

Play-Responsive Teaching

Navigating Semiotic Repertoires and Digital Technologies in Early Childhood Education and Care

Sofije Shengjergji



Play-Responsive Teaching

ACTA UNIVERSITATIS GOTHOBURGENSIS
GOTHENBURG STUDIES IN EDUCATIONAL SCIENCES (498)

Play-Responsive Teaching

Navigating Semiotic Repertoires and Digital Technologies
in Early Childhood Education and Care

Sofije Shengjergji



UNIVERSITY OF GOTHENBURG

© SOFIJE SHENGJERGJI, 2025
ISBN 978-91-7963-199-4 (printed)
ISBN 978-91-7963-200-7 (pdf)
ISSN 0436-1121

Editor: Olof Franck.

The publication is also available in full text at:

<http://hdl.handle.net/2077/84333>

Subscriptions to the series and orders for individual copies sent to: Acta
Universitatis Gothoburgensis, PO Box 222, SE-405 30 Göteborg, Sweden or to
acta@ub.gu.se

Cover:

The image is a screenshot capturing a moment during the digital storytelling
activities, where a teacher and two children collaborate to co-create a story.

Artist: Sofije Shengjergji

Photographer: Max Karlsson

Print:

Stema Specialtryck AB, Borås, 2025



Abstract

Title: Play-Responsive Teaching – Navigating Semiotic Repertoires and Digital Technologies in Early Childhood Education and Care
Author: Sofije Shengjergji
Language: English
ISBN: 978-91-7963-199-4 (printed)
ISBN: 978-91-7963-200-7 (pdf)
ISSN: 0436-1121
Keywords: play-responsive teaching, semiotic repertoires, digital technologies, responsiveness, agency, participation, preschool

As the number of bi-/multilingual children in Early Childhood Education and Care (ECEC) settings continues to rise, and the use of digital technologies becomes increasingly prevalent in children's lives, there is a critical need to understand and develop teaching practices that effectively support these children's linguistic and semiotic diversity while fostering their participation in activities involving digital technologies. The aims of this thesis are threefold: (a) to explore how teaching in ECEC settings can be responsive to the semiotic repertoires of bi-/multilingual children and support their participation in activities involving digital technologies, (b) to further develop the Play-Responsive Early Childhood Education and Care (PRECEC) theory, and (c) to contribute with new empirically grounded knowledge about ECEC concerning multilingualism and digital technologies. The overarching research question of this thesis is: How are ECEC teachers responsive to bi-/multilingual children's semiotic repertoires during digital storytelling activities (using tablets and a story-making application), and how do they support children's participation in these activities?

Grounded in PRECEC theory, the research methodology draws on the literature and principles of design-based research. The empirical data comprises video recordings of digital storytelling activities in which teachers and children use tablets and a story-making application to co-construct stories. The video-recordings are analyzed using Interaction Analysis. Additional data, such as interviews with teachers and principals, field notes, photographs of the preschool environments, and screen recordings are used to provide detailed descriptions of the context and participants.

The thesis comprises three articles that examine distinct yet interconnected aspects of the overarching research questions: (a) how participants' semiotic repertoires are introduced and responded to, (b) children's agency and teachers' responses to it, and (c) teachers' scaffolding and triggering questions in relation to children's response patterns and narrative production.

The findings demonstrate that teachers' responsivity to bi-/multilingual children's semiotic repertoires involved translanguaging practices that acknowledged and included not only multiple languages but also diverse semiotic means of communication. These practices fostered children's participation in digital storytelling activities and challenged deficit-oriented perspectives. Furthermore, teachers supported children's participation in digital storytelling activities by being responsive to and mediating their expressions of agency through various strategies. These included (a) asking opinion-seeking questions, (b) being responsive to children's alterity, (c) meta-communicating their previous suggestions and reminding them of the storyline they created, (d) accepting diverse interpretations of their drawings, (e) inviting children to test their initiatives, (f) assisting them with the application's tools, and (g) using questions to stimulate their "what if" thinking. Additionally, teachers' dynamic use of scaffolding and triggering questions emerged as a key teaching practice supporting children's participation in digital storytelling activities.

This thesis offers practical implications for ECEC teachers' work regarding multilingualism and digital technologies, makes empirical and conceptual contributions to the advancement of PRECEC theory, and contributes new, empirically grounded insights to theoretical concepts such as responsivity, translanguaging, children's agency, and participation.

Acknowledgements

Nothing in my life has been achieved through hard work alone; it has always taken a village of people contributing to these accomplishments and through my interactions with this village, I've come to know myself better. I would like to begin by expressing my deepest gratitude to the most important people in my life — my mom and dad! Μαμά και μπαμπά, είμαι πολύ τυχερό παιδί γιατί σε αυτή τη ζωή έχω αγαπηθεί πολύ από εσάς. Η αγάπη σας, η στήριξη και η βαθιά εμπιστοσύνη σας σε μένα είναι τα πιο σημαντικά και όμορφα δώρα που μου έχετε προσφέρει και συνεχίζετε να μου προσφέρετε. Αυτά με βοηθούν να ξεπερνάω κάθε δυσκολία. Ένα “ευχαριστώ” είναι πολύ λίγο για όλες σας τις θυσίες σας αλλά να ξερετε ότι σας λατρεύω και είμαι περήφανη για εσάς!

This thesis would not have been possible without the participants who participated in my research. I sincerely thank the teachers, principals, children, and their parents for being an essential part of this journey. Thank you for welcoming me into your classrooms and sharing your valuable time. I have immense respect for the work you do!

Niklas and Jenny have been great supervisors to me the past 4.5 years. We were a strong team who went through highs and lows, bonded, and achieved goals together! You triggered (using some PRECEC concepts here) new ways of thinking, allowed me to exercise my agency, and take decisions — even when you knew they were not the right ones — but you never said, “I told you so”. When I was lost and confused while reading and trying to understand the literature, I always knew that I could turn to you for answers and explanations. You are to me something like the wise owls of academia and I learn so much from you. Thank you for guiding me in this PhD journey! You are such exceptional scholars and people, and I admire your great work ethic.

Beyond my supervisors, I am grateful to the many other scholars who supported my studies. First and foremost, I want to acknowledge all the members of our PRECEC research school, who made me feel like I belong in a strong community. I extend special thanks to Åsa Mäkitalo, Nils Hammarén, and Mona Lundin for their active engagement with the doctoral studies in our department. Your insights and the stimulating conversations we shared were truly a pleasure. Next, I am very glad to have met two inspiring superwomen, Desirée Engvall and Géraldine Fauville! You showed me how someone can be both highly competent and genuinely warm. Also, I am sincerely appreciative of Professor Claudine

Kirsch for her thorough review of my thesis during the final seminar. Her constructive feedback was invaluable and greatly contributed to improving this thesis.

Moving on, I would like to express my gratitude to my dearest friend and my safe place during Covid and the PhD studies, Kalliopi. You have been a constant source of inspiration, love, light, and strength, to my life — a true muse! I can confidently say that pursuing a PhD was worthwhile because I got to share this journey with you. Share the same office and seeing you (almost) every day was a rare privilege. Our office was truly special, and that was thanks to Alena, Lia, and Iuliana who brought fun and joy to even the grayest days. Thank you for making it so memorable! I also want to extend my thanks to all the PhD students in our department and our faculty for the wonderful and supportive community we built together.

I would not be a true Aquarius if I didn't take a moment to acknowledge my beautiful friends! As an only child, my friends have always felt like an extended family or a bonus family! Over these 4.5 years of my PhD, some friends were closer while others were in other countries, but no matter the distance, each of them holds a special place in my heart. I want to thank you all for enriching my life and shaping the person I am today. You have offered me unforgettable adventures and embraced the inner child in me who longed for acceptance.

Lastly, I would like to thank the person who stole my heart — Max! I wish I could find all the beautiful words that exist to capture the profound impact Max has had —and continues to have—on my life! He has this magic talent for transforming everyday moments into something truly special. Thank you for all your love and support during both the challenging and the bright days of academia. Thank you for the many moments of play and silliness, for tickling me and sharing laughter, for being the best travel partner, for offering me free private concerts, for teaching me about birds (even if I still forget), and for caring and truly listening to the wide array of my reflections and thoughts. I adore you!

Sofije Shengjergji

Gothenburg, January 2025

Contents

| | |
|---|----|
| CHAPTER 1 INTRODUCTION | 11 |
| Research School..... | 14 |
| Aim and Research Questions..... | 15 |
| Structure of the Thesis..... | 16 |
| CHAPTER 2 LITERATURE REVIEW..... | 17 |
| Translanguaging..... | 18 |
| Teaching Practices in Bi-/Multilingual ECEC Settings..... | 21 |
| Using Digital Technologies in ECEC settings..... | 25 |
| Using Digital Technologies in Bi-/Multilingual ECEC settings..... | 28 |
| Using Digital Storytelling in ECEC settings..... | 32 |
| CHAPTER 3 THEORETICAL FRAMEWORK | 37 |
| PRECEC Theory..... | 37 |
| Conceptual Components that Constitute PRECEC Theory..... | 40 |
| Learning Approach..... | 42 |
| Conceptualizing Agency..... | 43 |
| Conceptualizing Children’s Participation..... | 45 |
| Approach to Language..... | 47 |
| Translanguaging, Semiotic Repertoires, and PRECEC..... | 49 |
| Social and Cultural Sustainability..... | 51 |
| CHAPTER 4 METHODOLOGY | 55 |
| Theoretical Orientation..... | 56 |
| Participants and Research Context..... | 57 |
| Interventionist Nature..... | 64 |
| Iterative Structure..... | 68 |
| Collaborative Approach..... | 72 |
| Data and Analysis..... | 73 |
| Ethical Considerations..... | 76 |
| Researcher’s Role and Positionality..... | 78 |
| About Generalization..... | 79 |
| Trustworthiness..... | 79 |
| Methodological Limitations and Challenges..... | 81 |
| CHAPTER 5 SUMMARY OF ARTICLES..... | 83 |
| Article 1..... | 83 |

| | |
|---|-----|
| Article 2..... | 84 |
| Article 3..... | 86 |
| CHAPTER 6 DISCUSSION | 89 |
| Responsivity to Bi-/multilingual Children’s Semiotic Repertoires | 89 |
| Supporting Children’s Participation in Activities with Digital Technologies | 92 |
| Evolving PRECEC Theory..... | 94 |
| Implications for Social and Cultural Sustainability..... | 97 |
| Implications for Practice..... | 99 |
| Future Research | 100 |
| SVENSK SAMMANFATTNING | 103 |
| Syften och Frågeställningar | 104 |
| Teori och Metod..... | 105 |
| Artikel 1..... | 105 |
| Artikel 2..... | 106 |
| Artikel 3..... | 107 |
| Diskussion | 108 |
| BIBLIOGRAPHY..... | 111 |

List of tables and figures

| | |
|---|----|
| Table 1 Information about teachers..... | 58 |
| Table 2 Information about children..... | 59 |
| Table 2 Observation checklist..... | 65 |
| Table 3 Interview Questions | 65 |
| Table 3 Interview questions | 68 |
| Table 4 Iterations of the research..... | 70 |
| Figure 1 Library room in Sunrise Centre..... | 60 |
| Figure 2 Signs illustrating translanguaging in Sunrise Centre | 61 |
| Figure 3 Poster illustrating the languages that are presented in Kidspace | 62 |
| Figure 4 Signs in the Kidspace’s classroom | 63 |

Chapter 1 Introduction

In many societies, an increasing number of children enter Early Childhood Education and Care (ECEC) classrooms speaking multiple languages. They bring with them a set of semiotic resources which they use to access play, participate in activities, and interact with peers (Bengochea et al., 2018; Sembiante et al., 2020; Siry & Gorges, 2020). At the same time, the use and accessibility of digital technologies in ECEC settings has increased considerably (OECD, 2023). These dynamics have created a pressing need for ECEC teachers to adopt responsive practices that foster bi-/multilingual children's contributions while also support their participation in activities involving digital technologies. Therefore, this thesis focuses on how teaching in ECEC can be responsive to bi-/multilingual children's semiotic repertoires and support their participation in activities with digital technologies. The concept of semiotic repertoires refers to the full range of semiotic resources that individuals draw upon when communicating (e.g. verbal language, gestures, signs, gaze, facial expressions, images) (Kuster et al., 2017). Digital technologies, following Plowman (2016), are here understood as encompassing a variety of digital devices (e.g. mobile phones, tablets, laptops) and applications, websites, and games that children interact with, view, play, read, or create using them.

Play-Responsive Early Childhood Education and Care (PRECEC) provides the theoretical framework for conceptualizing teaching in this thesis. Teaching is presented more thoroughly in Chapter 3, but briefly put is conceptualized as a mutually co-constructive activity where both teachers and children contribute to the learning experience, as it cannot be solely attributed to one participant (teachers) (Pramling et al., 2019). Teachers actively engage children, but the dynamic and the development of the activity depends on the input from participants. In this view, teaching involves responding to children's play, communicative and experiential resources to support their participation in mutually and developmentally rewarding activities (Pramling et al., 2019). PRECEC's previous empirical work has focused on teachers' responsivity to children's play. Building on this work Kultti (2022) argues for the expansion of the PRECEC's concept of responsivity to include all semiotic resources of children to

broaden their experiential foundation and address social inequities. Considering Kultti's (2022) argument, this thesis seeks to empirically examine what responsiveness to all children's semiotic repertoires entails in teaching practice and contribute to the development of PRECEC theory.

This thesis is motivated by the Article 30 of the United Nations Convention on the Rights of the Child (UNCRC) recognizing the right of children from minority and indigenous communities to maintain and use their own languages. Also, by the fact that research on multilingualism in ECEC in Europe has been growing over the last decade, but still, it remains significantly under-represented (Alstad & Mourão, 2021). This under-representation is particularly concerning given the prevailing monolingual norms in bi-/multilingual settings, where languages are often kept separate rather than integrated. In the Nordic countries, for example, policy documents celebrate multilingualism as a valuable resource, but in practice, a monolingual native-speaker norm predominates (Palviainen & Curdt-Christiansen, 2020). An observation study looked at the physical literacy environment of 131 preschool classrooms in three Nordic countries and revealed that, despite the presence of multilingual children in 82% of the classrooms, books and signs in their mother tongues were lacking (Hofslundsengen et al., 2020). It also found that digital technologies were rarely available in those preschools. In addition, scholars have pointed out that other semiotic resources have often been overlooked in favor of named languages when studying multilingualism (Canagarajah, 2021; Kirsch, 2021; Kusters et al., 2017; Kusters, 2021).

Regarding the use of digital technologies in ECEC, according to Kewalramani et al. (2020, p. 163) "early childhood settings need more guidance in relation to what high-quality pedagogies with technologies may look like" and they also stress that these technologies need to be linked with core principles of ECEC, such as play and child-centeredness. The use of technology in ECEC is not the primary goal since educational quality will not inevitably increase simply because digital technologies are used. Contemporary research on the integration of digital technologies in preschools primarily examines how these technologies contribute to children's learning and explores teachers' beliefs and attitudes (Fotakopoulou et al., 2020; Reich et al., 2016; Roberts et al., 2018; Vidal-Hall et al., 2020). There is less emphasis on documenting and analyzing actual teaching practices during activities with digital technologies (Bourbour, 2023). The role of preschool teachers and their pedagogical practices, as well as peer interactions are crucial for ensuring that digital technologies have a positive educational impact (Arnott, 2016; Fleer, 2020; Undheim & Jernes, 2020).

In Sweden, where the research took place, preschool (Swe. *förskola*) is an integral part of the educational system, it is founded on democratic values and reflects “the values and rights expressed in the UN Convention on the Rights of the Child (CRC)” (Lpfö 18, p. 5). The national preschool curriculum emphasizes fostering children’s knowledge, values, and a lifelong passion for learning. It advocates for a child-centered and holistic approach to children and their needs integrating care, development, and learning to ensure that preschool provides a secure, stimulating environment where children grow into active, creative, and responsible members of society. Play holds a central role in preschool education as it is seen as “an important activity in its own right” and the foundation for children’s development, learning and well-being (Lpfö 18, p. 8). Additionally, it is stated that children should be involved both in play that they initiate and in play introduced by the teachers. Teachers are encouraged to have an active presence during children’s play so that it is possible “to support communication between the children and to prevent and manage conflicts” (Lpfö 18, p. 9).

One of the goals of the Swedish national preschool curriculum is the transformation and development of cultural heritage from one generation to the next. A key component of cultural heritage is language, and the curriculum emphasizes that national minority languages (Finnish, Sami, Romani, Yiddish, and Meänkieli) should be protected and promoted, and that “children with a mother tongue other than Swedish should be given the opportunity to develop both the Swedish language and their mother tongue” (Lpfö 18, p. 9). However, converting policies into pedagogical practice is not always simple. The Swedish School Inspectorate (2017) reported that although preschool teachers support the development of the Swedish language, they rarely encourage the use of participants’ first languages, other than Swedish, in daily activities. This discrepancy is further highlighted by Puskás and Björk-Willén (2017), who note that even though the Swedish national preschool curriculum advocates for the development of both Swedish and the child’s mother tongue, in practice many preschools have difficulties adhering to this guideline, as many multilingual children do not have access to mother tongue teachers.

Regarding the use of digital technologies in preschool the national preschool curriculum can be interpreted as having a critical and creative approach towards the use of digital technologies in ECEC settings. The critical approach refers to children’s development of necessary digital skills to navigate the digitalization they encounter daily (Lpfö 18). This includes fostering a critical and responsible attitude toward digital technology, enabling them to recognize opportunities, understand

risks, and evaluate information effectively. The creative approach refers to giving children the opportunity to use digital technologies to create, document, and communicate their experiences, ideas, and thoughts (Lpfö 18). Preschool teachers play a crucial role in this process by leading goal-oriented activities that enable children to use digital tools in ways that stimulate their development and learning.

Given the conditions introduced above, there is a compelling need for research that provides empirical evidence of teaching practices that a) can be responsive to bi-/multilingual children's semiotic repertoires, b) and use digital technologies in ways that align with core ECEC principles (e.g. play, child-centeredness) while supporting children's participation. Considering the current gaps, this research empirically investigates how teaching in bi-/multilingual ECEC settings can be responsive to bi-/multilingual children's semiotic repertoires during digital storytelling activities (using tablets and a story-making application) and how can it support children's participation in these activities. So, it aims to contribute to the development of pedagogical knowledge stemming from the exploration of the dynamic interactions of teacher-children and peers during these activities.

Research School

This thesis is conducted within the context of the national research school Play-Responsive Teaching in Early Childhood Education for Social and Cultural Sustainability (PRECEC SCS), funded by the Swedish Research Council (number 2019-03786). The focus of the research school is on how to teach in play-responsive ways that support children's learning and development in the areas of digital technology, multilingualism and contributing to social and cultural sustainability. This research project is designed and implemented by me with assistance from my supervisors to address the areas of multilingualism (specifically the aspect of bi-/multilingual participants' semiotic repertoires) and the use of digital technologies in ECEC settings. Although the primary focus is not on social and cultural sustainability, I recognize its importance and will explore how the research findings relate to these aspects in the discussion section of this thesis. This will allow me to reflect on the broader implications of this work in supporting socially and culturally sustainable practices in early childhood education. The concept of social and cultural sustainability is discussed in Chapter 3 (theoretical framework).

