Stavanger

4036 STAVANGER

Vår dato: 11.02.2015

Vår ref: 41931 / 3 / LT

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 29.01.2015. Meldingen gjelder prosjektet:

41931 Språkarbeid i barnehagen, delprosjekt i GoBaN, prosjektnr: 34301
Behandlingsansvarlig Universitetet i Stavanger, ved institusjonens øverste leder
Daglig ansvarlig Joakim Evensen Hansen

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningsene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skalgis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, <http://www.nsd.uib.no/personvern/meldeplikt/skjema.html>. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://pvo.nsd.no/prosjekt>.

Personvernombudet vil ved prosjektets avslutning, 01.01.2017, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Katrine Utaaker Segadal

Lis Tenold

Kontaktperson: Lis Tenold tlf: 55 58 33 77

Vedlegg: Prosjektvurdering

Dokumentet er elektronisk produsert og godkjent ved NSDs rutinor for elektronisk godkjenning.

Faksimile fra lis.tenold@uib.no
Dato: 2015-02-11, Universitetet i Stavanger, Institutt for barnehagelærerutdanning, 4036 Stavanger, Tel.: +47 55 21 11 11, nsd@uib.no
PROSJEKTNR: 34301 Språkarbeid i barnehagen, delprosjekt i GoBaN, prosjektnr: 34301
MELDEPLIKT: Ja
DOKTYP: Dok. nr.: Universitetet i Stavanger, Institutt for barnehagelærerutdanning, 4036 Stavanger, Tel.: +47 55 21 11 11, nsd@uib.no

Appendix 3 – *Interview guides*

Intervjuguide pedagogisk leder

Takk for at du ønsker å delta i prosjektet og takk for at du tar deg tid til dette intervjuet i dag.

Språkarbeid

- Hvordan arbeider du med språk på din avdeling? Kan du gi noen eksempler
- Hva mener du er viktig i språkarbeidet på din avdeling? Hvorfor er det viktig?

Planarbeid

- Hvordan bruker du Rammeplanen i planlegging av språkarbeid på avdelingen? Kan du gi et eksempel?
- Hvordan bruker du barnehagens årsplan i planleggingen av språkarbeid på avdelingen?
- Benytter dere andre planer/ dokumenter i planleggingen?

Språkstimulering og kartlegging

- Hvilke metoder/ verktøy for språkstimulering og språkkartlegging har du kjennskap til?
- Hvordan er din erfaring med å bruke bestemte metoder/ verktøy til språkstimulering og/ eller språkkartlegging på avdelingen?

Kompetanse og kompetanseutvikling

- Hva kunne du tenke deg å få mer kompetanse om når det gjelder språk og språkmiljø i barnehagen?

Intervjuguide styrer

Takk for at du ønsker å delta i prosjektet og takk for at du tar deg tid til dette intervjuet i dag.

Generell informasjon

Utdanning, arbeidserfaring i denne barnehage og andre barnehager, alder

Generell informasjon om barnehagen

Antall barn, antall ansatte, antall avdelinger (organisering)

Barnehagens historie, beliggenhet

Satsingsområde/ verdigrunnlag/ pedagogisk plattform ell.

Språkarbeid

- Hvordan arbeider dere med språk i barnehagen? Kan du gi noen eksempler?
- Hva mener du er viktig i språkarbeidet på din avdeling? Hvorfor er det viktig?
- Hvilket ansvar (rolle/ oppgaver) har du som styrer når det gjelder språkarbeid i barnehagen?

Planarbeid

Appendices

- Hvordan bruker dere Rammeplanen i planlegging av språkarbeid i barnehagen? Kan du gi et eksempel?
- Omhandler barnehagens årsplan språkarbeidet i barnehagen, i så fall hvordan?
- Hvordan brukes årsplanen i barnehagen på alle barnehagen?
- Benytter dere andre planer/ dokumenter i planleggingen?

Språkstimulering og kartlegging

- Hvilke metoder/ verktøy for språkstimulering og språkkartlegging har du kjennskap til?
- Bruker dere noen av dere i barnehagen?
- Hvordan er din erfaring med å bruke bestemte metoder/ verktøy til språkstimulering og/ eller språkkartlegging på avdelingen?
- Hva er din oppfatning av bruken av dette i din barnehagen?

Kompetanse og kompetanseutvikling

- Hva kunne du tenke deg å få mer kompetanse om når det gjelder språk og, hva har personalet behov for mer kompetanse om relatert til språkmiljø i barnehagen?

Intervjuguide assistenter

Takk for at du ønsker å delta i prosjektet og takk for at du tar deg tid til dette intervjuet i dag.

Generell informasjon

Utdanning

Arbeidserfaring i denne barnehage og annen relevant erfaring

Alder

Språkarbeid

- Hvordan arbeider du med språk på din avdeling? Kan du gi noen eksempler
- Hva mener du er viktig i språkarbeidet på din avdeling? Hvorfor er det viktig?
- Hvilket ansvar (rolle) har du som assistent/ fagarbeider når det gjelder språkarbeid?

Planarbeid

- Hvordan bruker du Rammeplanen i planlegging av språkarbeid på avdelingen? Kan du gi et eksempel? Eventuelt brukes på avdelingen
- Hvordan bruker du barnehagens årsplan i planleggingen av språkarbeid på avdelingen? Eventuelt brukes på avdelingen
- Benytter dere andre planer/ dokumenter i planleggingen?

Språkstimulering og kartlegging

- Hvilke metoder/ verktøy for språkstimulering og språkkartlegging har du kjennskap til?
- Hvordan er din erfaring med å bruke bestemte metoder/ verktøy til språkstimulering og/ eller språkkartlegging på avdelingen?

Kompetanse og kompetanseutvikling

- Hva kunne du tenke deg å få mer kompetanse om når det gjelder språk og språkmiljø i barnehagen?