Aim and Research Questions

The aims of this research are:

- to develop new pedagogical knowledge oriented towards teaching in ECEC, concerning responsivity and support to bi-/multilingual children's semiotic repertoires and participation in activities where digital technologies are used,
- to contribute with new empirically grounded knowledge about ECEC concerning multilingualism and digital technologies,
- to further develop the PRECEC theory (Pramling et al., 2019).

These three aims align with the broader mission of the PRECEC research school, which seeks to advance both educational practice (addressed in the first aim, focused on teachers' practice) and academic knowledge (addressed in the second and third aims, which cover empirical and theoretical research matters, respectively). The overarching question of this thesis is: **How are ECEC teachers responsive to bi-/multilingual children's semiotic repertoires during digital storytelling activities (using tablets and a story-making application), and how do they support children's participation in these activities?** The three articles contribute to answering different aspects of this question by analyzing participants' interactions during digital storytelling activities.

- **Article I** focuses on participants' semiotic repertoires, exploring how teachers are responsive to children's semiotic repertoires during digital storytelling activities. It addresses the question: **How are various semiotic repertoires introduced and responded to during collaborative digital storytelling?** This helps to understand the responsive aspect of teaching to children's diverse communicative resources, directly supporting the overarching question about semiotic responsivity and expanding PRECEC's concept of responsivity.

- **Article II** examines children's expressions of agency and teachers' responses during digital storytelling activities. It asks: **a) How does children's agency emerge during digital storytelling activities, and b) How do the teachers' responses create opportunities for negotiating children's agency?** This helps to understand children's participation in activities with digital technologies and how their interactions with the teacher and peers are shaping their expressions of agency. It connects back to the overarching question on how teachers support participation while using digital technologies and to PRECEC theory by elaborating what responsivity to children's agency entails.

-**Article III** delves into children’s narrative production by analyzing the dynamic between teachers’ triggering and scaffolding questions — an analytical distinction stemming from PRECEC theory (Pramling et al., 2019) — and children’s responses during digital storytelling. The questions it addresses are: **a) What processes of children’s narrative production do teachers’ triggering and scaffolding questions support? b) What are the differences in children’s response patterns to these questions during digital storytelling activities?** This article links to the broader investigation of how teachers support children’s participation while using digital technologies by focusing on teachers’ questions and children’s narrative contributions. In addition, it connects to PRECEC theory by empirically examining the concepts of triggering and scaffolding.

Structure of the Thesis

This thesis is structured into two parts. The first part includes six chapters, beginning with an introduction that offers the background for the thesis. *Chapter 2* presents a review of the literature, identifying key gaps in the field. *Chapter 3* outlines the theoretical framework upon which the thesis is built. *Chapter 4* describes the methodology, detailing the research design and its implementation. The following two chapters focus on the findings of this research: *Chapter 5* offers an overview of the three articles that form this thesis, while *Chapter 6* summarizes the findings from the three articles, discusses them in relation to existing research, and highlights the thesis’s contributions to the field. *Chapter 7* provides a summary of the thesis in Swedish. The second part of the thesis includes the three articles:

- I. Shengjergji, S., Myrendal, J., & Pramling, N. (2024). Responding to Children’s Semiotic Repertoires in Collaborative Digital Storytelling. *Early Childhood Education Journal*, 1-12.
- II. Shengjergji, S. (2024). «Yeah, I am making new stuff!»: responsivity to and negotiations of agency during digital storytelling in preschool. *European Early Childhood Education Research Journal*, 1-18.
- III. Shengjergji, S., Myrendal, J., & Pramling, N. Scaffolding and Triggering: teachers’ questions and children’s response patterns during digital storytelling activities in preschool.

Chapter 2 Literature Review

This chapter, through a review of the literature, aims to illuminate key themes, debates, and findings relevant to the research topic at hand. By synthesizing and analyzing existing scholarship, this chapter seeks to identify gaps, contradictions, and areas of consensus within the literature, laying the foundation for the empirical investigation that follows in the three empirical studies. In doing so, it aspires to contribute not only to the advancement of knowledge within the field but also to the ongoing dialogue among scholars and practitioners.

The overarching research question of this thesis investigates how are ECEC teachers responsive to bi-/multilingual children's semiotic repertoires during digital storytelling activities, and how do they support children's participation in these activities. To support this inquiry, the literature review includes several key areas: a) **translanguaging**, this is included since translanguaging is used as an analytical tool and a theoretical lens, b) **teaching practices in bi-/multilingual ECEC settings**, this is included to explore how teachers interact with and engage bi-/multilingual children in ECEC, c) **using digital technologies in ECEC settings**, this is included to explore how and why digital technologies are utilized in ECEC, d) **using digital technologies in bi-/multilingual ECEC settings**, this is included to explore research that intersects these fields (like this thesis), e) **using digital storytelling in ECEC settings**, this is included because digital storytelling activities are implemented in this research and to explore how this activity has been utilized in ECEC.

The literature review utilized various academic databases, including ERIC, Scopus, and Google Scholar. The search strategy involved the use of key terms such as "Early Childhood Education and Care (ECEC)", "preschool", "teaching", "translanguaging", "multilingualism", "multilingual children", "bilingualism", "bilingual children", "digital technologies", "tablets", "touch screens", "digital play", "digital storytelling", and "digital stories". Additionally, the snowball effect was employed, allowing for the identification of relevant articles through the reference lists of the initially found studies. The empirical studies included have been selected from peer-reviewed journals and research anthologies published in

English between 2014 and 2024, all of which focus specifically on the educational level of ECEC.

Translanguaging

Including the concept of translanguaging in this literature review is essential for two reasons. Firstly, in this thesis translanguaging is used as an analytical tool to investigate how bi-/multilingual participants interact using their full semiotic repertoires during digital storytelling activities. Secondly, translanguaging serves as a theoretical lens, offering a deeper understanding of bi-/multilingualism, language, and especially the dynamic use of multiple resources by bi-/multilinguals to communicate without adhering strictly to the boundaries of named languages.

In response to the traditional separation of languages in education, particularly in bilingual education, the concept of translanguaging, a polysemic term (Leung & Valdés, 2019), has gained widespread use in the educational field. Translanguaging was originally introduced by Cen William (1994), who coined the Welsh term “trawsieithu” (English translation “translanguaging”) to describe bilingual pedagogical practices that systematically and intentionally utilized English and Welsh for teaching and learning within the same lesson. The work of García (2009) in the context of bilingual education in the United States, expanded the concept of translanguaging to depict the “multiple discursive practices in which bilinguals engage to make sense of their bilingual worlds” (p. 45), and a typical way of communication in their communities, as it was observed.

However, translanguaging is one of several terms used to describe the fluid linguistic practices of multilingual populations and the view of language as a social practice. Other terms, such as *flexible bilingualism* (Creese & Blackledge, 2011) and *hybrid language practices* (Gutiérrez et al., 1999), similarly emphasize the blending of linguistic features across supposed boundaries. These terms highlight the ways bilingual students navigate language use within institutional settings, often challenging traditional restrictions for language separation while advancing learning and identity work. Jørgensen (2008) introduced *polylingual languaging* to describe how individuals draw from a wide range of linguistic resources to achieve their communicative goals, and Jacquemet (2005) discussed *transidiomatic practices* in the context of globalization. *Codemeshing*, used by Young (2004, 2007) and Canagarajah (2011), refers to the mixing of languages in written forms, whereas *metrolingualism* (Otsuji & Pennycook, 2010) refers to the dynamic linguistic practices

in urban spaces. *Translingual practice* was introduced by Canagarajah (2012) to describe communication that involves multiple modes.

In addition, translanguaging is not only viewed as natural, spontaneous linguistic practices of bilingual speakers but also as a theory of language that understands language as a dynamic social practice. It extends the concept of “linguaging” that denotes a continuously reconstructed social and cognitive practice where individuals collaboratively construct meaning in response to both the socio-cultural context and each other’s contributions (Canagarajah, 2007; Makoni & Pennycook, 2007). Translanguaging theory emphasizes that bi-/multilingual individuals draw on their unitary linguistic system and other semiotic resources as needed in specific contexts to create meaning and communicate (García & Kleifgen, 2020; García & Li Wei, 2014). So, it challenges the traditional view of languages as separate, static, bounded systems defined by nation-states and institutions, and instead focuses on the speakers themselves and the meaning-making possibilities found in the dynamic use of their semiotic repertoires (Otheguy et al., 2015). The prefix “trans-” signifies going beyond “socially constructed language systems”, disrupting conventional ideas of bilingualism and language education (Li, 2018, p. 27). It is important to clarify that translanguaging theory recognizes the social and material significance of named languages, acknowledging that they “exist as social entities and are important for identity, for nationhood, for citizenship, for learning, for participation in society” (García, 2023, p.7).

Since this thesis focuses on teaching in the context of ECEC, translanguaging pedagogies will also be discussed. It is important to highlight that, even before the term “translanguaging” was introduced, several case studies had already focused on and documented multilingual educational practices and they revealed how teachers were drawing on the full linguistic repertoire of students, rather than restricting them to a single language (see Cummins, 2019 for further elaboration). Building on translanguaging theory García et al. (2017) outlines three key components of a *translanguaging pedagogy*: *translanguaging stance*, referring to teachers’ beliefs and perspective about multilingual children and multilingualism, *translanguaging design*, referring to how teachers plan the physical space of the classroom, and plan their teaching to support translanguaging practices for students’ learning, and *translanguaging shifts*, referring to spontaneous flexible language practices that teachers enact within a translanguaging design allowing students’ language practices, needs, and interests to become central to the learning process. *Translanguaging pedagogy* also carries a social justice focus, recognizing

translanguaging as a political act that reinterprets language through a decolonizing lens (Flores, 2014). This critical aspect of translanguaging challenges “the colonial logic that creates hierarchies of power through named languages” and aims to liberate and legitimize the diverse language practices of bilingual and minoritized students (García, 2023, p.9).

Cenoz and Gorter (2021) further contribute to this discussion by defining *pedagogical translanguaging* as a teaching and theoretical approach aiming at enhancing both language and content competence in school settings by drawing on the full linguistic repertoire of the learners and developing multilingualism. It involves teachers’ intentional planning for using different languages for both input and output, as well as other strategies that draw on the students’ entire linguistic repertoire. So, *pedagogical translanguaging* is closely connected to the principles and practices of translanguaging as first implemented in Welsh bilingual education, and it extends these by being learner-centered, encouraging the use and development of all students’ languages, and fostering “metalinguistic awareness by softening boundaries between languages when learning languages and content” (Cenoz & Gorter, 2021, p.1).

However, despite its many strengths, the concept of translanguaging is not without critique. Scholars have criticized the expansion of the term translanguaging to incorporate a diverse array of theoretical claims (Ballinger et al., 2017; Cummins, 2017a; Jaspers, 2018). Another critique points out that while immersion education emphasizing language separation has yielded positive results in terms of achievement and language proficiency, there is a lack of sufficient research demonstrating the benefits of translanguaging for language and content learning (Fortune & Tedick, 2019). Similarly, Poza (2017) underscores the need for further studies to examine the impact of translanguaging on “academic growth... critical understanding and dispositions that reject existing monoglossic perspectives and linguistic hierarchies within schools” (p 120). Moreover, concerns have been raised arguing that rejecting the existence of distinct languages may contribute to linguistic imperialism and injustice, hindering access for minoritized groups (Grin, 2018). Additionally, there is a growing recognition of the need for a more nuanced understanding of how translanguaging operates across various social, cultural, and educational contexts, and how it can inform teaching practices for different groups of students (Leung & Valdés, 2019).

Despite the range of terms that emphasize the complexity of bi-/multilingual communication, this thesis specifically aligns with the concept of translanguaging as articulated by García and her colleagues. This choice is not only due to its focus

on the fluid, dynamic, and multimodal communication practices of bi-/multilinguals, but also because translanguaging goes beyond merely serving as a scaffold for these children (Poza, 2017). Its critical, social, and linguistic stances challenge linguistic inequalities and the traditional native-speaker paradigm of language proficiency by centering language-minoritized children and recognizing the value and legitimacy of their diverse semiotic repertoires (Grosjean, 1989; Kleyn, & García, 2019). This emphasis on social justice and its potential in transforming pedagogical practice makes translanguaging particularly relevant to this thesis, which seeks to explore how teaching in ECEC can be responsive to bi-/multilingual children's semiotic repertoires while also discuss the findings through the lens of social and cultural sustainability.

Teaching Practices in Bi-/Multilingual ECEC Settings

Given that this thesis centers on teaching in bi-/multilingual ECEC settings, this section of the literature review examines how teachers interact with and engage bi-/multilingual children in these environments, offering insights relevant to the aims of this thesis. Most of the existing studies in the literature employ qualitative methodologies, utilize video recordings, are conducted in the United States, and focus on Spanish-English bilingual children (Zheng et al., 2021). In the European context, most studies are conducted in the trilingual Luxembourg and in the Nordic countries.

Teachers' translanguaging practices throughout different activities such as daily conversations, routines, and literacy activities have been increasingly examined in these empirical studies. In Luxembourg, teachers implemented translanguaging practices incorporating different languages, gestures, mime, and visual aids to ensure children's comprehension, promote communication and dialogue (Kirsch, 2021). They also used interaction-promoting strategies like open and closed questions to engage children and encourage language use and language-modelling strategies where they provided corrective feedback, elaborating on children's utterances, and repeating new words to reinforce learning. It is important to note that these teachers participated in a professional development course on multilingual pedagogies. Another study, which looks at how teachers in a multilingual preschool in Hawaii encourage children to contribute to conversations during activities, found that teachers used words from children's home languages, multimodal resources like gestures, physical objects, repeated

words and modified their speech (de Sousa, 2017). Despite finding the use of multimodal resources, translanguaging was conceptualized as restricted to the use of different linguistic resources.

Translanguaging practices are also employed by teachers who do not speak children's languages. Examples derive from preschools in Finland, France, Germany, and Norway, where teachers memorize and use words and phrases in children's home languages bridging linguistic and cultural practices between home and preschool (Mary & Young, 2017; Palojärvi et al., 2023; Pesch, 2021). These teachers value and include children's home languages as part of the preschool, position children as experts in their home languages, reassure their needs, scaffold their language learning, and engage them in literacy activities. In addition, the implementation of translanguaging practices by teachers in preschool classrooms is discussed as an approach for protecting and sustaining minority languages (Kleemann, 2021; Sembiente et al., 2023). This recognition goes back to the concept's origins in Welsh/English bilingual education (William, 1994).

Studies have shown that in various dual language programs, where languages are typically taught separately with dedicated teachers, days, activities, or time slots allocated to each language, teachers incorporate translanguaging into their pedagogical practices (Pontier & Gort, 2016). Their teaching practices go beyond the ideology of language separation, they act as bilingual role models by embracing dynamic and responsive language practices, responding to children's language development and preferences, and ensuring that they are educated bilingually (Palviainen et al., 2016). More precisely, during a bilingual Spanish/English preschool show-and-tell activity, teachers promoted meaning making and communication. This was accomplished by not only translating children's contributions but also recasting, adding more information in the other language, scaffolding, and expanding children's descriptions in a manner similar to language brokering practices (Gort & Sembiente, 2015). In bilingual Malta, Mifsud and Vella (2018) observed how two teachers had different approaches to bilingual education. One teacher followed a language separation model, consistently speaking English to the children, while the other adopted a flexible bilingualism approach, alternating between English and Maltese. Despite these differences, both teachers used similar language mediation strategies, such as switching between languages at the start of the school year, using gestures, visuals, prosody, and repetition of activities. Gestures like pointing, conventional and iconic ones were also part of the bilingual teaching strategies observed in Arabic-Hebrew bilingual preschool

(Schwartz & Asli, 2014). However, it should be noted that teachers' use of gestures was again not discussed as part of their translanguaging practices.

Building on these examples of translanguaging in dual language programs, further research demonstrates how teachers not only engage in language mediation but also foster creative language play and metalinguistic awareness in bi-/multilingual ECEC settings. These studies explore how teachers integrate inventive and dynamic teaching strategies that go beyond simple language separation. More precisely, teachers in a bilingual Spanish/English preschool encouraged children's language playing by acknowledging and using their invented words (Axelrod, 2017). Another form of language playing that teachers engaged children in is translating Finnish songs into English and Swedish. Children's participation in these activities contributed to their development of literal and metaphorical understanding of language, as well as their metalinguistic awareness of language, both of which are indicators of emerging literacy skills (Kultti & Pramling, 2018; 2021). In a similar vein, Velasco and Fialais (2018) explored a teaching practice in a bilingual preschool aiming at developing biliteracy in French and German. In this setting, children acted as researchers of languages, demonstrating metalinguistic awareness by comparing French and German words and reflecting on their print, phonology, and meaning. Notably, the children involved were not fluent in both languages. Instead, an existing translanguaging space facilitated their metalinguistic discussions and expression. Scholars have also pointed out the significance of teachers' continuous documentation of bi-/multilingual children's interests, developmental needs, and learning progress (Alanís, 2018; Baker, 2019). This ongoing documentation is shown to enable teachers to enhance their teaching planning, provide systematic support, and create meaningful learning experiences.

While the primary focus in this literature review is on teaching practices, it is important to briefly explore bi-/multilingual children's interactions in ECEC settings, their metalinguistic awareness, and agency. This part provides valuable insights from empirical studies focusing on bi-/multilingual children's interactions, offering a complementary perspective to teaching practices. More precisely, existing studies suggest that children understand their peers' comprehension abilities, are aware of their language choices, can adapt their language(s) to suit the listener's needs and achieve mutual understanding (Alamillo et al., 2017; Bengochea & Gort, 2022; Morales & Rumenapp, 2017; Pawliszko, 2023; Sanders-Smith & Dávila, 2019). Additionally, alongside their flexible language use, children employ different semiotic means (e.g. gestures, sounds, pointing, body

movements) to communicate and participate in activities (Bengochea et al., 2018; Kangas et al., 2024; Kirsch & Mortini, 2023; Schwartz et al., 2022). Thus, it is argued that multimodal analysis can reveal how bi-/multilingual children communicate both receptively and productively beyond just language and can offer a comprehensive understanding of children's communicative skills, and insights into their participation (Semiante et al., 2020). Likewise, touch is found to provide a common experiential ground, enabling two-year-old children to interact with each other and their teachers (Samuelsson, 2022). Also, it helps children engage with new cultural experiences in the translanguaging space, allowing them to explore the community's multilingual and multicultural diversity. Scholars note that the presence of native speakers or more proficient non-native speakers does not necessarily guarantee positive peer interactions or language learning for beginner language learners, as gaining social acceptance can be difficult (Blum-Kulka & Gorbatt, 2014; Cekaite & Ewaldsson, 2017; Rydland et al., 2014). This highlights the importance of providing greater support and opportunities for interactions with teachers. Furthermore, findings demonstrate examples of bi-/multilingual children's expressions of agency, where they creatively reproduce teaching practices and routine activities, playfully alter expressions, creatively reproduce teachers' speech, draw on formulaic speech, use various semiotic means, switch between languages, and choose the language of communication (Bergroth and Palviainen 2017; Kirsch & Mortini, 2023; Schwartz et al., 2022). The concept of agency is further elaborated in Chapter Three.