Article 1

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Article 2

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Language-learning environment and educational language practices in groups of children aged between one and three in Norwegian ECEC

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Language-learning environment and educational language practices in groups of children aged between one and three in Norwegian ECEC

Abstract: This study aims to investigate the language-learning environment and educational language practices in four toddler groups measured as high quality on the 'Listening and Talking' subscale in the Infant/Toddler Environment Rating Scale – Revised. The empirical data are taken from a larger fieldwork conducted in four child groups, and comprise 98 video observations of staff-child verbal interactions. Participants are children and staff in four toddler groups from different settings, and include, in total, 45 children and 17 staff members. Findings from this study indicate that educational language practices in high-quality language-learning environments are characterised by responsive staff who use a rich and contextual language and, to a certain degree, extend on children's utterances and explain meanings of words and/or make logical connections. These findings show the importance of staff knowledge and skills in interpreting and following up on children's attempts to communicate, in order to grasp valuable child-initiated learning situations. Implications for policy and practice are discussed.

Keywords: educational language practices, toddlers, ITERS-R, language-learning environment, ECEC quality

Introduction

The importance of providing children with an environment promoting learning, development, and well-being are well established in research on Early Childhood Education and Care (ECEC) (Melhuish 2011). Early years experiences and early language skills are fundamental for later attainment (Shonkoff and Phillips 2000; Bornstein et al. 2014), and the quality of the language-learning environments provided in ECEC are significant for children's language development (Hoff 2006; Justice, Jiang, and Strasser 2018). Interactions between staff and children are understood to drive development, and for children under three, high quality is often associated with warm, responsive, and supportive staff members (Bjørnestad, Pramling Samuelsson, and Bae 2012; Dalli et al. 2011). Various dimensions of language-learning

environments in ECEC are studied using global quality measures and more domain-specific measures (Justice, Jiang, and Strasser 2018; Dickinson 2006; Girolametto and Weitzman 2002; Burchinal 2018). Yet there are few studies on educational aspects of quality in ECEC for children under three, despite the potential positive effect on language development (Burchinal et al. 2008; Keys et al. 2013; Burchinal 2018). Bjørnestad and Os (2017) found that the quality of toddler care in Norway falls within the minimal range using the Infant/Toddler Environment Rating Scale – Revised (ITERS-R - Harms, Cryer, and Clifford 2006). However, based on the discussions on the ability of the ITERS-R to differentiate between levels of quality (Bjørnestad and Os 2017; Mathers et al. 2007), and the ability to measure different dimensions of ECEC quality (Dickinson 2006; Bisceglia et al. 2009), there is a need for a more fine-grained approach to study language and quality in ECEC.

This study takes a qualitative approach to get a more comprehensive understanding of language used in four Norwegian toddler groups in different settings measured to high quality (5 or above on a 7-point scale) on the subscale ‘Listening and Talking’ in the ITERS-R. Staff–child verbal interactions are analysed to examine aspects of language-learning environments and educational language practices expected to be related to early language development.

ECEC in Norway

In 2017, 82.5% of all children between 1 and 2 years of age attended ECEC in Norway. Age-based grouping is most common, and children attend a toddler group from 0 to 2 years of age, and a kindergarten group from 3 to 5 years of age (Gulbrandsen and Eliassen 2013). In terms of staff–child ratio, the current regulations require one pedagogical leader per 7–9 children under three when children attend more than six hours per day. However, there are no regulations for group size or a general staff–child ratio. The mean group size for children under the age of 3 is 9, which gives one pedagogical leader and two assistants per group

(Directorate for Education and Training 2018). The Norwegian ECEC centres are regulated by the national Kindergarten Act and are required to implement the national curriculum (Ministry of Education and Research 2011). The Framework Plan is an integrated, play-based curriculum promoting a holistic approach to learning, and it provides guidelines for fundamental values, content, and tasks (Lohmander et al. 2009; OECD 2015). It describes language as a key aspect in children's learning environments and refers to interaction and dialogue as central components in promoting language development (Ministry of Education and Research 2011).

Early language development and language-learning environments

It is generally accepted that social contexts, including adult-child interactions, have a significant influence on children's early language development (Hoff 2006, Snow 1999). The relative stability in children's language development shows the importance of early years experiences for later development (Bornstein et al. 2014). However, the question of whether or not there is a sensitive or critical period for language development during the early years is a contentious one (Shonkoff and Phillips 2000). The interaction between adult and children is central in socio-cultural theories (Vygotsky 1978; Bruner and Watson 1983), and in research on early childhood education (Dalli et al. 2011; Sylva et al. 2010). Zone of proximal development, scaffolding and joint attention are theoretical concepts describing learning mechanisms mediated in interactions with adults or more capable peers (Vygotsky 1978; Bruner and Watson 1983). Looking at environmental factors for supporting language development, the literature identifies communication experiences and exposure to a language model as key aspects (Hoff 2006). The development and use of language is embedded in a social context, and the perspective here is that variation in the development of language can be explained partly by the quality of educational input afforded by the caregiver (Hoff 2006).

The social contexts in ECEC are characterised by frequent shifts in types of situation (e.g. free play, mealtime, transition between activities, care routine) resulting in different contextual aspects (e.g. group size, staff–child ratio, adult- or child-initiated activities). These aspects influences the quality of staff's educational practices (Early et al. 2010; Sheridan, Williams, and Pramling Samuelsson 2014). Studies on language-learning environments in ECEC primarily focus on language used in a specific context (Cabell et al. 2015; Dickinson et al. 2014), and there are few studies investigating the amount of support occurring in different situations across several days in ECEC (Dwyer and Harbaugh 2018).

Educational language practices in ECEC

Research on educational language practices in ECEC for children under three is scarce. Existing research builds on the assumption from mother–child research that quantity and quality of child-directed speech are influential factors for language development (Dickinson and Porche 2011; Rowe 2012). Studying mother–child communication, Tomasello and Farrar (1986) argue that joint attentional processes provide scaffolding for early language. To facilitate language learning in these episodes, it is important that adults follow the child's focus and lead, and talk about objects that the child is focused on (Tomasello and Farrar 1986). In another study, Hoff and Naigles (2002) found that the lexical richness and syntactic complexity that mothers produce in conversations with 24-month olds describe the variation in lexical development. As children grow older, the number of words, number of different words, utterance length and quality of informative content gain more importance (Hoff and Naigles 2002). Rowe (2012) concludes that the use of diverse, sophisticated vocabulary with toddlers explains the variation in vocabulary development, and use of decontextualised language with pre-schoolers.