Overall, there is a need for more empirical evidence from diverse linguistic and cultural contexts outside United States where the majority language is not English to examine other teaching practices (Zheng et al., 2021). Furthermore, most of these studies analyze and discuss pedagogy focusing on children's and teachers' oral language use. Recently, when translanguaging is discussed and studied there is an explicit theoretical and empirical emphasis towards different semiotic means (e.g. gestures, gazes, facial expressions, mime, visuals, signals, movements) (Blackledge & Creese, 2017; Canals, 2021; Kao, 2023; Pennycook, 2017; Suárez, 2020). Scholars recognize and study translanguaging as a multimodal phenomenon extending beyond flexible language practices but despite this recognition, Kirsch (2021) notes a significant gap in the literature within ECEC studies, particularly in the exploration of the use of "extralinguistic resources such as mime, gestures, or body movements" (p. 339). In their study, Palla and Roth (2018) also argue that verbal communication holds predominant status and is attributed central importance within the discourses of Swedish preschool teachers about language,

communication, and multilingualism. Hence, this thesis aims to fill these gaps by examining teacher-children and peer interactions in multilingual ECEC settings (two international preschools in Sweden) while also analyzing how participants use their semiotic repertoires. By investigating how teachers and children engage in multilingual interactions in these diverse settings, we can gain valuable insights for developing more inclusive, and responsive pedagogical practices.

Using Digital Technologies in ECEC settings

Since this thesis investigates teaching practices in ECEC activities involving digital technologies, this section of the literature review examines how and why digital technologies are used in ECEC, a topic that has garnered significant attention due to the premises of enhancing learning experiences and preparing children for the digital future.

The literature has delved into discussions of how digital technologies are understood. Scholars advocate against the simplistic notion of viewing digital technologies merely as tools or neutral entities (Hatzigianni, 2018; Keirl, 2015). Instead, Säljö (2023) describes them as cultural tools with sociomaterial aspects. Although digital technologies include tangible objects like tablets, smartphones, and laptops, they also encompass software, websites, and digital platforms. These technologies emerge from and embody a complex web of cultural, educational, and psychological knowledge and values developed over a long time. They are deeply intertwined with human actions and interactions, simultaneously shaping and being shaped by them.

Moving on, research has been deeply engaged with the questions of *how* and *why* digital technologies are utilized in ECEC classrooms, focusing on the pedagogical approaches that underpin their usage. The *how* involves examining the context, the teaching practices, and the interactions emerging during the use of digital technologies. The *why* delves into the underlying reasons, intended outcomes (e.g. foster literacy, creativity, problem-solving skills) that drive the integration of digital technologies. Scholars emphasize that the incorporation of digital technologies in ECEC needs to be linked with core ECEC pedagogical principles such as play, child-centeredness, reflective practices, children's rights, agency, and well-being (Hatzigianni, 2018; Kewalramani et al., 2020). Another key consideration is the finding that teachers' interactions with children can differ depending on the digital application used, which also influences children's participation and dialogue (Palmér, 2015). Similarly, the type of application appears

to significantly shape both peer interactions during play and the nature of digital play exhibited (Lawrence, 2018).

Since this thesis investigates digital storytelling activities that are play-formatted (van Oers, 2014, to be elaborated on in Chapter Three) it is important to explore how play and the nature of children's play in contemporary digital age are discussed and studied. Many researchers agree that there is no longer a clear distinction between digital and non-digital forms of play (Edwards et al., 2020; Fleer, 2019; Lafton, 2021). The concept of "converged play" has been introduced to address the new and transformative conditions of children's play. Converged play refers to children's engagement in both traditional and digital activities, where distinguishing between the two is challenging and it is characterized by being multimodal, global-local, and traditional-digital (Edwards et al., 2020). Another study shows that digital devices cannot be separated from the original play-based practices of preschool, thus the author talks about digitally amplified practices (coadjuvants) which contribute with new ways to children's development (Fleer, 2019). Children play not only with digital technologies but also with imaginative technologies, including non-functioning devices, ex-display models or toy replicas. When these artifacts are unavailable, they use props to represent them in their play (Bird, 2020). Other examples of playful activities demonstrate that children utilize digital technologies as creators of digital stories, movies, and 3D-print objects shifting from merely being "consumers" of digital content to becoming "producers" (Fleer, 2017; 2020; Hatzigianni et al. 2020; Skantz Åberg et al., 2015; Undheim 2020; Undheim & Jernes, 2020).

Additionally, a substantial body of research investigates the use of digital technologies in ECEC literacy activities. Given that the third study of this thesis discusses children's narrative competence, it is interesting to briefly explore this expanding area of inquiry. More precisely, the effect of touch screens on young children's literacy development is a primary area of investigation, and especially comparing the effectiveness of digital books to traditional books (Krcmar & Cingel, 2014; Lauricella et al., 2014). While studies present mixed evidence, Reich et al. (2016) provide a comprehensive review highlighting that touch screens have a stronger effect on reading skills compared to traditional books. However, they note that enhanced e-books featuring animations, sounds, and games can distract children. Positive effects of touch screens and applications on children's various literacy skills - including vocabulary development, alphabet knowledge, phonological awareness, reading, writing (generally) and name writing - are reported (Neumann, 2018; Oakley et al., 2020; Roberts et al., 2018; Rogowsky et

al., 2018; Walter-laager et al., 2016). Roskos et al.'s (2016) found that classrooms enriched with e-books offer significant benefits for preschoolers' vocabulary development, especially for those with initially low vocabulary knowledge. Additionally, during multiliteracy practices, children can be successfully scaffolded by more capable peers (through modeling, questions, physical gesture), and peer collaboration can be improved (Kirova & Jamison, 2018; Oakley et al., 2020).

To further understand the use of digital technologies in ECEC, it is essential to explore the pedagogical practices that can effectively support children's learning and development. There is a strong emphasis on the multimodal aspect of learning, which involves developing children's ability to understand and use various modes of communication and representation, both digital and traditional (Yelland, 2018). In this approach, supporting children in navigating and making meaning in a digitally rich world is a key priority. The importance of developing open-ended learning activities that incorporate digital technologies and are both meaningful and relevant to children's lives is also highlighted. Examples derive from activities where children collaboratively create digital animations of stories (Fleer, 2020) or activities where children are encouraged to observe and discover their surrounding using different digital technologies (Vartiainen et al., 2019). In addition, findings point out that digital technologies are used to support co-learning about topics and questions that both teachers and children are unfamiliar with (Johnston, 2019; Marklund, 2020). Scholars suggest that teachers can employ the reflective cycle of act-reflect-evaluate when incorporating new technologies, as well as include children's reflections into their planning (Hatzigianni, 2018). Digital technologies can serve not only for documentation purpose to make children's learning visible but also as "means to enhance critical thinking, questioning and reflection" (Hatzigianni, 2018, p. 181).

Teachers' beliefs and attitudes regarding the integration of digital technologies in preschool have been extensively studied (Fotakopoulou et al., 2020; Hernwall, 2016; Kewalramani & Havu-Nuutinen, 2019; Vidal-Hall et al., 2020) based on the premise that teachers' "way of thinking" can shape and have implications on their educational practice (Nespor, 1987). A key finding suggests that teachers' traditional beliefs on play and nature of play-based pedagogy, especially the emphasis on open-ended and exploratory play, can hinder the integration of digital technology in ECEC (Aldhafeeri et al., 2016; Edwards et al. 2020; Palaiologou, 2016). Overall, the literature presents a dichotomy in teachers' beliefs regarding the integration of digital technology in ECEC. On the one hand, there are concerns among educators about the potential negative impacts of digital technology on

children's well-being, social development, and health (e.g. Dong, 2018; Vidal-Hall et al., 2020). On the other hand, there is a positive attitude among teachers, emphasizing the potential benefits of digital tools in enhancing educational experiences (e.g. Jack & Higgins, 2019; Nikolopoulou & Gialamas, 2015). This dichotomy in findings underscores the complexity of educators' perspectives, suggesting that beliefs about digital technology's role in ECEC are shaped by various factors, including individual experiences, educational contexts, and perceived outcomes.

Overall, existing reviews in this field highlight the need for more research on the use of digital technologies by teachers and children in everyday ECEC settings (Undheim, 2022). There is a particular need for research that focuses on capturing real-time social interactions, as they unfold moment by moment (Miller et al., 2017). Only few studies have thoroughly described and analyzed the processes and social interactions involved in children's on-screen writing (Kucirkova et al., 2019). Furthermore, Kewalramani et al. (2020) emphasize that ECEC settings require clearer guidance on what constitutes high-quality pedagogies involving digital technology. They also highlight the importance of ensuring that the use of digital technologies align with the fundamental principles of ECEC, such as fostering play and maintaining a child-centered approach. Hence, this thesis aims to address this gap by offering detailed insights of teacher-children's interactions and teaching practices that support children's participation during digital storytelling activities, thereby enriching the understanding of pedagogical practices involving digital technologies.

Using Digital Technologies in Bi-/Multilingual ECEC settings

This thesis is situated at the intersection of two fields: bi-/multilingualism and the use of digital technologies in ECEC. Both areas have received significant attention and research while fewer studies examine their intersection. Thus, this section of the literature review examines studies specifically focused on the overlap between bi-/multilingualism and digital technologies in ECEC.

Several of these studies have explored peer and teacher-children's communication and interaction in bi-/multilingual preschool environments that integrate digital technologies. For instance, a talking pen with voice recordings from the children's families was used in an action research project with toddlers (Ljunggren, 2016). This approach not only fostered a multilingual environment

and enhanced language awareness but also transformed teacher-child interactions from a question-answer format to collaborative knowledge discovery. The digital technology connected children's home languages with preschool activities, creating meaningful connections between school and family contexts. Similarly, Morales and Rumenapp (2017) employed video-stimulated recall during literacy activities to explore bilingual children's use of multiple semiotic resources. By reviewing videos with the children, the researchers uncovered the children's engagement in translanguaging practices and their linguistic awareness. In these activities, children co-constructed meaning using Spanish, English, embodiment, and gestures.

Additionally, a video ethnographic study in three preschools, examined how digital tablets supported communication in a minority language, Finnish (Petersen, 2018). While fixed applications (e.g., Talking Dictionary and Talking Memory game) did not encourage Finnish communication, open-ended applications like Skype allowed children to narrate, sing, and use physical and facial expressions in Finnish. Petersen (2018) concludes that digital tablets facilitated multilingual activities and created more opportunities for minority language communication. Another study that adds to the discussion compared touchscreen interactions with traditional book reading in a multilingual Swedish preschool (Samuelsson et al., 2022). They found that while toddlers' verbal communication decreased during touchscreen activities, their use of gestures and touch increased. The study underscores the importance of a multimodal perspective in communication and argues for "new possibilities of scaffolding by an attentive and active teacher" (Samuelsson et al., 2022, p. 71). While these studies show the potential of digital technologies to support rich, multimodal communication and language awareness they also raise questions about how well these technologies can be integrated into broader pedagogical strategies. The success of these interventions is closely tied to teachers' ability to mediate the use of technology, turning these tools into opportunities for meaningful, inclusive learning rather than simply adding another layer to existing teaching practices.

Thus, studies have also emphasized the crucial role of preschool teachers in mediating activities in which bi-/multilingual children utilize digital technologies. For example, teachers' mediation was explored in interactions using an online Russian language curriculum (Digital Fairytales) with 4–5 years old emerging bilinguals, Russian and Tatar language (Meskill et al., 2020). Teachers' mediation practices included *guided seeking*, where teachers prompted children to identify objects and respond to questions using their newly acquired language, fostering

active participation. They also leveraged *digital characters*, from the Digital Fairytales, to create a connection between the children and the learning material, helping them internalize language structures. Teachers further motivated the children by incorporating *rewards and positive feedback*, such as earning virtual gems, which encouraged continued engagement with the digital content. The concept of *screen magic*, which refers to the excitement and fascination children experience when interacting with digital devices, was used to capture and maintain their attention during lessons. Additionally, peer collaboration was encouraged, with teachers fostering social interaction and peer support, allowing more proficient language users to assist their peers. These mediational practices of teachers demonstrate how digital tools can be integrated into early bilingual education, providing dynamic and interactive learning opportunities that support both language development and social interaction.

In New Zealand, an ethnographic approach that combined Māori and Western methodologies explored teachers' mediation (Davis et al., 2019). The findings reveal that teachers regulated children's access to digital technologies and empowered skilled peers to assist those less proficient. However, the study highlights a lack of time for teachers to develop a broader range of mediation behaviors and to choose and set up resources tailored to "the needs of particular multilingual children in partnership with families and ethnic communities" (Davis et al., 2019, p. 1330). In another context, McPake and Stephens (2016) investigated the use of the application "Our Story" in a Gaelic immersion preschool. Here, teachers prioritized structured learning of Gaelic words and phrases over spontaneous communication, explaining that this approach was intended to prepare children for primary school by ensuring they could follow instructions, understand stories, and build a basic productive vocabulary. While this approach is effective in building foundational language skills, it may limit opportunities for children to use the language dynamically in more creative, interactive ways. Similarly, Moinian et al. (2016) surveyed mother tongue teachers in a large Swedish municipality to understand how they used digital tablets in ECEC settings. The findings show that despite limited access to digital devices, mother tongue teachers used digital tablets as a tool for accessing and developing knowledge in languages with limited learning resources. While this approach leverages technology to address resource gaps, it also raises concerns about equity in access to digital tools and the potential challenges faced by educators trying to bridge these gaps in under-resourced settings.

Further insights into teaching conditions that support emergent bilinguals' eBooks composing are examined in a two-year design-based research study carried in the United States (Rowe & Miller, 2016). In the first year, most dual-language recordings were created by Spanish-English bilinguals, with speakers of other languages rarely composing in their heritage languages. To address this, the second year introduced redesigned teaching conditions, including language-specific demonstrations. Multilingual demonstration eBooks, containing translations in all children's heritage languages, were shared during group activities, encouraging engagement as dual-language composers and validating all languages in the classroom. Additionally, the teachers incorporated explicit support for metalinguistic awareness, by discussing with children the purposes of creating dual-language texts, which helped them reflect on and translate between languages. The use of child-friendly digital cameras and iPads equipped with writing, drawing, and bookmaking applications facilitated multimodal learning, allowing children to integrate text, images, and voice recordings in their eBooks. These tools also fostered culturally relevant learning by incorporating home photos and heritage language recordings, and they enhanced engagement and participation by enabling children to create personalized content that reflected their linguistic and cultural backgrounds.

Across these studies, while digital technologies offer significant potential for enhancing bi-/multilingual education, their successful implementation relies heavily on teachers' mediation, the availability of resources, and time (Nilsen, 2024). Without these, digital technologies risk becoming superficial add-ons rather than deeply integrated elements of bi-/multilingual education in ECEC settings. Overall, the intersection of bi-/multilingualism and the use of digital technologies in ECEC is understudied and more research is needed to explore teaching practices and bi-/multilingual children's participation during activities with digital technologies across different contexts. Hence, this thesis investigates how are ECEC teachers responsive to bi-/multilingual children's semiotic repertoires during digital storytelling activities (using tablets and a story-making application), and how they support children's participation in these activities. The findings aim to address the existing gap and contribute to the development of pedagogical approaches that use digital technologies and meet the needs of bi-/multilingual children.

Using Digital Storytelling in ECEC settings

Digital storytelling has been defined as the contemporary expression of the traditional art of storytelling (Rule, 2010), or in other words as “the art of telling stories with a variety of digital multimedia, such as images, audio, and video” (Robin, 2006, p. 1). The articles in this thesis explore how teachers-children interact during digital storytelling activities in bi-/multilingual ECEC settings. Thus, it is important to explore how empirical studies in the literature have utilized digital storytelling in ECEC and what are the relevant findings.

A systematic review of digital storytelling in primary, secondary and higher education highlights that such studies focus on: (a) appropriating given concepts, (b) enacting agency, (c) reflecting on experiences, (d) involving critical reconstruction of concepts, and (e) engaging in identity formation through storytelling (Wu & Chen, 2020). These themes are also apparent in studies that employ digital storytelling in ECEC settings. Such studies explore the effectiveness of digital storytelling as an educational approach and how it is used by teachers and children. More precisely, quantitative studies often compare the effects of digital and traditional storytelling on children’s learning. Children are positioned as receivers or audiences of digital or traditional storytelling activities, whose abilities and understanding are examined to explore the effects of those activities. Kocaman-Karoglu’s (2015) quantitative research found that digital storytelling is more effective than traditional methods in enhancing preschoolers’ conceptual understanding (of the skeletal system) (Kocaman-Karoglu, 2015). She explained these findings referring to research showing that integrating computer technologies into learning environments can increase students’ motivation, which likely contributed to the better performance of the digital storytelling group. Additionally, she argued (based on previous research) that the combination of multimedia elements (such as music, drama, visual images, and audio narration) helped improve memory retention and deepened engagement with the content. However, another study reports higher recall of the story and its characters in children who experience traditional picture book storytelling compared to their digital formats who “were told as e-stories using computer, projector, projector screen and sound system” (Sapsaglam et al., 2020, p. 125). The findings were explained by emphasizing the teacher-child interactions during storytelling with picture story. However, it should be mentioned that the stories from the picture books were told by a researcher and not children’s teacher and no interactions were described.

Additionally, a case study conducted in Croatia found that mathematical and computer literacy skills were significantly enhanced in children who learned through digital storytelling compared to those who learned through traditional storytelling methods (Preradovic et al., 2016). The teachers also noted that children were more motivated, engaged, and enthusiastic during the digital storytelling. In a similar manner, Maureen et al. (2018) showed that digital storytelling activities significantly boosted literacy skills in Indonesian children compared to traditional methods. The authors clarified that although the format was consistent across both experimental conditions, “in the digital storytelling condition, the story was prerecorded, using multimedia including texts, pictures, voices, and sounds” (Maureen et al., 2018, p. 383). This again emphasizes the significance of multimodality as a key factor. The digital storytelling activities were led by a researcher, but the traditional storytelling activities were led by the children’s teacher. When reviewing such studies, one can question whether children’s increased engagement and improved learning outcomes are sustained over time or if they are diminished as the novelty of the new technology fades.

Both digital and traditional storytelling have been argued to offer students opportunities to practice 21st-century skills such as collaboration, problem-solving, critical thinking, and creativity (Lisenbee & Ford, 2018). More precisely, a follow-up study by Maureen et al. (2020) confirms that both oral and digital storytelling, combined with play-based activities, effectively support literacy and digital literacy development. The study found that digital storytelling, which integrated multimedia elements such as visuals, sounds, and narration, offered slight advantages over traditional storytelling. According to Maureen et al. (2020) this could be explained “by the fact that the use of digital elements can contribute to making abstract content more understandable and motivating for young children” (p.69). The role of play-based follow-up activities embedded in both storytelling and digital storytelling sessions was crucial. These activities involved children participating in meaningful interactions with letters, sounds, and writing during and after the storytelling sessions. They allowed children to engage with the stories in a meaningful way, helping them to develop a better understanding of narrative structure, language, and print.

Many qualitative studies on digital storytelling emphasize its potential to support children’s agency by giving them an active role as creators of their own digital stories. This approach not only enhances their participation but also has been shown to serve as a reflective tool for both teachers and children (Yuksel-Arslan et al., 2016). Digital storytelling fosters communication with parents,

improves children's motivation, engagement, and self-confidence as they take ownership of the learning activity and transform abstract knowledge to concrete knowledge (Yuksel-Arslan et al., 2016). Particularly in multilingual settings, digital storytelling offers opportunities for children to exercise agency through translanguaging and multimodal communication (Kirsch, 2017). Kirsch (2017) observed that multilingual preschoolers using the iTEO application drew on both their linguistic and multimodal resources to ease communication, manage the storytelling process, construct knowledge and identities, and express their voices. Kirsch (2017) argues that the iTEO application facilitated a translanguaging space, promoting a more inclusive multilingual pedagogy.