In a ECEC context, The Home-School study found that teacher support for extended discourses, use of varied vocabulary and evidence of an educationally rich curriculum predicted end of kindergarten measures and fourth grade language and reading abilities (Dickinson and Porche 2011). Teacher support for extended discourses is the most powerful predictor, and includes teachers' efforts to engage children in analytic thinking about stories during book reading, conversations providing information during group times and use of strategies to keep a joint focus in the group and extend on one-to-one conversation (Dickinson and Tabors 2001). Girolametto and Weitzman (2002) investigated teachers' responsive language input in groups with toddlers and preschoolers related to children's language productivity. They found the same amount of child-centred and interaction promoting strategies in both age groups. The educational practices differed in terms of language modelling strategies, with a greater use of labelling with toddlers and extension with preschoolers (Girolametto and Weitzman 2002). Indicators for quality in verbal input seem to be rich and varied vocabulary and expanding on children's initiative during the first and second year, and the use of decontextualised language and explaining around the third year.

Aim of the study and research question

The aim of this study is to examine what characterises language-learning environments and educational language practices in four toddler groups in different settings measured as high quality on the 'Listening and Talking' subscale in the ITERS-R (5 or above on a 7-point scale). Based on the importance of the verbal language used by staff in interactions with children for early language development, the research question is as follows: *What characterises staff's verbal interactions with children in four toddler groups?* Specifically, the staff's verbal interactions are analysed in relation to contextual aspects (e.g. type of situation, number of staff present) and content (e.g. adding words, extending) possibly related

to early language development. This study contributes a more fine-grained perspective on high-quality settings, and not on the differences between groups with high- and low-quality scores.

Method

Participants

The participants were strategically selected from the BePro/GoBaN sample of 206 child groups observed using the ITERS-R (Bjørnestad and Os 2017) based on two criteria. The first selection criteria was a score between five and seven (good - excellent) on the ITERS-R ‘Listening and Talking’ sub-scale (Harms, Cryer, and Clifford 2006) to include child groups with a high quality language-learning environments. The sub-scale consists of three items measuring the language-learning environment in terms of *helping children to understand language* (item 12), *helping children to use language* (item 13) and *using books* (item 14). Each item is rated on a scale from 1 to 7 (1 = inadequate, 3 = minimal, 5 = good, and 7 = excellent), and scored in accordance with requirements described at indicator level (in total 39 across the 3 items). The ratings are based on 3–4 hours of observation followed by an interview with the preschool teacher to obtain information on aspects that were not observable during the visit (Bjørnestad and Os 2017). The exact ITERS-R scores were unknown to the researcher during the observations. The second criterion was variation in the following aspects: ownership (municipal and private), size (60–140 children), group sizes (9–14 children), preschool teachers per group (1–2) and geographical location (urban, rural) (see table 1). In terms of size, all the centres in this study are above the median size in Norway (48 children), and are placed within the three highest deciles (Gulbrandsen 2017). Thus, there are missing centres within the majority size of Norwegian ECEC centres. The second criterion was used to secure a variation on structural quality aspects possibly related to the learning

environment and educational practices. In total, 45 children (between 1 and 3 years) and 17 staff members (15 female and 2 male) participated. The 45 children comprised 15 girls and 30 boys, and contained 9 one-year-olds, 21 two-year-olds and 15 three-year-olds.

[Table 1 near here]

Procedure and observational data

The empirical data in this qualitative observational study were taken from a larger fieldwork conducted by the author in four child groups in different settings. Video-recorded observation was chosen as a method to get more in-depth descriptions of staff-child verbal interactions. Each of the four child groups were visited for a total of five days during May and June 2015. The first day of observation was used to get familiar with the staff and children in the groups, and field notes were used to obtain data on contextual aspects and educational practices. On the following four days, all instances of verbal interaction observed were recorded with a handheld video camera with an on-camera microphone. The 98 video-recorded observations included in this study are from four days of observation in each group (in total, 16 days). Immediately after the recordings, some additional contextual information was noted in the field notes. Several recordings were deleted during the observations, and afterwards, because children without consent participated. The start of an observation was defined by a verbal interaction between a staff member and one child or a group of children. The end was marked by shift in activity or/and when the staff member or child left the ongoing interaction or activity. In order to get naturalistic observations of staff-child interactions in everyday activities, the number of observations per activity, the length of the observation, and the number of children and staff participating differed. Moreover, the frequent shifts in activities, and children and staff moving around, made it impossible for one observer to capture all instances of verbal interaction.

This study is a part of the BePro/GoBaN project, which has obtained the required approval from the Norwegian Social Science Data Service and the Norwegian Data Protection Authority, and follows all ethical standards and privacy policies that ensure participants' confidentiality and anonymity. The four ECEC centres in the current study were selected from this sample to secure the anonymity of the centres and staff. The selected ECEC centres were asked to participate, and the staff members were informed that participation was voluntary. The staff and parents gave written consent and were reassured that they could withdraw at any time (NESH 2016). The ethical considerations during data collection always favoured the children's right to participation and well-being.

Analytical procedure

A qualitative analytical strategy, including categorising and transcribing, was chosen to analyse the observational data (Johnson and Christensen 2012). The analytical procedure includes using predefined codes and transcribing selected speech samples based on the results from the coding, which is a common approach used to study language in ECEC (Dickinson 2012; Dwyer and Harbaugh 2018; Justice, Jiang, and Strasser 2018). The procedure can be described as an abductive process, combining theoretical constructed categories and empirical data (Alvesson and Sköldberg 2008).