Other studies also report positive outcomes. For instance, it was found that 4-5-year-olds could effectively express their understanding of preschool rules, behaviors, and self-perception by creating digital stories (Kervin & Mantei, 2016). Similarly, an action research study by Fantozzi et al. (2018) reported that using open-ended applications in a play-based classroom facilitated children's emergent literacy, storytelling, agency, and collaboration since they recorded stories about them, and promoted home-preschool communication when those stories were shared with parents. Additionally, Norwegian teachers supported children's digital storytelling by engaging in dialogue, showing genuine interest, and respecting their ideas (Undheim & Jernes, 2020). Another study found that participatory planning in open-ended, playful digital storytelling activities improved children's motivation and engagement (Merjovaara et al., 2020). They emphasized the importance of having a clear purpose for the digital storytelling activity and the interactions between children (emotional tensions and recognition of each other's contributions). These findings emphasize the value of digital storytelling in enhancing children's agency and literacy development, but they also suggest that the success of such activities heavily depends on teacher mediation and the openness of the digital tools.

Skantz Åberg et al. (2014) add to the discussion by pointing out that while children successfully collaborated on creating digital stories, the use of digital tools often diverted their focus from the narrative itself to the technology, such as labor division and tool management. This reveals a tension between fostering children's creativity and agency, and the challenges posed by the very tools intended to support these goals. Furthermore, the study found that teachers concentrated more on the technical and writing aspects rather than on plot development.

It is interesting to mention a large multilingual digital storytelling project that included primary and secondary schools even though it is not in the same

educational level as the previous studies (Anderson et al., 2018). The study pointed out that although several studies have looked at digital storytelling in the mother tongue (mostly English), there has been much less research on digital storytelling as an approach for fostering foreign or minority language learning. This gap in research is important to note, as it points to the underexplored potential of digital storytelling in supporting multilingualism.

To sum up, few studies have examined the moment-by-moment process of children's creation with digital storytelling alongside teachers' pedagogical practice in real-time. Most of the existing research relies solely on self-reported interviews. This thesis investigates how are ECEC teachers responsive to bi-/multilingual children's semiotic repertoires during digital storytelling activities, and how they support children's participation. The findings aim to address existing gaps and can have significant implications for teachers' pedagogical practices when children engage in meaning-making, collaboration, and creation with digital technologies.

Chapter 3 Theoretical Framework

This chapter establishes the theoretical foundation of this thesis by presenting PRECEC theory and other key concepts that inform and guide the focus of the thesis and the analytical approach. The purpose of this chapter is to situate the thesis within broader scholarly discussions, providing a lens through which the research questions and the findings are examined and interpreted. More precisely, this chapter outlines (a) **PRECEC theory**, (b) **conceptual components that constitute PRECEC theory**, (c) **learning approach**, (d) **conceptualizing agency**, (e) **conceptualizing children's participation**, (f) **language approach**, (g) **translanguaging, semiotic repertoires, and PRECE**, (h) **social and cultural sustainability**.

PRECEC Theory

Since this thesis centers on teaching in ECEC, PRECEC theory serves as the main framework for conceptualizing teaching and examining how are ECEC teachers responsive to bi-/multilingual children's semiotic repertoires during digital technologies, and how they support children's participation in these activities. Additionally, by drawing from empirical findings of the three studies, this thesis aims to expand upon PRECEC theory, contributing new theoretical insights from bi-/multilingual settings that the use digital technologies.

Developed by Pramling et al. (2019), PRECEC is a teaching theory in the field of ECEC that conceptualizes the relationship between teaching and play. Teaching and play are not dichotomized, rather they are conceptualized as potentially mutually related. Contrary to the traditional view of teachers in the background of children's play (Pramling et al., 2009) PRECEC stresses teacher's participation in children's play while recognizing the importance of children's free play. Teacher's participation can be both reactive (responding to children's play initiatives) and proactive (introducing new possibilities, fields of knowing that children might not have been aware of). The latter is also considered a form of responsivity to what children indicate that they may not have experience of. Importantly, PRECEC emphasizes that teacher's role is responsive to the children's experiences,

understanding, needs, and playful scenarios. So, teaching is understood as an activity (rather than an action taken by the teacher) in which the mutual engagement of both the teacher and children shapes and constantly co-constructs the learning experience through participants' responsiveness to verbal and non-verbal contributions.

The teacher's role holds significant responsibility as the more experienced participant and representative of the preschool institution. Teaching is intentional for the teacher since the formal preschool context aims to introduce and support children "in starting to appropriate culturally valued forms of knowing" (Pramling et al., 2019, p.175). Thus, teachers are responsible for teaching in an engaging and developmental way. However, regarding the learning outcome, it should not be expected that children will acquire an identical understanding after the teaching process because there is not a causal relationship between teaching and learning (Pramling et al., 2019). Children engage in mutually constituted activities, having different funds of knowledge, and leave these activities having earned different learning outcomes.

PRECEC also underscores the distinction between teaching and instruction. Instruction is viewed as an action, where a more knowledgeable person informs someone else about how something is done or what something is. In contrast, teaching is seen as a mutual activity characterized by the equal importance of all participants and their responsiveness to each other. While instructional practices may be present in teaching, they alone do not constitute teaching in the PRECEC framework, as they lack its fundamental emphasis on responsiveness.

Moving forward, since this thesis analyzes digital storytelling activities which are play-formatted (van Oers, 2014), it is essential to understand PRECEC's approach to play, which is also adopted here. The value of children's play has been acknowledged widely in contemporary society, especially with the Article 31 of the UNCRC, that acknowledges every child's right to rest, leisure, and age-appropriate play and recreational activities, as well as their freedom to participate in cultural and artistic life. Play has a significant role as a leading activity during the preschool years and according to Vygotsky (1966, p. 6) play is "the leading source of development in the preschool years". PRECEC refrains from putting emphasis on particular forms of play or defining what constitutes play. Instead, its primary concern lies in exploring how children and teachers communicate about their involvement in activities that they themselves perceive and demonstrate as play (shifting between acting *as if* and *as is*). However, it is clearly explained how play is approached. Play is seen as the participants' concern, and the concept draws upon

Wittgenstein’s philosophical notion about “family resemblance” (1953, §§65–67). This approach suggests that play is similar to a family where members exhibit shared characteristics and relationships, yet without possessing a set of universal attributes that apply to all members.

An illustrative example highlighting the importance of not constraining the definition of play is the new body of research that explores children’s play informed by digital technologies (Disney et al., 2019; Lafton, 2021; Wood et al., 2019). The use of digital technologies in children’s playful activities constitutes a part of this thesis, as previously mentioned. In the contemporary digital age, play has evolved and is argued to no longer be experienced as an activity strictly real or virtual. Scholars, such as Palaiologou (2016), emphasize the need for a deconstruction of play characteristics and an evidence-based rationale to study the contribution of digital devices in children’s play. Thus, PRECEC provides an appropriate theoretical framework for this investigation.

Additionally, van Oers’ (2014) theoretical work on activity formation aligns with PRECEC’s approach to play. He approaches “play as a mode of human activities” (p. 61) and suggests that most activities can be performed in either a playful format or in a more rigid, structured way. More precisely, van Oers (2014) clarifies that human activities are typically not the execution of a fixed set of actions; rather, they are dynamic and adaptable, allowing for adjustments to the steps, goals, and tools used. Regarding the format of activities, he argues that whether an activity is recognized depends on three factors: the presence of rules, the level of engagement, and the degree of freedom participants have. Connecting back to the digital storytelling activities of this thesis, the claim that these activities are play-formatted can now be understood. Although digital storytelling activities have a structured framework, they allow for flexibility and creativity, aligning with van Oers’ view of play as a mode of human activity. These activities involve a set of guidelines or goals, but children retain significant freedom in how they approach and engage with the content, the tools, their peers and teacher. This flexibility encourages dynamic participation, with children altering the storyline, choosing how to represent ideas, and experimenting with digital tools. According to van Oers (2014), play is characterized by rules, involvement, and degrees of freedom, all of which are present in digital storytelling as children are engaged and can creatively explore within the activity’s structure. Consequently, these digital storytelling activities are understood as playful because they combine structured elements with the freedom for children to explore, innovate, and co-construct meaning.

Furthermore, PRECEC integrates insights from several theoretical traditions (such as Vygotsky's cultural-historical theory, phenomenography, variation theory, and developmental pedagogy) and is grounded in empirical research in preschools. The empirical research was a combined research and development project where researchers, teachers and principals worked together to produce new knowledge about *didaktik*. The term *didaktik* that is used differs from the Anglo-American term "didactics" which refers to traditional lesson approach with an instructing teacher and passive children (Hamilton, 1999). *Didaktik* as used in PRECEC is understood and relates to the continental/German tradition of *didaktik* and the concept of *Bildung* where, amongst other things, "a *Bildung* based approach listens to the children's perspectives and gives them the opportunity to influence their daily lives" (Broström, 2012, p. 70). Grounded in Vygotsky's cultural-historical theory, PRECEC recognizes that even in play, children are guided by cultural experiences and inherent rules. Also, building on Vygotsky's (1930/2004, 1933/1966) and Fleer's (2011) work PRECEC supports the notion that play, and the actions taken in an imaginary sphere can extend children's experience, resulting in a dialectical relationship between play, imagination, and experience. Fleer's (2011) terminology regarding imagination is compatible with PRECEC since she states that imagination moves the child toward and away from reality but that is always related to reality (shifting between acting *as is* and *as if*, in PRECEC's terms).

In summary, PRECEC provides the theoretical foundation for understanding teaching and play in ECEC. Through empirical investigation, this thesis seeks not only to apply but also to extend PRECEC, exploring its applicability in multilingual settings that use digital technologies, an aspect that is not addressed by Pramling et al. (2019). By doing so, this thesis aims to make theoretical and empirical contributions that refine and expand the PRECEC framework, specifically in terms of (a) teacher responsivity to bi-/multilingual children's semiotic repertoires (Article I), (b) responsivity to children's expressions of agency (Article II), (c) the conceptual distinction between "triggering" and "scaffolding" (Article III), and (d) teaching practices when digital technologies are used (Article I, II, and III).

Conceptual Components that Constitute PRECEC Theory

The previous section provided a general introduction to PRECEC, and the following section elaborates into specific concepts that constitute PRECEC that also serve as analytic tools throughout this thesis. These concepts are instrumental

in examining the empirical data, specifically in analyzing the interactions of teacher-children during the digital storytelling activities.

At the heart of PRECEC is the shift between acting and thinking *as if* and *as is* and relating these modes in sense making (Pramling et al., 2019). Children's participation in play activities can take the form of *as if*, where they engage with an imaginary reality and explore how things could be, or they engage with reality *as is*, where they take things in their ordinary, conventional ways. This theoretical distinction has practical implications for teaching, as teaching also involves a dynamic shift between *as if* and *as is* to responsively address children's experiences, understanding and play scenarios facilitating their learning and development. Bridging between these two modes of engagement in activities (*as if* and *as is*) is considered crucial for children, not only in play but also in learning about aspects beyond the realm of play.

The interrelationship between the two dynamic concepts of intersubjectivity and alterity is important in understanding and discussing PRECEC. In a joint play activity, there is a need of establishing a common ground - a temporarily sufficient intersubjectivity - between the participants for them to engage in the activity and their words and actions to be understood. However, this process is constantly negotiated amongst the participants because different perspectives, voices and actions alter/change the direction or the meaning of the activity (alterity). So, teaching that is responsive to play occurs "in the negotiated and dynamic intersection between temporarily sufficient intersubjectivity and alterity" (Pramling et al., 2019, p. 172) but it should not be assumed that all participants exit the joint activity having understood the content in the same way.

The concept of "triggering" is introduced in PRECEC to precisely discuss and analyze ECEC and empirical play data, since the concept of scaffolding is not suitable enough for this perspective. While scaffolding, as emphasized by Wood et al. (1976), focuses on achieving a specific goal (in the original study, to construct a three-dimensional structure) through a tutor's individual and strategic assistance (to 3-5-year-old children), it may not align with the open-ended and unpredictable nature of play. Scaffolding, a key concept in educational research, has also faced criticism for its challenges in adjusting to the complexities of classroom communication, differing from the initial one-to-one scenarios (Elbers et al., 2013). Additionally, a differentiation has been observed between scaffolding that includes physical objects, as seen in the initial study, and the more dialogic nature of classroom interactions (Fleer & Pramling, 2015; Elbers et al., 2013). PRECEC suggests that, in the context of play the term "triggering" better captures teachers'

responsive actions that enhance cognitively or aesthetically children's play. In essence, triggering means "actions that open up for fantasizing, engaging in exploring what is to a large extent unexpected, unpredictable, open" (Pramling et al., 2019, p.174).

Overall, all three studies included in this thesis draw on these conceptual resources to analyze the empirical data where participants interact and co-construct digital stories. Article III, however, places a particular emphasis on the analytical distinction between "triggering" and "scaffolding" by closely examining the patterns of teachers' questions and children's responses.

Learning Approach

Kultti and Pramling (2015) argue that the conceptualization of phenomena like learning is essential for educational theorizing and has material consequences for ECEC. In other words, the way learning is conceptualized shapes the understanding of teaching itself. Hence, even though this research focuses on the teaching process in ECEC, it is important to indicate its sociocultural approach to learning.

Vygotsky (1978) emphasizes that while learning and development are closely connected, they are not identical processes; according to him "learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers" (p. 90). The emphasis is placed on learners appropriating cultural tools and practices experienced within a social context, underscoring that learning is inherently connected to the environment in which it takes place. Therefore, in sociocultural theory, a dynamic and dialectic relationship between the individual and the social-cultural processes is indicated. According to this perspective, learning can be understood as changed participation in social activities and interactions with peers and/or more knowledgeable others. Learning is not conceived as acquisition, as something to be possessed, but rather as the co-construction of knowledge through a process that is socially mediated (Sfard, 1998; Stetsenko, 2009).

Mediation in Vygotsky's sociocultural perspective refers to the process through which individuals use tools, signs, and symbols to interact with their environment and mediate their understanding of the world. Kozulin (2003) points out three forms of mediation: mediation through material tools (digital technologies in this research), mediation through psychological tools (language in this research) and

mediation through other human beings (teacher and peers in this research). Some learning, or what Vygotsky refers to as cultural development, occurs in the zone of proximal development (ZPD), a core theoretical concept of Vygotsky's work (1978) that refers to the distance between learner's cognitive, social abilities and performances and the potential abilities and performances that they can accomplish with the assistance and guidance of more knowledgeable others. Lastly, it should be mentioned that Vygotsky (1978) perceives children's imaginative and symbolic play to be essential for their learning process.

In summary, these theoretical insights highlight an emphasis on the interactions between teachers (as more knowledgeable participants) and children, the mediation of cultural tools (such as language, tablets, and story-making applications in this study), and the view of teaching as a co-constructed, context-dependent process rather than a one-way transfer of knowledge. This perspective aligns and supports the thesis focus on how teaching in ECEC can be responsive to bi-/multilingual children's semiotic repertoires and support children's participation during digital storytelling activities.

Conceptualizing Agency

In this section of the theoretical framework, children's agency is conceptualized as it is a central focus of the Article II. The concept of children's agency gained prominence as scholars in New Childhood Studies and the New Sociology of Childhood contributed to reshaping ideas about children and childhood. A central aspect of this paradigm shift involves seeing children as agentic beings and independent social actors with their own perspectives, capable of shaping their social lives, learning, and interactions, rather than seeing them as "social becomings" (future adults) who passively receive adult guidance (cf. Corsaro, 2005; James et al., 1998). This shift emphasizes children's ability to influence their environment, make choices, and actively participate in social processes.

However, this view of agency as an innate ability possessed by all children has been criticized for overlooking the sociocultural contexts and treating agency as if it exists independently of the cultural, historical, and institutional structures that shape human actions and thinking (Wertsch et al., 1993). In response to this critique, scholars like Ahearn (2001) conceptualize agency as "a socioculturally mediated capacity to act" (p. 112), emphasizing that agency cannot be separated from its social context. Building on this, Bergroth and Palviainen (2017), in their study of children's agency in bilingual contexts, define child agency as "the

socioculturally mediated capacity to act, as it is reflected in the child's communicative acts" (p. 378), highlighting how agency is both expressed and shaped within specific social interactions. Recently, Drieschner and Smidt (2023) contribute to discussions about agency by pointing out a dual image of the child where s/he is recognized as both an active participant and a "developing, vulnerable child in need of education, whose environment must be responsibly shaped pedagogically" (p. 32). This duality acknowledges children's capacity for agency and participation while also understanding the importance of the sociocultural context that shapes, delimits, and supports the emergence of agency.

This thesis adopts a sociocultural approach to agency that understands it not as an inherent trait of children but as something that emerges through engagement in dialogic interactions encompassing mediation of cultural artifacts (e.g., language, signs, digital technologies) within specific socio-cultural contexts (Edwards, 2007; Emirbayer & Mische, 1998; Fisher, 2010; Rainio, 2008). In this theoretical perspective, mediation (Vygotsky, 1998) is essential, as cultural artifacts together with interactions with others, play pivotal roles in shaping human cognition and behavior, thereby impacting one's ability to act (or not act) and make decisions. In this view, agency is negotiated, mediated, and co-constructed during dialogic interactions. In other words, using a metaphor proposed by Alderson and Yoshida (2016), agency is likened to a river that both shapes the surrounding landscape (structures), but the landscape "also shapes the course and speed of the river" (p. 78).

In relation to PRECEC and the concept of agency, it is worth noting that while agency is not explicitly emphasized in PRECEC's initial empirical analyses (Pramling et al., 2019), it is nevertheless embedded within the theoretical framework (see, in particular, Lagerlöf et al., 2019). More precisely, children's expressions of agency are evident when they shift between *as if* and *as is* modes of thinking and acting during playful activities and when they alter the course of the activities (see empirical examples Lagerlöf et al., 2019; Pramling et al., 2019). Hence, PRECEC promotes the idea that teachers' responsivity towards children's play hinges on opening up and being responsive to children's expressions of agency. Lagerlöf et al. (2019) argue that agency is not an inherent, naturally developing trait; instead, it requires scaffolding and guidance from teachers (or more knowledgeable others) to develop. This precise perspective is further elaborated in the second study based on the empirical findings.

Since this thesis explores ECEC teaching in multilingual preschool settings, it is important to note that scholars have provided empirical examples illustrating

how bi-/multilingual children express their agency. For instance, in Bergroth and Palviainen's (2017) ethnographic study of Swedish-medium preschools in Finland, some children adapted to the classroom's monolingual Swedish language expectations by speaking Swedish when interacting with teachers, but they expressed their agency by switching to Finnish when communicating with their peers. Similarly, Knoll and Becker (2023) found that children in Swiss bilingual German-English daycare centers demonstrated their agency by employing translanguaging practices where they switched between German and English, depending on their speakers, situation, or activity. Additionally, in multilingual contexts like Luxembourg and Israel, researchers investigated bi-/multilingual children's language-based agentic behavior, a term that refers to children's communicative strategies that demonstrate their agency (Mortini, 2021; Schwartz et al., 2022). They found that "children demonstrate agentic behavior through shaping the language use in learning activities and managing the class" (Schwartz et al., 2022, p. 836). Notably, Schwartz et al. (2022) suggest that, in contrast to research where children's agency is often seen in their language preferences or in the display of bilingual skills during free play, children in their multilingual classrooms used language purposefully to achieve specific interactional goals.