The first step was to code the video observations based on the content in the verbal interactions and contextual aspects to examine characteristics of the language-learning environment. Two aspects were used to code the video observations; *context*, addressing the contextual aspects, and *content*, addressing the staff member's verbal language use. *Context* was coded for type of activity (e.g. free play, mealtime, circle time), staff members (number and position) and number of children. *Content* was coded based on category variables developed for this study addressing educational language practices in terms of responding,

adding words, extending and explaining (see table 2). The content categories were coded YES or NO, and are not mutually exclusive, which means that they can all be scored YES during one observation. To score YES the criteria in the definition needed to be observed throughout the interaction. All coding was done by the author directly from the recordings to ensure a proximity to the empirical data and to reduce transcription time. In *the following step*, four selected illustrative examples of staff educational practices were transcribed verbatim and analysed. This was done to illustrate and get more detailed descriptions of good educational practices identified in the coding. Three criteria for selection were used. First, observations meeting requirements across different categories of content were selected, giving four combinations: 1) responding and adding words; 2) responding, adding words, and extending; 3) responding, adding words, and explaining; and 4) responding, adding words, extending, and explaining. Second, the criteria for content were combined with context. Based on which categories of content occurred most frequently in a given context, observations were selected for the situations with most observational data (i.e. free play, mealtime, and circle time). The first example met the requirements of responding and adding words, in free play; the second met the requirements of extending, in addition to responding and adding words, at mealtime; the third met the requirements of responding, adding words, and explaining, in circle time; and the fourth example met the requirements of responding, adding words, extending, and explaining, during mealtime. Finally, based on these selection criteria, four episodes that were typical examples of good educational practices were transcribed.

[Table 2 near here]

Findings and interpretations

The findings and interpretations are presented in two sections following the analytical strategy. Frequencies of content and context are presented first, followed by qualitative

interpretations of four selected examples of educational language practices.

Frequencies of context and content

In total there were 98 observations (total 1069 minutes, min 2.17, max 30.5, mean 11.18), distributed in terms of *context* in 46 observations of free play, 30 observations of mealtime, 11 observations of circle time, 7 observations of activities and 4 observations of transition (see table 3). This distribution with a high number of free play observations and the length of mealtime observations can reflect the structure of everyday life for children in one-to three-year-old groups in Norwegian ECEC.

[Table 3 near here]

The size of child groups in the observations ranged from two children to 12 children (mean 5.8). This indicates a use of flexible groups in regards to size, and underpins that staff in ECEC often interact with a group of children and seldom have one-to-one interactions. In 48 out of 98 observations, a preschool teacher or an assistant was alone with a group of children. In the child groups with two preschool teachers, both teachers were only present at the same time during three mealtime observations. Based on these observations, it seems that children experience a high number of activities during a day where the preschool teacher or assistants are working alone with a group of children. Group size is often used in a measure of staff-child ratio, and is as a key indicator for ECEC quality (OECD 2006). The staff-child ratio describes the number of children enrolled in the group per staff member, and does not account for the number of staff members present and available for interactions with children. Contextual aspects are often used as structural indicators for quality, and the associations between indicators of structural and process of quality (e.g. staff-child ratio and staff-child interactions) are discussed (Slot et al. 2015; Sylva et al. 2010). An argument is that a higher

number of staff provides children with increased opportunities for interactions and educational instruction from staff (Perlman et al. 2017). According to Siraj-Blatchford (2007), the characteristics of staff-child interactions are the foundation for providing a high quality environment.

Looking at the *content* in terms of the staff's verbal interactions, the results (see table 4) from the coding show that in 97% of the observations the staff responded to the children's attempt to communicate and in 84% they added words. Extending on the children's talk and contributing some additional information occurred in 49% of the observations, and in 38% of the observations the staff explained the meaning of words and concepts in cooperation with the children. These results indicate that the staff are responsive to children's attempts to communicate and add words. This is in line with the preschool teachers' descriptions of their own educational language practices, where they place emphasis on responding to children's attempts to communicate and the use of strategies, such as vocabulary training and extending on conversations (Sheridan and Gjems 2016; Author XXXX). These results are also in line with requirements for a high score on the ITERS-R 'Listening and Talking' sub-scale, which are to respond in a timely manner, interpret children's communication and have meaningful conversations with children throughout the day (Harms, Cryer, and Clifford 2006).

Combining *context* and *content*, the relationship between the social context and practice are discussed, focusing on staff educational practices in different everyday activities. The results (see table 4) show that during free play, the staff expand by adding words in 87% of the observations, extend on children's utterances in 61% of the observations and explain actions or words in 35% of the observations. During mealtime, the staff add words in 83% of the observations, extend in 50% of the observations and explain in 33% of the observations. In circle time, the staff add words in 73% of the observations, extend on children's utterances in

27% of the observations and explain in 64% of the observations. Looking at opportunities for conversation and language support, free play and mealtime are a place for adding words and extending on conversations. In circle time, the staff add words and explain words or actions more than they follow children's utterances. There are small variations when relating type of activity to responsiveness and adding words, and this seems to be present in most of the interactions. More variations are found in relating activity to the content variables extending and explaining. During mealtime, the staff extend in 50% of the observations and explain in 33% of the observations. In circle time, the staff extend in 27% of the observations and explaining in 64%. Summing up, there seems to be more opportunities for child-initiated conversations in free play and mealtime, and more staff-initiated interactions and instructional practices during circle time.

[Table 4 near here]

In the following, four illustrative examples of responding, adding words, extending and explaining, based on extractions from interactions in free play, mealtime and circle time, will be presented and discussed. The staff members and children in the examples are from different child groups.

Example 1 – Responding and adding words during free play

The first example is from a free play situation where the preschool teacher is responding to the child's attempt to communicate, which occurred in 97% of all observations, and adding words, which was observed in 84% of all observations. The preschool teacher is sitting on the floor with a group of four children and CHILD A is looking at a book with pictures sorted by colours.

1 CHILD A: Look...

2 PRESCHOOL TEACHER: yes, look at that, it's a butterfly – a beautiful blue butterfly,
it's blue ...

3 CHILD B: there ... (*and points at the picture of the butterfly in the book*)

4 PRESCHOOL TEACHER: yes, that's the butterfly and it has feelers (*PT points at the
picture in the book*). And what is that? (*pointing at another picture*)

...