Overall, while this thesis explores ECEC teaching in multilingual preschool settings, it does not explore children's agency in relation to language (as the above studies). Article II specifically examines children's expressions of agency and teachers' responsivity to it in activities involving digital technologies. This focus was chosen due to (a) limited research on children's agency in ECEC settings that incorporate digital technologies (Scollan & Farini, 2020), and (b) the dual focus of this thesis on semiotic repertoires and the use of digital technologies in ECEC.

Conceptualizing Children's Participation

In this section, the concept of children's participation is discussed since it is emphasized in the overarching research question of this thesis. Participation has become a widely accepted standard within the field of ECEC both in research and practice. Sinclair (2004) notes three main reasons for the increased recognition of children's participation. First, the children's rights agenda, particularly through the UNCRC, has affirmed children's rights to participate in decisions that impact them, especially as outlined in Article 12. However, the word "participation" is not explicitly mentioned in the text of Article 12 (UN Committee on the Rights of the Child, 2009). This agenda also balances children's right to participate with their

need for protection, challenging older, paternalistic ideas that assumed caring for children meant limiting their agency. Second, as mentioned above the shift in understanding children as capable social actors who can contribute to decision-making and express insights about their own lives (cf. Corsaro, 2005; James et al., 1998). Third, the rise of consumer power, starting in the 1970s, has shifted expectations around user involvement in public services, extending now to children as well. The consumer movement emphasizes that individuals should have a say in the quality and type of services they receive, and this principle has broadened to influence policymaking and resource allocation more generally.

Despite the wide recognition of notion of participation, there is no clear agreement on the definition of children's participation. Participation is multi-dimensional and can be understood in various ways, depending on the context. Also, it can be viewed as a spectrum, ranging from minimal involvement—where children may be informed about decisions but lack any real input or influence—to more substantial levels of engagement, where children initiate and share responsibility for decisions with adults (Hart, 1995; Shier, 2001). It is important to mention the interdependent relationship between participation and agency because together, these concepts highlight how children can meaningfully engage with and shape their surroundings. More precisely, participation serves both as a means for expressing agency and as a context through which agency emerges and develops. For example, Clark and Moss (2011) emphasizes children's voices in early childhood settings, showing that children's agency is enacted when they are given the opportunity to choose how they express themselves and participate. Barbara Rogoff et al.'s (1993) work on guided participation suggests that as children participate in shared activities with more knowledgeable others, they begin to internalize skills, knowledge, and confidence, which gradually enhances their sense of agency and independence.

Furthermore, the concept of children's participation is closely connected to dialogue, emphasizing that meaningful participation involves active, reciprocal communication. For instance, The UN Committee on the Rights of the Child (2009) emphasizes participation as an “ongoing processes, which include information-sharing and dialogue between children and adults based on mutual respect, and in which children can learn how their views and those of adults are taken into account and shape the outcome of such processes” (p. 5). While Hart's (1992) ladder of participation- a model used to evaluate the degree of children's involvement in decision-making processes- does not explicitly focus on dialogue, the higher rungs on the ladder imply dialogic engagement. At these levels, children

and adults share decision-making power, requiring open dialogue to ensure that children's voices are heard and respected. Van Bijleveld et al. (2014) add to this discussion by defining participation "as a situational and iterative process in which all relevant actors enter into mutual dialogue" (p. 254).

Although, participation in decision-making is important for making political systems more responsive to children's needs and demands (Wall, 2012), another aspect of children's participation has been pointed out by Percy-Smith (2006) stressing that "many issues and decisions that affect young people arise outside of public decision-making arenas in everyday social interactions in the home, school and neighbourhood" (p. 154). So, he advocates for valuing children's everyday acts of participation which are meaningful but frequently overlooked and reimagining children's participation as a broader range of social processes embedded in daily environments and interactions. That is because, participation understood as a politically oriented activity (e.g. student councils and local youth councils) is not enough to strengthen children's sense of inclusion and belonging (Horgan et al., 2017). For children to feel truly valued, there must be recognition in their daily lives of the contributions they already make to society and of their ongoing efforts to build mutually respectful relationships with adults and peers (Leonard, 2016).

Thus, this thesis adopts a broad perspective on participation (as discussed above), acknowledging children's everyday experiences in ECEC settings and investigating how interactions with teachers and peers can support or hinder their participation in activities with digital technologies. Additionally, it addresses critiques that children's participation often overemphasizes discursive forms, as the concept of "voice" is central in this field (Wyness, 2013) even though children communicate in countless ways, and it is crucial for adults to be attentive to all forms of expression, not just spoken language (Clark & Moss, 2011). To counter this, the thesis focuses on children's semiotic repertoires, which include not only language but also other forms of communication—essential for children who are either not yet speaking or are in the process of learning the majority language. By exploring how ECEC teachers can be responsive to these diverse semiotic repertoires, the study aims to broaden the understanding of participation in multilingual ECEC contexts.

Approach to Language

This thesis places a central focus on semiotic repertoires as it explores how are ECEC teachers responsive to bi-/multilingual children's semiotic repertoires. As

mentioned before semiotic repertoires refer to the full range of semiotic resources individuals draw upon when communicating (e.g. language, gestures, signs, gaze, facial expressions, images) (Kuster et al., 2017). Hence, it is relevant to describe the adopted approach to language.

A dialogical perspective to language is adopted that understands language as inherently interactive, relational, and responsive, emphasizing the importance of context and the social interaction between individuals in meaning-making (Bakhtin, 1981, 1986; Linell, 2009). Bakhtin (1986) argues that all utterances are fundamentally dialogic: each word and phrase is shaped by prior interactions and anticipates future responses, creating a continuous, open-ended dialogue that connects past, present, and future acts of communication. This perspective challenges views of language as a static, individual cognitive process, instead framing it as an ongoing, social process where meaning is co-constructed by interlocutors. Bakhtin's concept of heteroglossia, referring to the diversity of voices, perspectives, and ways of understanding the world that exist within language has provided the foundation for the work of García and her colleagues on translanguaging.

Linell builds on Bakhtin's work and argues that language, thought, and identity are constructed through dialogical interactions (Linell, 2009). Linell's work emphasizes that dialogue is not merely a form of interaction but the foundational framework within which meaning, and knowledge are produced. He critiques monological views of language, which treat communication as the transmission of information, advocating instead for an understanding of language as fundamentally dialogic. He suggests the term *linguaging* assigning primacy to the active and dynamic processes involved in communication and thought, rather than viewing language merely as an abstract system or mental construct that people simply "use" (Linell, 2009). Connecting back to the term of semiotic repertoires that refers to the full range of semiotic resources individuals draw upon when communicating, Linell (2009) has emphasized that "linguaging is *multi-modal* and has links to non-/pre-linguistic processes" (p. 284, italics in original).

Furthermore, it should be clarified that this thesis acknowledges language as both a verb (*linguaging*), and a noun rejecting a binary either-or position. On the one hand, *linguaging* denotes the dynamic and relational process where individuals co-construct meaning in response to both the socio-cultural context and each other's contributions. On the other hand, understanding language as a noun, recognizes languages as socially constructed legitimate entities with standard rules and structures that are "experientially and socially real for students, teachers,

policymakers, curriculum designers, politicians and most researchers” (Cummins, 2021, p.17, italics in original). This non-binary perspective is highlighted because, even though the studies in this thesis investigate teacher-children’s interactions (languageing/the process) when analyzing the digital storytelling activities, it rejects the claim that “discrete languages don’t exist” (Makoni & Pennycook, 2007, p. 2).

Overall, this dialogical perspective on language is essential and relevant for this thesis because it enables an in-depth exploration of how participants interact and co-construct meaning (and the digital stories) during the digital storytelling activities, utilizing various communicative resources. This exploration will help address the overarching research question: how can ECEC teachers be responsive to bi-/multilingual children’s semiotic repertoires and support their participation in these activities?

Translanguaging, Semiotic Repertoires, and PRECEC

As discussed in Chapter 2, this thesis adopts translanguaging as a theoretical lens that provides a nuanced understanding of bi-/multilingualism, language, and especially the dynamic use of multiple resources by bi-/multilinguals to communicate without adhering strictly to the boundaries of named languages. Since, the concept was extensively examined in Chapter 2, this section of the theoretical framework elaborates on the synergy between translanguaging and the concept of semiotic repertoires, while also on the core theory, PRECEC, and translanguaging pedagogy as articulated by García and her colleagues.

Translanguaging is fundamentally a multimodal phenomenon and according to García and Li (2014) it includes “all meaning-making modes” (p. 29). However, Kusters et al. (2017) point out a disconnect between research focused on gestures, sign language, and multimodality, and studies on linguistic diversity or multilingualism. They stress that even though scholars like García and Li (2014) have acknowledged that translanguaging inherently involves multiple modes of communication, they have not explored this idea in depth. Additionally, they argue that in most multimodal research (such as Conversation Analysis, Ethnomethodology, and Multimodal Discourse Analysis) and in studies on sign language, researchers tend to examine situations where individuals use a single named spoken language—whether spoken directly or conveyed through mouthings—as part of their actions. While these studies address multimodal communication, they often overlook multilingual aspects. Conversely,

translanguaging studies have primarily focused on multilingual interactions without giving sufficient attention to multimodality, simultaneity, or the hierarchical interplay of different communicative resources.

Thus, Kusters et al. (2017) advocate for the use of the concept “semiotic repertoire” that refers to linguistic and non-linguistic modes of communication challenging the idea that languages are separate, bounded systems—a view fundamental to translanguaging theory. It suggests that communicative repertoires extend beyond verbal language alone, encompassing embodied, multimodal resources. Thus, this concept encourages a holistic approach by acknowledging inequalities and power dynamics by examining the hierarchies among different communicative resources and recognizing the disparities in access to these resources.

Moving further, PRECEC theory and translanguaging pedagogy share common ground since both assign primacy to responsivity, children’s agency, and social justice. In translanguaging pedagogy, responsivity is apparent not only by recognizing and accepting children’s full range of semiotic repertoires but also through translanguaging design (García et al., 2017). Teachers intentionally shape the physical space and plan their teaching to support and promote translanguaging practices, creating an environment that enhances students’ learning. Similarly, in PRECEC, preschool teachers demonstrate responsivity by shifting between thinking and acting *as if* and *as is* to facilitate children’s learning and development in play contexts.

Children’s agency is also central in both frameworks. Translanguaging pedagogy foregrounds agency by focusing on bi-/multilingual children’s diverse communicative practices, rather than on rigid language boundaries (García et al., 2017). Likewise, in PRECEC, where teaching is conceptualized as a mutually developed activity, children are seen as the co-creators with the ability to shape and/or alter the direction of this activity (Pramling et al., 2019). Also, children express their agency as they engage in and co-construct play activities, both through giving contributions in the form of imagining (*as if*) and through referring to conventional knowledge (*as is*).

Regarding the aspect of social justice, translanguaging pedagogy challenges traditional, monolingual approaches to education that often marginalize bi-/multilingual students’ linguistic practices. In a similar vein, Kultti (2022) advocates for broadening the concept of responsivity in PRECEC by encompassing the full range of semiotic resources that children use. This expansion aims to widen their experiential foundation and address social

inequities. Also, from PRECEC perspective responsibility represents a commitment to “establishing a socially just institution” (Pramling et al., 2019, p. 180).

However, while these approaches offer a compelling vision for inclusivity and equity, there is an ongoing need to critically examine how well they translate into practice. Challenges may arise in consistently applying these principles across diverse educational settings, especially in systems where monolingual norms are deeply embedded. A sustained commitment to responsive, socially just practices requires not only teacher training but also institutional support, policy changes, and a shift in broader societal attitudes toward language and diversity.

Social and Cultural Sustainability

This section of the theoretical framework examines the concept of social and cultural sustainability, an overarching interest of the research school to which this thesis belongs. The findings of this thesis will be discussed through the lens of social and cultural sustainability, elaborating on ECEC teaching practices that may address aspects of social and cultural sustainability. It is important to note that focusing on social and cultural sustainability does not imply ignoring the holistic approach to sustainability since according to OMEP ESD rating scale (2019) whatever dimension of sustainability one begins with, it is possible to connect to the other dimensions in projects and activities.

The social dimension, alongside ecological and economic aspects, has long been recognized as a core element of sustainable development (WCED, 1987). However, the term social sustainability is a complex and evolving concept, with varying interpretations across disciplines (Eizenberg & Jabareen, 2017). It has been pointed out that its complexity stems from the need to first define the “kind of society... we want to sustain” (Boström, 2012; p. 12).

Boldermoe and Ødegaard (2019) reviewed social sustainability frameworks in ECEC and identified that these frameworks often emphasize social justice, equality, social participation, citizenship, and children’s rights. However, they noted that few studies address diversity, multicultural perspectives, or the experiences of migrant children within early childhood education for sustainability. Grindheim et al. (2019) add to this perspective, viewing social and cultural sustainability in ECEC as the creation of inclusive environments that foster positive interactions, promote a sense of community, and build children’s sense of belonging. They argue that social sustainability in ECEC means creating safe, welcoming surroundings where children feel connected and attached to their local

areas. Bergan et al. (2021) expand on this definition by suggesting that social sustainability encompasses the development and preservation of stable, just societies that prioritize equal rights, citizenship, well-being, health, education, and safety for all community members. Central to this concept are social participation, participatory decision-making, and agency, which support individuals in contributing meaningfully to their communities (Bergan et al., 2021).

While culture is sometimes considered a component of social sustainability, there is ongoing debate about whether culture should be formally included as a fourth dimension of sustainable development (Hawkes, 2001; Sabatini, 2019; Soini & Birkeland, 2014; Soini & Dessein, 2016; Zheng et al., 2021). Its role continues to be understated in both sustainability research and policy. Zheng et al. (2021) identify several reasons for culture's understated role in sustainability. First, because the evidence on culture's influence within sustainability is fragmented, with studies scattered across disciplines, reflecting the broad scope of culture and sustainability. Second, interdisciplinary barriers exist, as cultural analysis typically uses qualitative methods like ethnography, while sustainability science often relies on quantitative approaches, making integration challenging. Third, scientists and policymakers frequently overlook cultural factors due to the complexity and difficulty in enforcing cultural interventions.

Broadly, culture encompasses “the values, beliefs, languages, knowledge, art, and wisdom” through which individuals and communities express their identities and interpret their world (Committee on Culture, 2015, p. 11). It includes tangible aspects, such as physical artifacts created and used by societies, as well as intangible elements like symbols, languages, values, and norms that shape behaviors and influence social cohesion (Zheng et al., 2021). A significant milestone in highlighting culture's importance in sustainability was the adoption of UNESCO's 2005 Convention on the Protection and Promotion of the Diversity of Cultural Expressions. Article 13 of this convention specifically calls for integrating culture into sustainable development policies. Additionally, a recent study by Zheng et al. (2021) highlights that cultural values significantly impact progress toward the 17 Sustainable Development Goals (SDGs). Their evidence shows that culture plays a role in achieving 133 out of the 169 SDG targets (79%), spanning all 17 SDGs and addressing each of the three dimensions of sustainability.

In conclusion, this thesis addresses key aspects of social and cultural sustainability by focusing on multilingual ECEC settings and exploring teaching responsiveness to bi-/multilingual children's semiotic repertoires, agency, and participation. These settings often represent children's first encounters with

diversity, serving as a microcosm of broader society where social cohesion, inclusion, and justice are important for social and cultural sustainability. Through interactions with peers and adults from diverse cultural, linguistic, and social backgrounds, children begin to shape their understanding and acceptance of diversity, while also developing their participation and agency. However, fostering genuine social and cultural sustainability in ECEC requires ongoing attention to institutional biases, resource allocation, and teacher training to ensure that inclusivity and responsiveness are more than aspirational goals, but practical realities in ECEC.

Chapter 4 Methodology

Research methodology can be understood as the theoretical framework that underpins the process of making sound scientific decisions (Kaufman, 1944). This chapter will justify the choice of the research methodology based on how well it corresponds to the purpose and questions of the research. It will explain the strategic decision-making regarding methods during the research process to explore the intersection of two fields. More specifically, the methods and their limitations will be described, researcher's positionality will be clarified, participants will be introduced, and a detailed elaboration on the process of data generation will be provided. However, every methodology, despite its ambition to be systematic, inevitably encounters challenges, which will be addressed in this chapter.

The aims of this research are threefold: (a) to further develop the PRECEC theory (Pramling et al., 2019), (b) to generate new pedagogical knowledge for teaching in ECEC, specifically focused on responsivity and support for bi-/multilingual children's semiotic repertoires and their participation in activities where digital technologies are used, and (c) to contribute with new empirically grounded knowledge about ECEC concerning multilingualism and digital technologies. To support these aims, this thesis draws on the literature and principles of design-based research (DBR) (Brown, 1992; Collins, 1992). An approach that is informed by DBR is particularly suited to this thesis, as it bridges theory development and educational practice, enabling both to evolve through iterative cycles. Another reason is that this thesis aims to investigate teaching practices, so it is essential that the teacher, rather than the researcher, implements the digital storytelling activities. By analyzing ECEC teachers' practices, it is possible to explore how they are responsive to bi-/multilingual children's semiotic repertoires and support their participation during activities with digital technologies. This choice aligns with a DBR approach, which allows researchers to collaborate with practitioners and observe their authentic interactions within a designed framework, rather than with action research, where practitioners themselves are often the primary researchers leading the intervention and the research aims to answer their own questions (Somekh & Zeichner, 2009). This

alignment with DBR is critical given that PRECEC, the main theoretical framework guiding this thesis, was itself conceptualized through a similar process that involved empirical work in Swedish preschools, in close collaboration with preschool teachers (Pramling et al., 2019, Chapter 4).

It should be noted, however, that this thesis does not adhere strictly to a DBR approach. Rather, it adapts key aspects of DBR (such as the theoretical orientation, interventionist nature, iterative structure, and collaborative approach) to suit its specific aims and context. Also, McKenney and Reeves' (2018) work on educational design research, which emphasizes design research in the field of education and theoretical development, informs this thesis' approach. Their generic model for conducting educational design research consists of an initial phase that involves analysis and exploration, a design and construction phase, and an evaluation and reflection phase. All these phases interact and influence each other since the process is cyclical and flexible. The following sections detail how DBR characteristics (theoretical orientation, interventionist nature, iterative structure, and collaborative approach) were adapted and applied within this thesis. Additionally, the sections elaborate on the three phases of McKenney and Reeves' (2018) generic model as incorporated in this thesis, describing the participants and the specific preschool context in which the research took place.

Theoretical Orientation

This thesis is grounded in a solid theoretical foundation (PRECEC theory) which shapes both the design decisions and the approach to analyzing teaching processes (Prediger, 2019). More precisely, PRECEC provides a lens for making sense of the teaching process in ECEC and offers conceptual resources for analyzing the empirical data. It also delineates the nature of the designed activities- that is play-formatted (van Oers, 2014) digital storytelling activities- where both the teacher and children co-construct the stories. Furthermore, an attempt is made to advance PRECEC, based on the findings of this thesis, by addressing what responsiveness and support to bi-/multilingual children's semiotic repertoires and participation during activities with digital technologies implies. This theory-driven orientation aligns with DBR, which emphasizes that interventions are based on existing theory and one of the twin goals of DBR is the refinement of the theory through investigating its usefulness in analyzing empirical data or even the generation of a new theory (Barab & Squire, 2004).

Participants and Research Context

This section introduces the participants and research context, setting the stage for the three core phases of the study. Purposive sampling was applied to select preschools based on two primary criteria that align with the thesis' objectives. Specifically, the criteria focused on the diverse linguistic and cultural settings of the preschools and their expressed willingness to participate, which is essential for ensuring an open, collaborative environment conducive to gathering empirical data.

International preschools were approached for this thesis due to their population of teachers and children from varied linguistic and cultural backgrounds, offering a setting in which multilingualism is central to daily interactions. This choice provides a suitable context to investigate how teaching in ECEC can be responsive to bi-/multilingual children's semiotic repertoires. Additionally, my prior experience as a substitute teacher in such international preschools allowed for a deeper understanding of the dynamics at play in these settings, including the challenges and opportunities they present. It should be clarified that the researcher had not previously worked in those preschools. These international preschools are for children whose families have temporarily relocated to the city for work. However, it is common that Swedish families also choose this type of preschool for their children. They follow the Swedish national curriculum for preschool. There are limitations to using international preschools as a context for this thesis since these preschools may reflect a less typical ECEC environment than municipality preschools in Sweden, potentially limiting the generalizability of findings to more homogeneous settings.

Two international preschools (Sunrise Center and Kidspace, pseudonyms) located in a larger Swedish city, participated in the research. Although additional international preschools were contacted, these were the ones that expressed interest and agreed to participate in the research. It is also worth noting that access to preschools was more challenging due to restrictions in preschool settings during the post-Covid period. One group from Sunrise Center and two groups (Group 1 and Group 2) from Kidspace participated in the research. Participants included seven children from Sunrise Center and fifteen children from Kidspace, a total of twenty-two children aged 4-5 from diverse socio-economic background (see Table 2). Only children with parental consent were included in the study. Additionally, the research involved six multilingual preschool teachers with a bachelor's degree

in ECEC, one multilingual assistant teacher with High Scope approach training, and two heads from both preschools (see information about teacher, Table 1).

Table 1 Information about teachers

| Preschool teachers (pseudonyms) | Languages | Teaching experience |
|--|--|--|
| Albert/Sunrise Centre | German/English/learning Swedish | 5-years (in Germany) |
| Flora (assistant)/Sunrise Centre | French/English/basic Swedish and Spanish | 10-years (in Sweden) |
| Lena/Kidspace (Group 1) | Polish/English/Spanish/Russian/learning Swedish | 4,5-years (in Ireland and Sweden) |
| Bella/Kidspace (Group 1) | Greek/English/basic German/learning Swedish | 1,5-years (in Greece and Poland) |
| Laura/Kidspace (Group 1) | Greek/English/Swedish/learning Spanish | 5-years (in Greece and Sweden) |
| Jennifer/Kidspace (Group 2) | Greek/English/Swedish/basic German | 3-years (in Sweden) |
| Maria/Kidspace (Group 2) | Greek/English/Swedish | 8-years (in Greece, Lithuania, and Sweden) |

Table 2 Information about children

| Names (pseudonyms) | Languages |
|---------------------------|--|
| Svea | German/English/learning Swedish |
| Arthur | English/learning Swedish |
| Liam | Hungarian/learning English and Swedish |
| Anton | Hungarian/learning English and Swedish |
| Alex | German/English/learning Swedish |
| Mateo | Swedish/English |
| Jack | Swedish/English |
| Max | English/French/learning Swedish |
| Michael | Swedish/English |
| Patrick | Swedish/English |
| Aaron | Chinese/learning English and Swedish |
| Naomi | Korean/learning English and Swedish |
| Ellen | Spanish/Swedish/English |
| Steven | English/learning Swedish |
| Lukas | Portuguese/English/learning Swedish |
| Ben | Swedish/English |
| Robert | Portuguese/Swedish/English |
| Tobias | Hindi/English/learning Swedish |
| Camila | Swedish/English |
| Anna | Arabic/English/learning Swedish |
| Martin | English/Swedish |

Sunrise Center is an English-speaking preschool, which was mirrored in the physical environment, where most of the signs were in English (with some book and signs exceptions, Figures 1 and 2). It should be highlighted that the group from this preschool that took part in the research followed an outdoor program spending the majority of their time in the forest and had limited use of digital technologies (such as tablets). Although the group also had space at preschool for inside and special activities. It was observed and confirmed during the interviews with the teachers that their group spoke primarily in English. However, both the preschool and the assistant teacher during the interviews expressed that they viewed multilingualism as an asset. The preschool's pedagogical approach vaguely states that teachers support each child's language and identity, and language is viewed as a unifying tool that goes beyond national identity, connecting individuals globally. Science and technology are also emphasized in their philosophy stating that teachers encourage children to understand how things are made and how they function by engaging them in activities that promote creativity, problem-solving, and innovation. During the interviews, both teachers expressed critical perspectives on the use of digital technologies, focusing on how and for how long these devices were utilized. Phones were mainly used to document activities by

capturing photos, which were then shared with parents via the preschool's platform. Additionally, phones were employed for yoga and mindfulness exercises, as well as for teachers to look up information on topics they were unfamiliar with.



Figure 1 Library room in Sunrise Centre

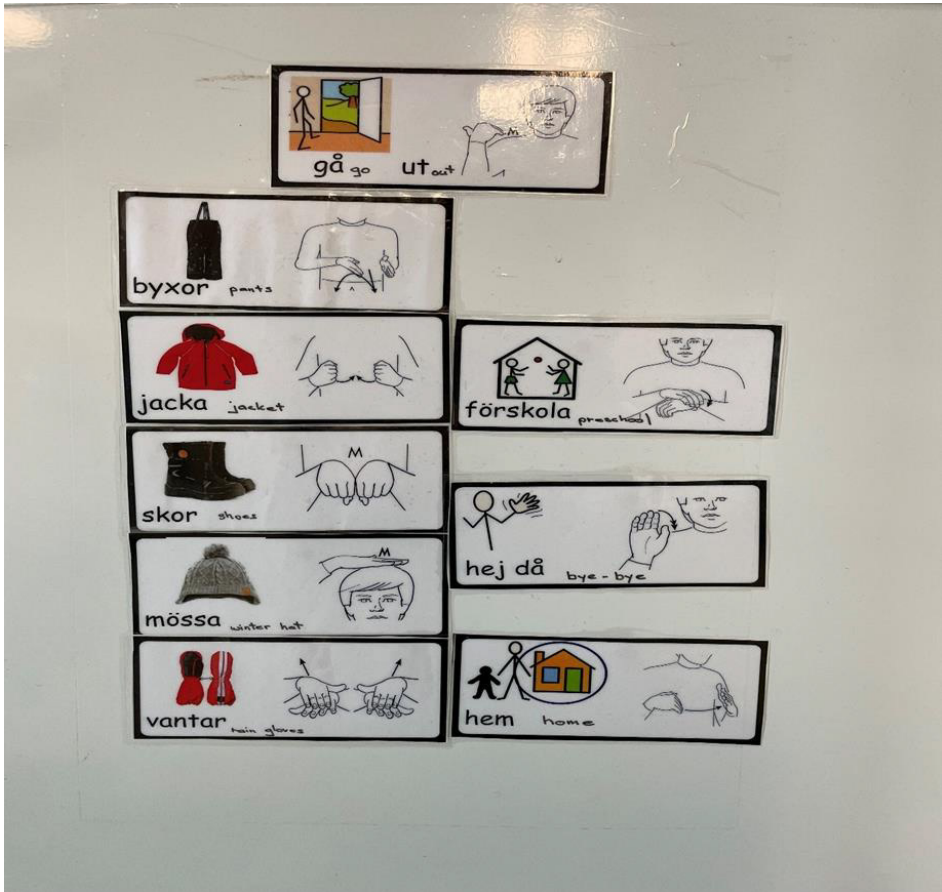


Figure 2 Signs illustrating translanguaging in Sunrise Centre

Kidspace (a bilingual preschool English-Swedish) along with the Swedish national preschool curriculum adopts a HighScope approach. It was previously an English-only preschool, but due to changes in school law, they were required to teach and speak Swedish too. They have a well-developed pedagogical approach emphasizing statements but also support strategies regarding children's multilingualism. The physical environment of this preschool (signs and books) reflected the preschool's dedication to multilingualism and children's linguistic diversity (Figures 3 and 4). It was observed that teachers were consistent with the preschool's primary focus, and they were using English, Swedish, and incorporating children's home languages in playful ways during daily activities. During the interviews, the teachers expressed a critical stance on the use of digital technologies, connecting the use of

these devices with pedagogical goals such as communication, math, or science activities. They disapproved of passive video viewing, noting that children frequently used tablets at home, as reported by the children themselves. Another concern raised was the lack of funding to access diverse applications or devices, coupled with insufficient time and training for teachers to become familiar with digital technologies. In practice, the teachers primarily used tablets for documentation, playing music, and displaying images. Some of the teachers also used a robot for coding. In Group 1, children’s tablet use was supervised by teachers, while in Group 2, children could scan QR codes in the library corner to watch stories in various languages.



Figure 3 Poster illustrating the languages that are presented in Kidspace

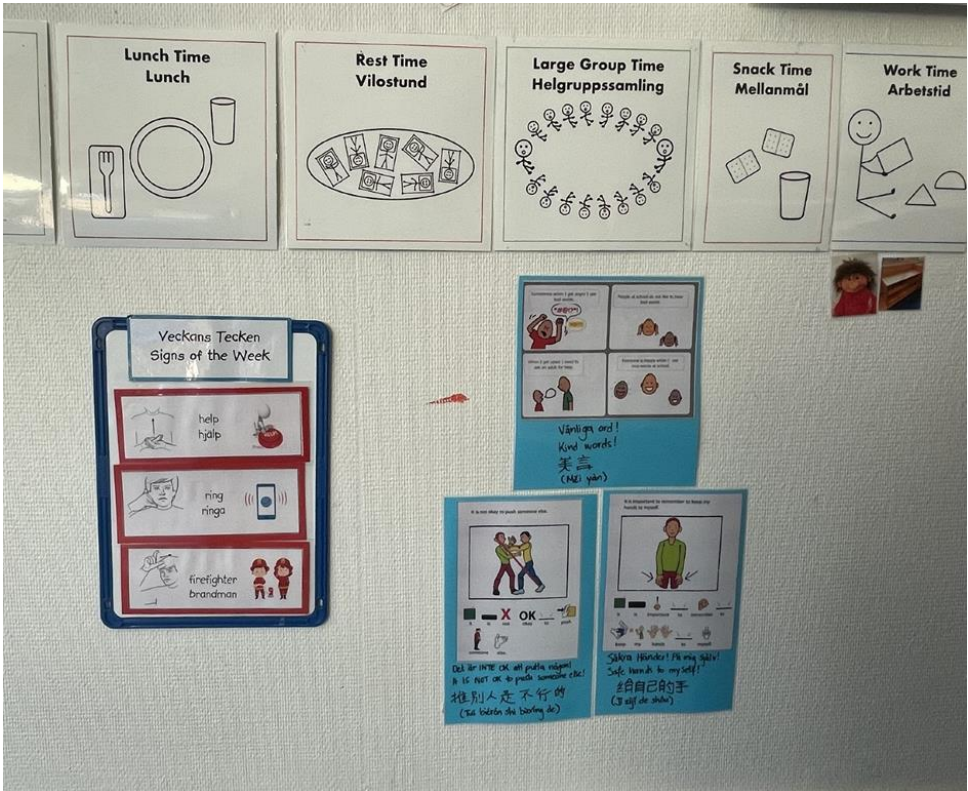


Figure 4 Signs in the Kidspace’s classroom

The application *Book Creator* (Red Jumper Studio, 2015) was used for the composition of children’s digital stories. None of the teachers or children had used this application before. The *Book Creator* has been previously used in different studies (Highfield et al., 2018; Rowe & Miller, 2016; Yelland, 2018). The application was chosen due to its open-ended nature and the available feature of having multiple sound recordings on one page, so that children’s home languages, English and/or Swedish, could be presented, and thus encourage a connection between home and preschool in this regard. Equally important, is the fact that using an open-ended application implies viewing children as active creators, designers, makers, and therefore highlights their agency; Kucirkova (2018, p. 90) argues “positioning children as story-makers is a powerful mechanism to honor children’s diverse experiences and those of their families and friends”.

Interventionist Nature

This thesis, through designing an intervention in the form of digital storytelling activities aims to investigate how teaching in ECEC can be responsive to bi-/multilingual children's semiotic repertoires and support their participation in activities with digital technologies. As discussed in the literature review chapter, few studies explore the intersection of those two well-researched fields, multilingualism and the use of digital technologies in ECEC settings. The following section describes the three phases of this research informed by the work of McKenney and Reeves (2018): the initial phase, which explored and analyzed the educational challenges address in this thesis; the design and construction phase of the digital storytelling activities; and the evaluation and reflection phase, which involved assessing the digital storytelling activities and refining their design.

The initial phase involved exploring and analyzing the challenges of multilingualism and the use of digital technologies in the naturalistic context of preschool. In this phase, the review of the literature played a key role to gain a broader scientific understanding and theoretical insights into these issues. For example, The Swedish School Inspectorate (2017) points out that while preschool teachers tend to support the development of Swedish language, they rarely encourage multilingual children to utilize their first language (L1) in daily activities. Miller et al. (2017) argue for more research that will explore social interactions between teacher and children (capturing moment-by-moment interactions) while they use technologies in the context of ECEC.

In addition to the literature review, a field-based investigation at the two international preschools was carried out “to portray the settings, its actors, mechanisms, and other relevant factors” (McKenney & Reeves, 2018, p. 99). During the field-based investigation, which lasted one week in each group, I engaged in participant observation in the preschool environments with an observation checklist that I developed (Table 2). The purpose was to document daily practices and interactions related to multilingualism and digital technology. Furthermore, I conducted interviews with the teachers and the principals to understand their background, their beliefs and their teaching practices regarding multilingualism and digital technologies (Table 3). As a result, I acquired a thorough understanding of the two preschools' complex settings and problematized the potential boundaries of their context (like teacher workload). Data from these interviews are integrated into this chapter to provide a detailed description of the context and participants.

This initial phase differs from a DBR, where the starting point typically involves identifying an educational problem or challenge through collaboration between researcher(s) and practitioners (Anderson & Shattuck, 2012). In this research, however, the educational challenges were identified through a literature review rather than direct consultation with teachers. While the identification of the educational challenges was not co-constructed with teachers, the preschools that agreed to participate demonstrated an interest in and alignment with these identified challenges, allowing for a meaningful exploration of the research questions in ECEC settings.

Table 2 Observation checklist

| |
|--|
| What digital technologies and how many are available in the classroom for children? |
| What digital technologies do children choose to play with? |
| How do children use digital technologies? Individually or with peers? |
| Are there any books in different languages available for children? If yes, do they use them? |
| Are there any signs/posters in the classroom written in different languages? |
| Which are the languages used during activities? |
| Which are the languages that children choose to communicate with their peers and the teachers? |
| Is code switching common practice in those classrooms? |

Table 3 Interview Questions

| |
|---|
| What is your education? |
| What is your previous working experience? |
| Which languages can you speak? And, which of them do you use during teaching? |
| Which languages you and the children are using during the day? Is translanguaging encouraged or disapproved in the preschool? |
| What are your thoughts and/or experiences about multilingualism and the use of different languages during teaching? |
| How you and the children use digital technologies? |
| Are you supportive or sceptical about the use of digital technologies? Why? |

The design and construction phase encompassed drafting and prototyping to create solutions and was guided by theory (PRECEC) and previous empirical work identified in the literature (Rowe et al., 2014; Rowe & Miller, 2016). In this phase, there were some differences between how things developed in the two preschools. Both preschools received a video from me in which I presented the research to inform the children’s parents and obtain informed consent for their children’s

participation. That video was posted in preschools' platforms where the parents had access to it.

In Sunrise Center, due to the preschool's scheduling, I was unable to meet with the teachers to discuss the two Power Point presentations (one on multilingualism/translanguaging and one on PRECEC) as originally intended. Instead, these presentations were sent via e-mail to the teachers. During my visits in the preschool, I discussed the basic idea of the digital storytelling activities with the preschool teachers. The basic idea was for the teacher to collaborate with two children at a time to create e-books using the application *Book Creator*. Children would be encouraged to record their story using the languages they speak. I demonstrated the application and its functions to the teachers and children so that they could become familiar with it. I also showed the children the camera that would be used to film the activity to explain its purpose in the room. The framing of the digital storytelling activities (what kind of stories would be produced) was decided in advance by all children together. So, most of them wanted to create a story about superheroes. Although this framing was initially chosen, when the activities were implemented, the children told various stories that were not about superheroes. The teachers were responsive to children's story scenarios without insisting on the superhero theme. They were also the ones who chose how children would be partnered for the digital storytelling activities. Each child had a tablet to create his/her own story. I was present during the first activity but chose not to remain in the room for the subsequent activities in order not to influence the interaction between the teacher and the children. Throughout the digital storytelling activities conducted in this research, it was my responsibility to place the camera on a tripod, positioning it in front of the table where participants were seated, and starting the recording.

In Kidspace, I had the opportunity to participate in a study day where I presented the two Power Points and discussed the content with the teachers. There were some differences in the framing and setup of the digital storytelling activities in Kidspace's (Group 1) compared to Sunrise Center which was a result of the reflection phase that took part after completing the research in Sunrise Center (this will be described next). Firstly, the framing of the digital storytelling activities changed. During circle time, the preschool teacher brought some finger puppets and introduced a story (*Room on the Broom*) that the children already knew and asked them to recreate it because the book had (allegedly) been lost. Secondly, throughout the digital storytelling activities children shared only one tablet to see if the interaction would be transformed into a more dynamic one. Another notable

difference that emerged was my interaction with children while using the application *Book Creator*. This interaction was initiated after the teacher's request, as she wanted me to provide a demonstration of interaction using the application. This allowed her to observe and prepare for the upcoming digital storytelling activities.

In Kidspace (Group 2), the digital storytelling activities were framed again around a story that children knew. This time, the teacher read the book (*The Very Busy Spider*) only to the children participating in the research and asked them to recreate the story in the application for their other classmates. The initial plan for this group involved the participation of both teachers, Jennifer, and Maria, from the class. However, due to Jennifer's end of employment at the preschool and the subsequent introduction of a new teacher, only Maria participated in the activities.

The evaluation and reflection phase involved an assessment of the digital storytelling activities after their implementation. The initial plan intended to engage the preschool teachers in this phase by participating in reflective practices where the digital storytelling activities would be viewed and discussed with me, after which design modifications could be made to improve the teaching approach and/or participants' interaction. However, the everyday reality of the preschools' schedule did not allow this to happen. Teachers did not have available time to step out from their group and engage in further discussions about the activities. Since the goal of this research was to build a collaborative partnership with teachers, I instead asked the teachers (from Sunrise Center) how they felt about the research process. They admitted that the transitions were quite stressful when one teacher had to leave to participate in the activity (with two children) and the other stayed with the group.