13 CHILD C: and some green spoons ...

14 PRESCHOOL TEACHER: yes, and some green spoons, do we have green spoons
here in the kindergarten?

15 CHILD C: mmm...

16 PRESCHOOL TEACHER: I have not seen anyone (*preschool teacher turn over to the
next page*) oh, what is this? It's orange [the colour - oranje]

17 CHILD A: Orange [the fruit - appelsin]

18 PRESCHOOL TEACHER: yes orange (*with distinctive tone*) and what is this? (*PT
points at another picture*)

19 CHILD A: fish...

20 PRESCHOOL TEACHER: Yes, a fish, even a goldfish

In line 2, the preschool teacher is adding meaningful words to what the child is pointing at; a beautiful blue butterfly. The sequence in which the preschool teacher asks a question and the child responds continues until the preschool teacher in line 14 asks the child, 'do we have green spoons in our kindergarten?' CHILD C confirms a belief that they have green spoons with his/her response in line 15. The preschool teacher then follows up by stating that CHILD C's answer was wrong by saying that she has not seen anyone. The preschool teacher continues the sequence of asking a question, waiting for the child to respond and then verifying the answer and asking a new question. This occurs in line 16, where the preschool teacher rejects CHILD A's answer with no more talk about the green spoons, and instead turns to the next page and starts asking a new question.

The high frequency of adding words is in line with the language modelling strategy with more use of labelling with toddlers identified by Girolametto and Weitzman (2002). The

responsiveness and strategy of labelling can be seen as a part of child-directed speech, where the focus is on creating a joint focus on the vocabulary used (Tomasello and Farrar 1986; Rowe 2012). This use of child-directed speech in reading books with a focus on vocabulary training creates a joint attention; however, there are fewer meaningful conversations and talk in direction of extended discourses (Dickinson and Tabors 2001). The high frequency of adding words is also in line with the findings in Author's (XXXX) study, where preschool teachers described vocabulary training as an important part of their educational work on language.

Example 2 – Responding, adding words and extending during mealtime

The second example is from a mealtime, where the preschool teacher is responding, adding words and extending on children's utterances. Extending was observed in 49% of the observations. The children have almost finished eating after a mealtime involving little communication; just a few short questions and answers following the sequence discussed in example 1. The preschool teacher is sitting next to CHILD A and CHILD B.

- 1 CHILD A: Oh no, look at the flowers (*pointing at the window*)
- 2 PRESCHOOL TEACHER: Yes there are many yellow flowers outside...
- 3 CHILD A: Yes, many flowers (*looking at the window*)
- 4 PRESCHOOL TEACHER: they are called dandelions
- 5 CHILD A: Dandelions ...
- 6 CHILD B: Dandelions ...
- 7 PRESCHOOL TEACHER: Yes, many yellow dandelions
- 8 CHILD B: Oh no look at all the flowers, the flowers we have inside (*pointing towards the window*)
- 9 PRESCHOOL TEACHER: Do you have some flowers inside?
- 10 CHILD B: Look...(pointing towards window again)
- 11 PRESCHOOL TEACHER: Yes ... no, there are not many flowers on the orchid, it's just the stalk, but there is one which will be in flower ...
- 12 CHILD B: Stalk...

13 PRESCHOOL TEACHER: But there is a bud on one, so it will blossom

In lines 2 and 4, the preschool teacher adds words by naming the colour and type of flower following the question and answer sequence. The preschool teacher responds and follows up in line 7 by confirming that CHILD A and CHILD B are correct in their use of the word dandelion. In line 11, there is a change in the preschool teacher's communication, and it seems that she interprets CHILD A's attempt to point at the orchid in the window. The preschool teacher extends on the utterance in line 11 by continuing to talk about the orchid and adding information by pointing out a bud that will blossom. In this example, the preschool teacher is extending on children's utterances by encouraging them to remain on the same topic and provide additional information.

In this example, the preschool teacher interprets and understands the child's utterances, and creates space for joint attention on the topic introduced by the child (Tomasello and Farrar 1986). The preschool teacher provides talk directed towards extended discourses by extending on the children's topics and relating here-and-now content to there-and-then experience (Dickinson and Tabors 2001; Girolametto and Weitzman 2002). This is present in the short talk about the orchid, which had flowers and now is a stalk with a bud that will blossom. To create joint attention and shared thinking by following children's leads require competent and active staff members.

Example 3 – Responding, adding words and explaining during circle time

The third example is from a circle time where the preschool teacher is responding, adding words and explaining. Explaining was observed in 38% of all observations, and in 64% of the observed circle times. The following contains extracts from a circle time led by a preschool teacher that lasted approximately 30 minutes. Ten children in the one to three age group and three assistants participated. The topic for the circle time was colours, and the activity

involved children picking different objects from a bag and the preschool teacher naming and explaining the objects.

- 1 PRESCHOOL TEACHER: What did CHILD A get?
- 2 CHILD B: Drawer...*(answers with a low voice)*
- 3 PRESCHOOL TEACHER: What did you say? *(the preschool teacher looks at CHILD B)*
- 4 ASSISTANT: She said a drawer
- 5 PRESCHOOL TEACHER: A drawer? Yes, and what colour is the drawer?
- 6 CHILD C: Red ...
- 7 CHILD D: Green ...
- 8 ASSISTANT: What colour is it? *(the assistant asks CHILD B)*
- 9 CHILD B: Green...
- 10 PRESCHOOL TEACHER: Yes, it's green! Let's try to put the green drawer into this to make a chest of drawers *(puts the drawer into a chest of drawers)*. Look, we had a drawer, but when the drawer is inside this, it will become a chest of drawers.
- ...
- 14 PRESCHOOL TEACHER: Do you want me to tell you another name for a chest of drawers? It is a piece of furniture. Everything we have in this room is a piece of furniture; the chair is furniture, the table is furniture, this shelf is furniture, the closet and the couch are furniture. We have a lot of furniture.

In line 1, the preschool teacher initiates the activity by asking a question, and follows up in line 5 by confirming the right answer and asking a new question. This sequence of asking questions and responding by confirming the answer and following up with a new question is repeated in line 8. In line 10, the preschool explains for that a drawer is a part of a chest of drawers by showing how the drawer fits into a chest of drawers. In line 14, the preschool teacher introduces a new word into the explanation by using the concept of furniture.

By explaining a drawer and introducing the furniture concept, the preschool teacher's educational practice is interpreted as planned and intentional. The preschool teacher gives the children an opportunity to hear and use language. The whole group is given the opportunity to

experience a language model using language in a meaningful context and to participate in interactions with a shared focus. This educational practice is in line with findings on effective didactic strategies to foster language development in ECEC (Burger 2015). High-quality staff-child interactions are characterised by the staff's ability to engage in joint and sustainable interactions with an educational content (Rowe 2012; Tomasello and Farrar 1986; Siraj-Blatchford 2007; Dickinson and Porche 2011).

Example 4 – Responding, adding words, extending and explaining during mealtime

The fourth example is from mealtime. The assistant is responding, adding words, extending and explaining. This example is from breakfast, and seven children are sitting around a table with one preschool teacher and one assistant. The assistant and the preschool teacher are helping the children to get started with the meal.

- 1 CHILD A: Open it ...
- 2 ASSISTANT: Shall I open it? What's in it?
- 3 CHILD A: Yes, open it so everyone can get.
- 4 ASSISTANT: Ohh... That's the good kind of salami, that kind of good small salami.
- 5 CHILD A: I have to open it so everyone can get a taste, because there are eight children here today.
- 6 ASSISTANT: Yes there are eight children here today, but there are only four (*pointing at the salami*), so I think your mum thought that you should eat it with your bread.
- 7 CHILD A: But we have four, then everyone a little can have.
- 8 ASSISTANT: I can divide them; I can cut them in two.
- 9 CHILD A: No, because everyone can eat them as they are
- 10 ASSISTANT: Yes, but then it is not enough for all
- 11 CHILD A: It is ...
- 12 ASSISTANT: No, look, lets count ... 1-2-3-4 (*counting the salami pieces*) and I'll count all the children 1-2-3-4-5-6-7, then there are three too few for everyone to get a piece each (*shows by counting on her fingers how many are missing*). But if we divide them into two, then everyone can get a piece.
- 13 CHILD A: How can you divide them into two ...?

The assistant's first two inputs to the conversation in line 2 and 4 follows the sequence of asking a question and adding words. In lines 3 and 5, the child is attempting to communicate, and in line 6 the assistant identifies the problem the child is pointing to. CHILD A continues in line 7, stating again what he/she wants to do, and the assistant follows up in line 8 with a possible solution. The assistant uses an educational strategy to solve the problem by using mathematical reasoning and introduces the concept of division. This is evident in her explanation in line 12 when she is counting number of children and number of salami pieces, and figures out how this can be divided with help from the children. Based on the child's initiative, the whole child group participates in the mathematical activity of counting and dividing.

The assistants' educational practice in this example is interpreted as grasping an opportunity for a joint problem solving and shared thinking in a child-initiated learning situation.

Interactions with sustained shared thinking were one of the main findings characterising high quality settings in the EPPE study (Siraj-Blatchford 2007). The assistant introduces the mathematical concept of division as a natural part of the joint problem solving. This points at the complexity in how to promote learning in a natural way by responding to children's initiative and work within the children's zone of proximal development (Girolametto and Weitzman 2002).

Final discussion

Studying selected child groups with high scores on the ITERS-R gave different perspectives and descriptions of quality in Norwegian childcare for toddlers than does focusing on overall perspectives (Bjørnestad and Os 2017). The analysis identified a common educational strategy focusing on vocabulary training by defining and conceptualising objects and actions (present in 85 % of the observations). In all four examples, the practices are characterised by

the staff asking children to name objects such as the dandelion or the drawer, followed by the staff confirming the answer and immediately asking a new question. The analysis showed that the staff extended on the children's utterances in 49% of the observed interactions, and as seen in example 1 this could be explained by staff not following up on question asked. This indicates that children often experience staff members to ask a series of questions, and not follow up on the answers given. However, when following up on children's answers, this study shows that staff identify and build on a child-initiated learning situation. In order to notice these opportunities, the staff need to follow the children's curiosity and participate in conversations on child-initiated topics as identified in examples 2 and 4. This requires both active and participating children and staff members with intentional educational practices as described in examples 2, 3, and 4. The results show that intentional educational practices in everyday activities seem to strengthen children's opportunity to actively participate. The sensitivity to children's needs, interest and experiences are aspects understood as contributing to children's learning and development (Vygotsky 1978; Bruner and Watson 1983). To create joint attention and foster learning and development, the staff need to extend on child-initiated learning situations and include children as active participants in a joint construction of knowledge (Siraj-Blatchford 2007). This understanding is in line with the social perspective on learning described in the Nordic socio-educational approach (OECD 2006).

Concluding remarks

This study aimed to examine what characterises staff verbal interactions with children in four groups of children aged one to three, measured as high quality. The results show that educational language practices in high-quality ECEC are characterised by responsive staff using rich, contextual language, and to a certain degree extending on children's utterances and explaining. In terms of everyday activities, there were more instances of extending and fewer

of explaining during free play and mealtime, and less extending and more explaining during circle time. The results show the challenges and complexity, as well as the importance of staff knowledge and skills in interpreting and following up on children's attempts to communicate and to grasp child-initiated learning situations during daily work with one- to three-year-olds in ECEC.