Wang and Hannafin (2005, p. 6) clarify that DBR is "a systematic but flexible methodology" and according to McKenney and Brand-Gruwel (2018) empathy and flexibility are two important competencies for a design researcher. So, as an alternative to teachers' reflective practices, to be an empathetic and flexible design researcher, I included my supervisors in the evaluation and reflection phase by conducting data sessions in the end of every iteration. During these sessions we watched the digital storytelling activities and reflected on the aims and design of the research. After the first iteration, we decided that the children should use only one tablet and that the framing of the digital storytelling activities should be changed for the next preschool, to generate more dynamic data. More precisely, when children were given two tablets (in the first iteration) we observed that they did not interact and collaborate with each other but mainly engaged with the tablet

itself. When the activities were framed broadly (like a superheroes story), children engaged in less narrative and were more descriptive when discussing their drawings, that is, engaged in less dynamic languaging. There was also little interaction between the teacher and the children. Thus, we decided to introduce a story that the children already knew for them to recreate it using the application *Book Creator* and evaluate if this redesign could mediate the participants' interaction in a different way, encouraging more dynamic interaction between participants.

Lastly, part of this evaluation and reflection phase were the final interviews with the teachers, after the activities were completed (see interview questions in Table 3). During these interviews the teachers had the time to discussed and reviewed their experience participating in this project and the challenges they faced. The information provided by them was valuable feedback for how the research was designed and structured in the following preschool. These data were not utilized because the primary focus of this thesis was to examine participants' interactions and the development of digital storytelling activities.

Table 3 Interview questions

| |
|---|
| What was challenging for you during this research? Why? |
| What did you enjoy working with the most during the research? |
| What will you try to keep from this research? |
| Was something that happened unexpected for you? |

Iterative Structure

According to Anderson and Shattuck (2012) “design-based interventions are rarely if ever designed and implemented perfectly; thus, there is always room for improvements in the design and subsequent evaluation” (p.17). In a similar vein, this research had three iterations. More precisely, the design and the implementations of the digital storytelling activities in one group is thought of as one cycle/iteration, lasting two weeks (one week of observations and one week of activities implementation) and ending with the evaluation and reflection phase during data session with my supervisors. The iterative process is apparent since the research design was repeated but slightly modified because of decisions made during the evaluation and reflection phase, as well as the preschool's schedule and teachers' agency. The impact of teachers' agency on the design and structure of the research will be clarified in the next part where collaboration is discussed. Table

4 displays the three iterations: **iteration one** took place at Sunrise Center and involve four implementations of the digital storytelling activities, **iteration two** took place at Kidspace (Group 1) and involve six implementations of the digital storytelling activities, **iteration three** took place at Kidspace (Group 2) and involve three implementations of the digital storytelling activities. The design of the research is explained epigrammatically in Table 3 and the modifications that occurred in every phase are shown by bold writing.

Table 4 Iterations of the research

| Iteration 1 | Iteration 2 | Iteration 3 |
|--|--|--|
| Sunrise Center (1 preschool teacher, 1 assistant teacher, and 7 children) | Kidspace, Group 1 (2 preschool teachers, 1 assistant teacher, and 10 children) | Kidspace, Group 2 (2 preschool teachers and 5 children) |
| A video where I explained my research was upload it on the preschool's platform to inform parents and an informed consent paper was distributed to them by the teachers. | A video where I explained my research was upload it on the preschool's platform to inform parents and an informed consent paper was distributed to them by the teachers. | A video where I explained my research was upload it on the preschool's platform to inform parents and an informed consent paper was distributed to them by the teachers. |
| Interviews with the principal of the preschool and the teachers. | Interviews with the principal of the preschool and the teachers. | Interviews with the principal of the preschool and the teachers. |
| Teachers received two Power Points about PRECEC and multilingualism/translanguaging. | I presented the two Power Points during the preschool's study day, followed by a discussion with the teachers regarding teaching in a multilingual context. | I presented the two Power Points during the preschool's study day, followed by a discussion with the teachers regarding teaching in a multilingual context. |
| One week of classroom observations. | One week of classroom observations. | One week of classroom observations (one of the two teachers was no longer working at the preschool, so the group had a new teacher). |
| I introduced the application (its settings) and the idea for the digital storytelling activities to the teachers. | I introduced the application (its settings) and the idea for the digital storytelling activities to the teachers. | I introduced the application (its settings) and the idea for the digital storytelling activities to the teachers. |

| | | |
|---|---|---|
| <p>Before the activity, I presented the application to the children and most of them had the opportunity to play with it, then I introduced the camera to them so they would be familiar with it.</p> | <p>The teacher during free play sat close to a group of children and started drawing at the application to see whether they would be interested in it.</p> | <p>Children did not play with the application before the activities.</p> |
| <p><u>Framing the activity:</u> Children together with me decided to create a superhero story.</p> | <p>Since children did not show interest in the application, the teacher asked me to interact with some children while using the application so she could have an example for the activity later.</p> | <p>Before the activity, I introduced the camera to the children so they would be familiar with it.</p> |
| <p>Four implementations of the activity, involving two children, two tablets and one teacher (one child did the activity alone with the teacher).</p> | <p>Before the activity, I introduced the camera to the children so they would be familiar with it.</p> | <p><u>Framing the activity:</u> The teacher read the book ‘<i>The Very Busy Spider</i>’ to the five children that participated in the study and invite them to recreate the story using the application, so that they could show it to their classmates.</p> |
| <p>I was present in the room only in the first implementation of the activity.</p> | <p><u>Framing the activity:</u> The teacher brought some finger puppets during circle time; to remind the children of the story <i>Room on the Broom</i> so they could recreate it (using the application) because the book had (allegedly) been lost.</p> | <p>Three implementations of the activity, involving two children, one tablet and one teacher (one child did the activity alone with the teacher).</p> |
| <p>Final interviews with the two teachers.</p> | <p>Six implementations of the activity, involving two children, one tablet and one teacher (one child did the activity alone with the teacher).</p> | <p>I was not present in the room.</p> |

| | | |
|--------------------------------|--|--|
| Data session with supervisors. | I was not present in the room. | Final interview only with one of the two teachers who carried out the activities. |
| | Final interviews only with the two teachers who carried out the activities. | Data session with supervisors. |
| | Data session with supervisors. | |

Collaborative Approach

A key component of this research is the collaboration between the researcher and the preschool teachers. While teachers were not involved in identifying the educational challenges, they were encouraged to take initiatives for the implementation of the digital storytelling activities. The initial design, developed by myself and my supervisors, outlined a playful framework for these activities in which a teacher and pair of children would collaborate to create digital stories. The playfulness was introduced by framing the activity around a narrative scenario—for example, imagining that a familiar book had been lost and needed to be re-created. However, to encourage teacher agency, the design intentionally left space for teachers to make key decisions, such as selecting the story to recreate with the children, choosing how to introduce the story to them, deciding on how to partner children, and how they would interact with them during the activities.

Although the setup to open up was designed to encourage teachers' initiatives, some teachers expressed a preference for more specific instructions on what to do in the activity. One possible interpretation could be that decisions regarding story selection and activity introduction require time and planning, which can be challenging within teachers' busy schedules. Predefined activities, where the teacher's role is primarily execution, may be more timesaving and appealing to teachers. Teachers' involvement in DBR has been criticized by scholars arguing that teachers are often positioned as passive objects (Lorentzen, 2017, cited by Iversen, & Jonsdottir, 2018) or they do not have an active involvement in the study (Engeström, 2011; Kolmos, 2015).

Collaboration was approached based on Cole and Knowles (1993) teacher development partnership:

True collaboration is more likely to result when the aim is not for equal involvement in all aspects of the research; but, rather, for negotiated and mutually agreed upon involvement where strengths and available time commitments to process are honored (p. 486).

Specifically, my goal was to build a collaborative partnership between me and the preschool teachers, by exploring and valuing teachers' current knowledge (through interviews) and practices (through observations) concerning multilingualism and digital technologies. By considering and respecting teachers' available time for participating in the study process. After a discussion with the preschool teachers (Sunrise Center) where they expressed that the implementations of the activities were quite stressful, I offered my assistance to stay with the group since I was familiar working in such a context. Forming a context of mutual support with the teachers included following their schedule and deciding based on that when the activities could take place (which day and how many activities in a day). It also included responding to teachers' need, such as demonstrating an example of interaction with the children and the application *Book Creator*.

All in all, this thesis does not demonstrate equal teacher and researcher participation in all facets of the research process. It is a concrete illustration of a collaborative partnership where participation was negotiated.

Data and Analysis

This research consists of four different types of data: video recordings capturing the activities (13 videos lasting approximately 25 minutes), screen recordings documenting children's drawings, audio recordings featuring interviews with teachers and principals, and supplementary data in the form of field notes and photographs. The primary emphasis in the three studies is on leveraging data from video recordings and screen recordings to study teacher-children's interactions. Notably, some photographs depicting the preschools' environment are presented in section *participants and research context*. Data from audio recordings and field notes that have been collected are utilized to provide detailed descriptions of the research context and its participants.

Interaction Analysis (IA) was utilized for the analysis of the video recordings because it focuses on moment-by-moment interactions between individuals and material elements emphasizing the situated nature of human interaction, non-

verbal communication, technology-mediation, and the “naturally occurring, everyday interactions among members of communities of practice” (Jordan & Henderson, 1995, p. 41). These principals are important for this thesis since the video recordings capture naturally occurring interactions between teacher-children and peers, during activities involving digital technologies, rather than interactions between researcher and children. This thesis also seeks to explore how ECEC teachers can be responsive not only to bi-/multilingual children’s languages but to their entire semiotic repertoires, encompassing various means of communication. Furthermore, the theoretical assumptions of IA align with the thesis’s sociocultural framework since it understands knowledge and praxis as situated in social interactions “among members of a particular community engaged with the material world” rather than situated within the minds of individual participants (Jordan & Henderson, 1995, p. 41). Therefore, the interactions were analyzed sequentially to examine how participants engaged moment-by-moment in the digital storytelling activities and contributed to their development by utilizing different semiotic resources, responding to questions, making sense of each other’s contributions, and collaboratively creating stories.

However, it is well known that converting video data into a text poses challenges (Plowman & Stephen, 2008) including the loss of non-verbal nuances, the difficulty in describing visually complex activities, and the time and effort required for accurate transcriptions. To address these challenges and stay closely connected to the original data, I provided descriptions of the non-verbal actions (e.g., body language, facial expressions, gaze direction) of the participants within parentheses. I created figures to visually represent non-verbal actions and italics were employed to indicate instances where participants used a language other than English. Screenshots from the screen recordings were included to illustrate what children drew in the application and discussed.

Derry et al. (2010) refer to transcriptions as “an iterative process” (p. 15) emphasizing that the act of transcribing is not a one-time, linear activity but rather a dynamic and evolving procedure that involves multiple cycles of refinement and revision. Similarly, the transcriptions in this research underwent systematic review with multiple iterations led by both me and my supervisors as we gained deeper insights into our research questions which guided the analysis of the data. All transcriptions were conducted utilizing literal conventions to facilitate readability and preserve the authenticity of participants’ speech. Additionally, before submitted to research journal for review, all three studies were presented in text

seminars where fellow scholars provided valuable feedback regarding parts of the transcriptions and the analysis requiring clarifications or corrections.

The coding process combined a deductive approach where codes derived from the theoretical framework (e.g. translanguaging, agency, alterity, intersubjectivity, scaffolding and triggering) and an inductive approach where codes emerging from the data. In this section, I will present the coding process employed in each study. It is important to note that every study's research question(s) guided the data analysis meaning that the same dataset was re-analyzed to answer multiple research questions. This iterative process of analyzing facilitated an in-depth exploration of the data, enabling the identification of interesting patterns.

In Article I, which centers on exploring how participants' semiotic repertoires are introduced and responded to, the transcriptions were coded for instances where participants used semiotic resources (that constitute the repertoire). The codes were named language, sign language, gestures, pointing, facial expressions, sounds, gaze direction, onomatopoeia, and drawings. These codes were later grouped as instances of translanguaging showing participants using their semiotic repertoires to participate in the digital storytelling activities. Lastly, teachers' response patterns were identified and categorized into the following codes: acknowledging (reflective), prompting and elaborating (prospective), and clarifying and shifting (coordinative).

In Article II, the focus shifted to understanding the emergence of children's agency during the digital storytelling activities, and how teachers' responses facilitated and prompted negotiations of children's agency. Instances of children's expressions of agency were coded when they initiated actions, expressed preferences/thoughts, and shaped/alterd the development of digital storytelling activities. Instances of intersubjectivity were coded when participants demonstrated mutual understanding through their speech and other actions while instances of alterity were coded when participants changed/alterd the direction of the activity. Then teachers' response patterns to children's agency were identified and categorized into the following themes: asking opinion-seeking questions, being responsive to children's alterity, assisting them navigate the application, supporting and accepting their initiatives, and challenging them with questions encouraging their "what if" thinking.

The Article III centers on teachers' use of triggering and scaffolding questions and children's narrative production. Before elaborating on the coding process of this data analysis it is essential to explain how the term "questions" was understood. Questions were understood from a dialogical perspective as

communicative acts, utterances that have fundamentally responsive and anticipatory qualities (Bakhtin, 1986; Linell, 2009). Participants' both verbal and non-verbal cues (such as gestures, shifts in gaze, and other actions) were acknowledged as response(s) to a question and were seen as indicators that an utterance was recognized as a question. The identification of utterances as questions was not limited to participants' responses because this would have hindered the identification of important and recurring patterns observed in the dataset. More precisely, there were several instances when teachers asked multiple questions and adjusted their approach when a child did not respond. Therefore, utterances that demonstrated clear properties of addressivity – being explicitly directed toward an interlocutor with the expectation of a response – were considered as questions, even if they did not result in direct answers. Rhetorical questions were excluded from the analysis.

Additionally, instances of scaffolding questions were coded when a teacher's question was limiting the scope of response options, and triggering questions were coded when a teacher's question allowed for unexpected and imaginative responses. Children's responses to teachers' triggering and scaffolding questions were coded as development of plot when they express their imagination and as development of coherence when they established connections between the events and the characters.

Ethical Considerations

The ethical principles of the Swedish Research Council (Vetenskapsrådet, 2017) for humanities and social sciences research are followed. This research was ethically approved by the Swedish Ethical Review Authority (Etikprövningsmyndigheten) with the case number 2021-03687. A comprehensive understanding of the research process and methods was provided to teachers through the informed consent form. Parents received the informed consent form from the teachers, supplemented by a video I created to explain the research. This video was made accessible on the preschools' platforms, ensuring that parents had the opportunity to view and engage with the information. Additionally, my contact information was provided, allowing parents to reach out with any questions, as exemplified by one parent who utilized this option. This approach aimed to enhance transparency and clarity in communicating the research process.

The design decision regarding who would implement the digital storytelling activities with the children is a crucial element of ethics in practice in this thesis.

Specifically, having the children's regular teachers lead the activities, rather than an unfamiliar researcher, enhances both the ethical and methodological rigor of the study. This approach not only strengthens the validity of the research by analyzing interactions within established teacher-children's relationships but also is proactive about ethics in practice by minimizing potential discomfort or disruption for the children. By allowing familiar teachers to conduct the activities, the study leverages existing bonds of trust and rapport, ensuring that interactions occur in a more natural and comfortable context for the children. Teachers have a deep understanding of each child's personality, needs, and behaviors, enabling them to be more attuned to nonverbal cues or signs of discomfort. For instance, during one activity, a teacher observed a child's interest in exploring other tablet applications and, sensing a shift in engagement, offered the child the option to leave the activity, which the child accepted.

My decision to refrain from being present during the digital storytelling sessions further supports this ethical approach. By reducing the researcher's physical presence, I aimed to minimize any potential impact on the children's behavior (and teachers), fostering a more naturalistic setting despite the presence of a camera. To address the possible influence of the camera itself, I introduced the camera and explained its functions to the children before implementing the digital storytelling activities (Flewitt & Ang, 2020). Additionally, during my field-based investigation in the preschool environments, I took on the role of "an adult seeking knowledge" (Huf, 2013, p. 66). I introduced myself as a researcher interested in understanding how teachers teach and how children learn in preschool.

Assurances of confidentiality and anonymity in research publications are highlighted wherefore participants and preschools have been given pseudonyms. Data were used solely for scientific purposes and were reported by researcher(s) in such a way that individual persons were not identifiable by outsiders. All participation was voluntary, and participants had the right to freely express their opinions and withdraw their participation at any time without negative impact. Lastly, all research data are securely stored in a digital research storage folder provided by the University of Gothenburg, with access restricted to authorized personnel only.

Researcher's Role and Positionality

McKenney and Brand-Gruwel (2018) identify three roles for the educational design researcher: consultant, designer, and researcher. Throughout this research, I engaged with all three roles and reflected on my previous role as a substitute preschool teacher.

The role of consultant was apparent during my presentation in Kidspace's study day, where I attempted to provide the teachers a brief overview of PRECEC theory, multilingualism, and translanguaging. During the discussion, the teachers shared their relevant experiences with me and requested my perspective on the issues they encounter when teaching in a multilingual context. My responses were informed by my knowledge of the literature, my experiences as a multilingual individual in diverse educational settings, and my work with multilingual children to whom I taught Greek. Throughout most of the research, I identified primarily as a designer and researcher, focused on supporting teachers and adjusting the digital storytelling activities to fit the specific preschool setting and research objectives.

However, my previous role as a substitute preschool teacher in similar settings posed a challenge to maintaining a clear researcher identity. During the field-investigation, when I engaged in the preschool groups' daily activities, I began to develop a form of self-reflexivity. I consciously separated my researcher role from my prior teaching role as it was crucial to recognize that I was no longer in charge of these groups and that, as a researcher, my role was to observe, support, and reflect rather than instruct.

This reflective stance extended to acknowledging my own positive assumptions about multilingualism as an asset, as these could potentially predispose me to specific conclusions. Acknowledging my status as a multilingual who regularly employs translanguaging in communication, I realized that my personal experience might bias my understanding and acceptance of this approach. To counter this bias, I took steps to mitigate its impact by critically reviewing the literature to understand the empirical and theoretical grounds of the arguments being made. This ongoing process of critical reflection and literature review aimed to establish a solid theoretical and methodological foundation for this thesis, reinforcing the validity of the findings and enhancing the reliability of its conclusion. Overall, while my positionality as a former teacher and a multilingual individual, provided valuable insights and sensitivity to the teachers' needs and workload and children's

needs, they also required constant self-reflection to prevent personal biases from shaping the research's outcomes.

About Generalization

In this thesis, transparency is prioritized by offering rich, detailed descriptions of the intervention design and the specific ECEC settings. Such transparency provides readers with substantial information to consider how these findings might translate to their own educational contexts, fulfilling an aim of this thesis to offer insights that may have relevance beyond the initial setting. This approach aligns with McKenney and Reeves' (2018) emphasis on detailed descriptions in DBR to support potential transferability.

Additionally, this thesis aligns with Yin's (1989, p. 44) concept of analytic generalization, as it aims "to generalize a particular set of results to a broader theory", the PRECEC theory. Yin (2010) suggests that generalizability improves when findings from a single case study are consistent with existing literature. To this end, the three studies included in this thesis, along with the discussion chapter, situate the research's findings — on how ECEC teachers can be responsive to bi-/multilingual children's semiotic repertoires and support their participation in activities with digital technologies — within the context of prior studies, creating a foundation for potential broader applicability within the field.