References

- Alvesson, Mats, and Kaj Sköldberg. 2008. *Tolkning och reflektion : vetenskapsfilosofi och kvalitativ metod* [Interpretation and reflection: Philosophy of science and qualitative method]. Lund: Studentlitteratur.
- Author. XXXX.
- Bisceglia, Rossana, Michal Perlman, Diana Schaack, and Jennifer Jenkins. 2009. "Examining the Psychometric Properties of the Infant-Toddler Environment Rating Scale-Revised Edition in a High-Stakes Context." *Early Childhood Research Quarterly* 24 (2):121-32. doi: 10.1016/j.ecresq.2009.02.001.
- Bjørnestad, Elisabeth, and Ellen Os. 2017. "Quality in Norwegian childcare for toddlers using ITERS-R." *European Early Childhood Education Research Journal*:1-17. doi: 10.1080/1350293X.2018.1412051.
- Bjørnestad, Elisabeth, Ingrid Pramling Samuelsson, and Berit Bae. 2012. *Hva betyr livet i barnehagen for barn under tre år? : en forskningsoversikt*. Oslo: Høgskolen i Oslo og Akershus.
- Bornstein, Marc H., Chun-Shin Hahn, Diane L. Putnick, and Joan T. D. Suwalsky. 2014. "Stability of Core Language Skill Stability of Core Language Skill from Early Childhood to Adolescence: A Latent Variable Approach." *Child Development* 85 (4):1346-56.
- Bruner, Jerome S., and Rita Watson. 1983. *Child's talk : learning to use language*. Oxford: Oxford University Press.
- Burchinal, Margaret. 2018. "Measuring Early Care and Education Quality." *Child Development Perspectives* 12 (1):3-9. doi: 10.1111/cdep.12260.
- Burchinal, Margaret, Carollee Howes, Robert Pianta, Donna Bryant, Diane Early, Richard Clifford, and Oscar Barbarin. 2008. "Predicting Child Outcomes at the End of Kindergarten from the Quality of Pre-Kindergarten Teacher-Child Interactions and Instruction." *Applied Developmental Science* 12 (3):140-53. doi: 10.1080/10888690802199418.
- Burger, Kaspar. 2015. "Effective early childhood care and education: Successful approaches and didactic strategies for fostering child development." *European Early Childhood Education Research Journal* 23 (5):743-60. doi: 10.1080/1350293X.2014.882076.
- Cabell, Sonia Q, Laura M Justice, Anita S McGinty, Jamie DeCoster, and Lindsay D Forston. 2015. "Teacher-child conversations in preschool classrooms: Contributions to children's vocabulary development." *Early Childhood Research Quarterly* 30:80-92.
- Dalli, C., E. J. White, J. Rockel, E. Buchanan, S. Davidson, S. Ganly, L. Kus, and B. Wang. 2011. "Quality early childhood education for under-two-year-olds: What should it look like? A literature review. ." In. New Zealand: Ministry of Education.

- Dickinson, David K, Kerry G Hofer, Erica M Barnes, and Jill F Grifenhagen. 2014. "Examining teachers' language in Head Start classrooms from a Systemic Linguistics Approach." *Early Childhood Research Quarterly* 29 (3):231-44.
- Dickinson, David K. 2006. "Toward a toolkit approach to describing classroom quality." *Early Education and Development* 17 (1):177-202. doi: 10.1207/s15566935eed1701_8.
- Dickinson, David K.. 2012. "Approaches to Studying Language in Preschool Classrooms." In *Research methods in child language : a practical guide*, edited by Erika Hoff. Chichester: Wiley-Blackwell.
- Dickinson, David K., and Michelle V. Porche. 2011. "Relation Between Language Experiences in Preschool Classrooms and Children's Kindergarten and Fourth-Grade Language and Reading Abilities." *Child Development* 82 (3):870-86. doi: 10.1111/j.1467-8624.2011.01576.x.
- Dickinson, David K., and Patton O. Tabors. 2001. *Beginning literacy with language : young children learning at home and school*. Baltimore, Md: P.H. Brookes Pub. Co.
- Dwyer, Julie, and Allen G Harbaugh. 2018. "Where and when is support for vocabulary development occurring in preschool classrooms?" *Journal of Early Childhood Literacy* 0 (0):1468798418763990. doi: 10.1177/1468798418763990.
- Early, Diane M, Iheoma U Irufa, Sharon Ritchie, Oscar A Barbarin, Donna-Marie C Winn, Gisele M Crawford, Pamela M Frome, Richard M Clifford, Margaret Burchinal, and Carollee Howes. 2010. "How do pre-kindergarteners spend their time? Gender, ethnicity, and income as predictors of experiences in pre-kindergarten classrooms." *Early Childhood Research Quarterly* 25 (2):177-93.
- Girolametto, Luigi, and Elaine Weitzman. 2002. "Responsiveness of child care providers in interactions with toddlers and preschoolers." *Language, Speech & Hearing Services in Schools* 33 (4):268.
- Gulbrandsen, Lars. 2017. "Barnehagen er utvokst." *Kronikk i Barnehage.no*.
- Gulbrandsen, Lars, and Erik Eliassen. 2013. *Kvalitet i barnehager* [ECEC Quality]. Oslo: Norsk institutt for forskning om oppvekst, velferd og aldring.
- Harms, Thelma, Debby Cryer, and Richard Clifford. 2006. *Infant/Toddler Environment Rating Scale - Revised Edition*. New-York: Teachers College Press.
- Hoff, Erika. 2006. "How social contexts support and shape language development." *Developmental Review* 26 (1):55-88.
- Hoff, Erika, and Letitia Naigles. 2002. "How children use input to acquire a lexicon." *Child Development* 73 (2):418-33.
- Johnson, Burke, and Larry B. Christensen. 2012. *Educational research : quantitative, qualitative, and mixed approaches*. 4th ed. ed. Los Angeles, Calif: Sage.
- Justice, Laura M., Hui Jiang, and Katherine Strasser. 2018. "Linguistic environment of preschool classrooms: What dimensions support children's language growth?" *Early Childhood Research Quarterly* 42 (Supplement C):79-92. doi: <https://doi.org/10.1016/j.ecresq.2017.09.003>.
- Keys, Tran D., George Farkas, Margaret R. Burchinal, Greg J. Duncan, Deborah L. Vandell, Weilin Li, Erik A. Ruzek, and Carollee Howes. 2013. "Preschool Center Quality and School Readiness: Quality Effects and Variation by Demographic and Child Characteristics." *Child Development* 84 (4):1171-90. doi: 10.1111/cdev.12048.
- Lohmander, Maelis Karlson, Michel Vandenbroeck, Florence Pirard, Jan Peeters, and Marit Alvestad. 2009. "New developments." *European Early Childhood Education Research Journal* 17 (3):407-24. doi: 10.1080/13502930903101610.

- Mathers, Sandra, Faye Linskey, Judith Seddon, and Kathy Sylva. 2007. "Using quality rating scales for professional development: experiences from the UK." *International Journal of Early Years Education* 15 (3):261-74. doi: 10.1080/09669760701516959.
- Melhuish, Edward C. 2011. "Education. Preschool matters." *Science (New York, N.Y.)* 333 (6040):299. doi: 10.1126/science.1209459.
- Ministry of Education and Research 2011. *Framework plan for the content and tasks of Kindergartens*. Oslo: Ministry of Education and Reserach.
- NESH. 2016. *Forskningsetiske retningslinjer for samfunnsvitenskap, humaniora, juss og teologi*. Oslo: De nasjonale forskningsetiske komiteene.
- Directorate for Education and Training 2018. *Utdanningssspeilet 2017*. Oslo: Directorate for Education and Training
- OECD. 2006. *Starting strong II : early childhood education and care*. Paris: OECD.
- OECD. 2015. *Early Childhood Education and Care Policy Review Norway*. Paris: OECD
- Perlman, Michal, Brooke Fletcher, Olesya Falenchuk, Ashley Brunsek, Evelyn McMullen, and Prakesh S. Shah. 2017. "Child-Staff Ratios in Early Childhood Education and Care Settings and Child Outcomes: A Systematic Review and Meta-Analysis." *PLOS ONE* 12 (1):e0170256. doi: 10.1371/journal.pone.0170256.
- Rowe, Meredith L. 2012. "A longitudinal investigation of the role of quantity and quality of child-directed speech vocabulary development." *Child Development* 83 (5):1762-74. doi: 10.1111/j.1467-8624.2012.01805.x.
- Sheridan, Sonja, and Liv Gjems. 2016. "Preschool as an Arena for Developing Teacher Knowledge Concerning Children's Language Learning." *Early Childhood Education Journal*. doi: 10.1007/s10643-015-0756-8.
- Sheridan, Sonja, Pia Williams, and Ingrid Pramling Samuelsson. 2014. "Group size and organisational conditions for children's learning in preschool: a teacher perspective." *Educational Research* 56 (4):379-97. doi: 10.1080/00131881.2014.965562.
- Shonkoff, Jack P., and Deborah A. Phillips. 2000. *From Neurons to Neighborhoods : The Science of Early Childhood Development*. Washington: National Academies Press.
- Siraj-Blatchford, Iram. 2007. "Creativity, Communication and Collaboration: The Identification of Pedagogic Progression in Sustained Shared Thinking." *Asia-Pacific Journal of Research in Early Childhood Education* Vol. 1 (No. 2).
- Slot, Pauline L., Paul P. M. Leseman, Josje Verhagen, and Hanna Mulder. 2015. "Associations between structural quality aspects and process quality in Dutch early childhood education and care settings." *Early Childhood Research Quarterly* 33:64-76. doi: 10.1016/j.ecresq.2015.06.001.
- Snow, Catherine E. 1999. "Social Perspectives on the Emergence of Language." In *The Emergence of language*, edited by Brian MacWhinney. Mahwah, N.J: Lawrence Erlbaum.
- Sylva, Kathy, Edward Melhuish, Pam Sammons, Iram Siraj-Blatchford, and Brenda Taggart. 2010. *Early childhood matters: evidence from the effective pre-school and primary education project*. London: Routledge.
- Tomasello, Michael., and Michael. J. Farrar. 1986. "Joint attention and early language." *Child Development* 57 (6):1454-63.
- Vygotsky, Lev Semenovič. 1978. *Mind in society : the development of higher psychological processes*. Cambridge, Mass: Harvard University Press.

Table 1. Information on participating ECEC centres and child groups

	Ownership	Total size	Location	Group size	Staff members included
Centre 1	Private	79 children in 5 child groups	Urban	14	2 pedagogical leaders, 2 assistants
Centre 2	Municipal	66 children in 4 child groups	Urban	12	2 pedagogical leaders, 2 assistants
Centre 3	Municipal	74 children in 5 child groups	Rural	9	1 pedagogical leader, 2 assistants
Centre 4	Municipal	118 children in 11 child groups	Urban	10	1 pedagogical leader, 2 assistants

Table 2. Definition of categories used in coding content of verbal interactions

Category	Definition
Respond to children's attempt to communicate	In general, responds to children's attempts at non-verbal and verbal communication and follow children's lead in terms of topic and activity.
Add words to children's talk	Expand children's talk by repeating and adding meaningful and descriptive words for objects and actions.
Extend children's utterances	Extend on children's utterances by encouraging children to remain on the same topic and provide additional information.
Explain words or logical connections	Explain meanings of words or/and make logical connections between actions, events, concepts or conclusions in cooperation with children.

Table 3. Video observations included in the study

	Free play	Mealtime	Circle time	Activity	Transition	Total
Number of observations	46	30	11	7	4	98
Length in minutes	392.32	452.40	148.34	84.48	18.51	1096.05

Table 4. Percentages of activity and content (% within activity and total)

	Respond		Add words		Extend		Explain	
	Yes	No	Yes	No	Yes	No	Yes	No
Free play (N=46)	98 %	2 %	87 %	13 %	61 %	39 %	35 %	65 %
Mealtime (N=30)	94 %	6 %	83 %	17 %	50 %	50 %	33 %	67 %
Circle time (N=11)	100 %	0 %	73 %	27 %	27 %	73 %	64 %	36 %
Activity (N=7)	100 %	0 %	86 %	14 %	14 %	86 %	43 %	57 %
Transition (N=4)	100 %	0 %	75 %	25 %	25 %	75 %	25 %	75 %
Total (N=98)	97 %	3 %	84 %	16 %	49 %	51 %	38 %	62 %

Article 3

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