Trustworthiness

This thesis aims to contribute to the development of pedagogical knowledge oriented towards teaching in ECEC, concerning responsiveness and support to bi-/multilingual children's semiotic repertoires and participation in activities where digital technologies are used. Therefore, it is crucial to demonstrate the credibility, reliability, and validity of the research's findings. Since, this is a qualitative research, trustworthiness offers a framework to evaluating the rigor and integrity of the research process (Lincoln & Guba, 1985). This section outlines the steps taken to establish trustworthiness, drawing on the criteria proposed by Lincoln and Guba (1985): credibility, transferability, dependability, and confirmability. By addressing these criteria, the thesis aims to ensure that the findings authentically reflect the reality of participants and the contexts while maintaining transparency and ethical rigor throughout the research.

Although time at the preschools was limited, two years of prior working experience in other international preschools and one week of fieldwork in each setting provided a strong foundation for contextual understanding. This familiarity facilitated a better navigation and interpretation of the dynamics within the participating settings. Contextual accuracy was prioritized in several ways. First, this thesis elaborates on the national preschool curriculum, particularly its perspectives on multilingualism and the use of digital technologies, as well as findings from the Swedish School Inspectorate. Second, it provides detailed descriptions of the preschool settings, their pedagogical approaches, and the teachers' backgrounds, ensuring that the findings are grounded in the specific context. Credibility was further enhanced by incorporating multiple data sources, including interviews with principals and teachers, field observations, photographs of the preschool environments, screen recordings, and video recordings of the activities. These varied sources offer a comprehensive and nuanced view of the research context. Additionally, the work presented in this thesis has undergone extensive peer review. Feedback was received during text seminars by colleagues, during planning, half-way and final seminars by national and international scholars, and through peer reviews of the published articles.

Moving to transferability, which addresses the extent to which the findings can be applied to other contexts, this thesis provides detailed, thick descriptions of the research context and participants. These descriptions enable readers to access the applicability of the findings to their own educational settings. Furthermore, the research is underpinned by a broader theoretical framework (PRECEC), which enhances its relevance to other contexts.

Regarding dependability, a detailed documentation was maintained throughout the research process, including decisions about design, methods and any changes made. This documentation formed the basis of this chapter. Additionally, my supervisors were actively involved in the research processes, offering opportunities for debriefing and ensuring methodological rigor.

Lastly, researcher reflexivity, as discussed in this chapter, contributes to confirmability by acknowledging and critically reflecting on my own influence in the research. Another factor contributing to the confirmability of this thesis is the documented rationale behind the decisions made throughout the research, as elaborated in this chapter.

Methodological Limitations and Challenges

This last section of methodology outlines key limitations and challenges as they are essential for interpreting findings accurately and clarifying the limits of what this thesis can make claims about based on the research that was implemented. First, a critical consideration in this thesis is the limitation of the data in terms of its amount and duration. While the dataset provides valuable insights into the research questions since the focus is on how the activities evolve and participants interactions, it is essential to acknowledge the limited duration of the fieldwork/observations and the small number of recorded activities. The small sample size was constrained by practical factors, including participants' willingness to take part in the research and the time restrictions in the preschool settings during the post-Covid period.

Hence, this thesis does not make claims about participants' development or changes in their participation, as such claims would typically require longitudinal data collection. However, the limitation in the amount of data was addressed through a rigorous analytic approach. The dataset was revisited and analyzed multiple times, focusing on different aspects of the interactions and answering various research questions. This iterative approach allowed for a detailed examination of the available data and ensured that its richness was fully explored.

Secondly, while the selection of international preschools was intentional due to teachers' and children's diverse background, it is essential to acknowledge that these preschools might not be representative of the broader Swedish ECEC institutions. This underscores the need for caution in generalizing the results beyond the specific contexts studied.

Thirdly, although the research took place within authentic preschool environments, the digital storytelling activities occurred in a separate room, away from the main group setting. This separation means that it remains uncertain if the presence of the entire group of children could have affected and shaped the dynamics of the digital storytelling activities.

Fourthly, there were issues with the video recordings and specifically in two instances, certain segments of the digital storytelling activities (the beginning or the ending) were not captured due to technical issues. The absence of these recorded segments resulted in generation of some incomplete data. These incomplete data were included in the analysis.

Fifthly, the fact that the design of the activities underwent through changes in the two preschools raises concerns regarding generalizability and/or consistency.

However, these changes were inherent to the research's iterative nature and serve to align the intervention with the realities of the preschools (e.g. participants' needs). Additionally, this limitation is addressed in this chapter through documenting the changes and elaborating on the reasons why they were necessary.

Finally, there were inherent differences between the two participating preschools, despite both being international preschools. As with all educational institutions, variations in their organizational structures, pedagogical approaches, staff compositions, and routines are inevitable. These differences may have influenced the implementation of the digital storytelling activities, and the nature of teacher-children and peer interactions observed during the study. While these differences are acknowledged and described in detail within the thesis to provide context, it is important to clarify that this research is not a comparative study of the two preschools. These variations were not viewed as constraints but rather as opportunities to capture a wider range of teaching practices and contexts, enriching the insights derived from the research.

Chapter 5 Summary of Articles

This compilation thesis comprises of three empirical studies, each contributing essential insights to address the overarching research question of this thesis. In this chapter concise summaries of these three papers are provided.

Article 1

Published as: Shengjergji, S., Myrendal, J., & Pramling, N. (2024). Responding to Children's Semiotic Repertoires in Collaborative Digital Storytelling. *Early Childhood Education Journal*, 1-12. <https://doi.org/10.1007/s10643-024-01761-2>

The article focuses on how teaching in ECEC can be responsive to bi-/multilingual children's semiotic repertoires during digital storytelling activities. It addresses the following research question: How are various semiotic repertoires introduced and responded to in ECEC digital storytelling activities? Additionally, it aims to extend PRECEC's concept of play responsivity to responsivity to children's semiotic repertoires.

Along with PRECEC theory, the article incorporates the concept of translanguaging. This concept is understood as a communicative practice among bilingual individuals that transcends the boundaries of distinct, named languages (García & Wei, 2014) and a pedagogical approach to bi-/multilingual education (García & Kano, 2014).

The video recordings are transcribed and coded for instances where participants use their semiotic repertoires. The codes are named language, sign language, gestures, pointing, facial expressions, sounds, gaze direction, onomatopoeia, and drawings. These codes are grouped as instances of translanguaging showing participants using their semiotic repertoires to participate in the digital storytelling activities. Following this coding process the transcriptions are analyzed based on the principles of IA to explore what responsivity to semiotic repertoires means. Teachers' response patterns are identified and categorized into the following codes: acknowledging (reflective), prompting and elaborating (prospective), and clarifying and shifting (coordinative).

The findings indicate that teachers used translanguaging to ensure equal participation and understanding for beginner English language learners during the activities. The teachers' practices involved not only alternating between English and Swedish but also incorporating hand gestures, sign language, onomatopoeia, and coordinating these various semiotic resources with verbal speech. By orchestrating these various semiotic means, the teachers demonstrated responsiveness to the children's semiotic repertoires, fostering inclusion. Additionally, it is shown that children were competent communicators, rejecting deficit-oriented perspectives, who responded to teacher's questions, conveyed the story behind their drawings, and contributed to the development of the activity through their translanguaging practices. These translanguaging practices included pointing at the screen, using hand gestures, nodding, making sounds (onomatopoeia) and facial expressions. All participating children orchestrated several semiotic modes during the activities.

The article discusses and challenges the term equal participation, arguing that it does not equate to sameness, as children may contribute in different ways. The findings highlight those children engaged in the activities not only through verbal means but also by intentionally utilizing their full semiotic repertoires to achieve communicative goals. Consequently, it is argued that teaching responsiveness requires acknowledging and addressing the diverse semiotic resources children use to represent and communicate their ongoing meaning-making processes. Additionally, the importance of teachers drawing on their own full semiotic repertoires to support children's participation in activities is emphasized to address social injustices faced by children with varying linguistic and other experiences.

Article 2

Published as: Shengjergji, S. (2024). «Yeah, I am making new stuff!»: responsiveness to and negotiations of agency during digital storytelling in preschool. *European Early Childhood Education Research Journal*, 1-18. <https://doi.org/10.1080/1350293X.2023.2301595>

The article explores how children's agency is expressed during digital storytelling and how teachers responded to it. It addresses the following research questions: (a) How does children's agency come to the fore during digital storytelling activities, and (b) How do the teachers' responses open up for and lead to negotiations of children's agency?

Even though children's expressions of agency are evident in previous research since children use digital technologies as authors and creators, there has been limited analysis of agency itself in this context. Additionally, the initial analysis within the framework of PRECEC has not extensively examined the concept of agency (Pramling et al., 2019). Therefore, this study specifically aims to fill these gaps by employing PRECEC as a theoretical framework, incorporating a socio-cultural approach to children's agency (Edwards 2007; Emirbayer and Mische 1998; Fisher 2010; Rainio 2008), and analyzing video data through Interaction Analysis (Jordan & Henderson, 1995). It is important to clarify that the digital storytelling activities that were video recorded were adult-designed and not initiated by children, which adds to the literature since children's agency is often studied in situations where adults' presence is minimal (Esser, 2016).

The video recordings are transcribed and coded for instances of children's expressions of agency. More precisely, instances of children's expressions of agency are coded when they initiated actions, expressed preferences/thoughts, and shaped/alterd the development of digital storytelling activities. Instances of intersubjectivity are coded when participants demonstrated mutual understanding through their words and actions while instances of alterity are coded when participants changed/alterd the direction of the activity. Following this coding process the transcriptions are analyzed based on the principles of IA to explore teachers' response patterns to children's agency.

Findings highlight that children's expressions of agency were apparent by a) introducing new characters and altering the story plot, b) negotiating the meaning of their drawings, and c) exploring the design characteristics of the story making application. Teachers' role during these activities facilitated and was responsive to children's agency by a) posing questions seeking opinions, enabling children to contribute to narrative construction and promoting their authorship/agency, b) being responsive to children's alterity – understood as expression of agency (Pramling et al. 2019) – by meta-communicating their previous suggestions and reminding them of the storyline they created, c) accepting diverse interpretations of their drawings, d) inviting them to test their initiatives, e) assisting them with the application's tools, and f) posing questions that stimulated their “what if?” thinking, enriching the activity.

The article argues that children exhibited agency even in adult-designed activities with a predefined structure/framework. In line with the sociocultural perspective, the findings demonstrate children's agency as a dynamic process emerging and evolving through interactions with teachers and peers within a

specific cultural context (an international preschool in Sweden) using cultural tools (tablets and the Book Creator application). Thus, teachers' role is emphasized in fostering and mediating the emergence and development of children's agency. In relation to PRECEC's theory, the findings illustrate the elements of a responsive teaching approach to children's expressions of agency when integrating digital technologies. Furthermore, consistent with other studies it demonstrates that the open-ended design of the application used supported expressions of agency by positioning children as authors and creators. However, the article argues that digital tablets and applications act as mediators together with teachers or peers during interactions and negotiations rather than independent forces capable of determining children's agency.

Article 3

Manuscript title: Scaffolding and Triggering: teachers' questions and children's response patterns during digital storytelling activities in preschool. Authors: Shengjergji, S., Myrendal, J., & Pramling, N.

The article examines teachers' questions and children's response patterns during digital storytelling activities. More precisely, drawing on PRECEC theory teachers' questions are categorized as either scaffolding (questions limiting the response options) or triggering (questions allowing for unexpected, imaginative responses). The article addresses the following research questions: (a) what processes of children's narrative production do teachers' triggering and scaffolding questions support, and (b) what are the differences, if any, in children's response patterns to these questions during digital storytelling activities?

The video recordings are transcribed and coded for instances of scaffolding and triggering questions. Following this coding process the transcriptions are analyzed based on the principles of IA to explore children's responses patterns. Children's both verbal and non-verbal cues (such as gestures, shifts in gaze, and other actions) are acknowledged as response(s) to questions. Rhetorical questions are excluded from the analysis.

The findings indicate that teachers asked a total of 993 questions, comprising 377 scaffolding questions, 238 triggering questions, and 378 questions related to managing the flow of the activity. They shifted between scaffolding and triggering questions during the activities to support children's narrative production and especially (a) the development of plot through encouragement of imagination and (b) the development of coherence through facilitating narrative connections where

events are not randomly arranged but are interconnected in a meaningful way. The recurring pattern of shifting between scaffolding and triggering questions demonstrated that the teachers' choice of questions was contingent on their perception of children's abilities to participate in the types of dialogue promoted by these questions. This assessment was based on the children's responses, including even minimal or non-responses.

The article discusses the importance of treating questions as inherently interactive phenomena. Even though scholars advocate for the use of open-ended questions to promote children's language production (de Rivera et al., 2005; Lee & Kinzie, 2012; Meacham et al., 2014), the article argues that this approach is not a one-size-fits-all solution. The efficiency of questioning strategies is not solely determined by asking more open-ended, triggering questions or another particular type of question. Rather, it fundamentally depends on teachers' capacity to attune to and be responsive to children's understanding, abilities, and their ongoing learning processes. Hence, shifting between types of questions, based on children's responses and non-responses is imperative because, based on the findings, each questioning type (scaffolding and triggering questions) played a distinct yet complementary role in facilitating the multifaceted aspects of children's storytelling skills. Additionally, the article argues that it offers valuable insights and practical pedagogical examples of using of digital technologies in ECEC settings. This addresses a gap in the literature regarding providing guidance on what constitutes "high-quality pedagogies with technologies" in early childhood settings (Kewalramani et al., 2020, p. 163).

Chapter 6 Discussion

In this chapter the main findings of this thesis are presented, interpreted, and discussed in relation to previous literature, PRECEC theory and pedagogy. The aims of this thesis have been (a) to develop new pedagogical knowledge oriented towards teaching in ECEC, concerning responsivity and support to bi-/multilingual children's semiotic repertoires and participation in activities where digital technologies are used, (b) to contribute with new empirically grounded knowledge about ECEC concerning multilingualism and digital technologies, and (c) to further develop PRECEC theory. The overarching research question has been: How are ECEC teachers responsive to bi-/multilingual children's semiotic repertoires during digital storytelling activities (using tablets and a story-making application), and how do they support children's participation in these activities? This chapter addresses the overarching question of the thesis by elaborating on several key areas. First, it discusses how ECEC teachers demonstrated responsivity to bi-/multilingual children's semiotic repertoires during digital storytelling activities. Second, it elaborates how ECEC teachers supported children's participation in activities with digital technologies. Third, it discusses how this thesis contributes to the development of PRECEC theory. Fourth, it situates the findings within the broader framework of social and cultural sustainability. Finally, the chapter outlines implications for practice and offers recommendations for future research.

Responsivity to Bi-/multilingual Children's Semiotic Repertoires

Article I showed how responsive teaching to bi-/multilingual children's semiotic repertoires translates into praxis during digital storytelling activities. More precisely, responsivity involved a range of teachers' actions, such as acknowledging children's contributions (verbal and non-verbal) through repetition or imitation, verbalizing their drawings or actions, asking about words in their mother tongue, meta-communicating about the languages used, explicating implicit meanings in a children's utterances, employing sign language, translating, and shifting between

named languages. Similarly, teachers in multilingual Luxembourg employed comparable strategies during conversations, daily routines, language and literacy activities (Kirsch, 2020; 2021). However, a notable difference is that the teachers in Kirsch's studies had participated in a 15-hour professional development course designed to help practitioners develop multilingual pedagogies that leverage children's varied linguistic resources and expand their language repertoires. In contrast, the teachers in this research implemented these practices without such targeted training, highlighting their intuitive responsiveness but also suggesting the potential benefits of professional development in enhancing these practices further.

Additionally, Article I underscored the importance of gestures as a key component of teachers' responsiveness to children's semiotic repertoires during digital storytelling activities. Teachers used deictic gestures to draw attention to and coordinate children's perception, iconic gestures to represent a referent and explain a word, and kinetographic gestures to demonstrate and enact narrative actions. This aligns with findings from bilingual Malta, where gestures were used by teachers to teach vocabulary and demonstrate instructions (Mifsud & Vella, 2018), and from an English-medium preschool in bilingual Hawaii, where gestures supported children's multilingual contributions in conversations during activities (de Sousa, 2017). However, the differentiation of gestures in my analysis and their communicative functions constitutes a contribution beyond merely replicating the findings of these studies.

In Article I, both teachers and children engaged in translanguaging during the activities. Translanguaging, as observed in this study, encompassed not only fluid transitions between named languages (English and Swedish) but also an orchestration of multiple semiotic resources, including hand gestures, sign language, facial expressions, onomatopoeia, and the coordination of these semiotic elements with verbal communication. This multimodal approach to translanguaging allowed children with varied experiences, understandings, and language proficiencies to participate and co-construct the digital storytelling activities. As discussed in the literature review (Chapter 2), most studies referring to translanguaging practices have predominantly emphasized on participants' flexible language practices, often neglecting other semiotic resources (Axelrod, 2017; Gort & Sembante, 2015; Mary & Young, 2017; Palojärvi et al., 2023). However, like the findings of this thesis, recent research highlights that bi-/multilingual children purposefully employ various semiotic resources, such as gestures, sounds, pointing, and body movements, alongside their flexible use of

languages, to communicate, participate in and shape activities (Bengochea et al., 2018; Kangas et al., 2024; Kirsch & Mortini, 2023; Schwartz et al., 2022).

Moreover, the findings demonstrated that teachers' translanguaging practices fostered responsiveness to bi-/multilingual children's semiotic repertoires, legitimized their diverse communicative practices, and facilitated their participation in the activities. By doing so, these practices also challenged the current political landscape, which often lacks multilingual awareness, prioritizes the improvement of Swedish language proficiency through a "Swedish only" approach, and equates "language skills" solely with "Swedish skills" (Adami & Lyngbäck, 2024; see also Swedish Government Official Report: SOU 2020:67; and current political agreement: Tidöavtalet: Överenskommelse för Sverige [The Tidö Agreement: Agreement for Sweden], 2022). Regarding children in the early stages of developing the majority language (Swedish) the findings demonstrated their strong communicative competences rejecting deficit-oriented perspectives (Flores & Rosa, 2017). These children effectively used translanguaging (including language, pointing, nodding, facial expressions, sounds, hand gestures, and drawings) to articulate narratives behind their drawings, respond to teachers' questions, and generally participate in and contributed to the digital storytelling activities. Such findings align with the work of García and her colleagues, who argue for the social justice focus of translanguaging pedagogy. They emphasize that translanguaging, by liberating and legitimizing the diverse communicative practices of bi-/multilingual and minoritized students, constitutes a political act (Flores, 2014; García, 2023). It challenges the underlying social inequalities reinforced by monolingual and monocultural ideologies that frequently marginalize bi-/multilingual children's communicative practices and hinder their full participation in classroom activities.

Finally, not all children used their home languages during the digital storytelling activities. Similarly, Rowe and Miller (2016) found that in the first year of their design study, most dual-language recordings in the e-books were created by Spanish-English bilinguals, while speakers of other languages rarely used their home languages. However, when the study's instructional conditions changed to include e-book demonstrations with recordings in children's various home languages, all emergent bilinguals participated in recording in both their languages, regardless of background. Research has highlighted potential tensions between schools' attempts to support children's use of their home languages and the children's own reluctance to use them in school environments (Pagett, 2006). In these settings, where the dominant institutional language prevails, children may

prefer to conform and blend in with their peers rather than stand out. Morillo Morales and Cornips (2023) add in this discussion with findings from a study in Dutch Limburg, where children quickly learned that using Dutch was more important than other languages in preschool, emphasizing the issue of language status and hierarchy in preschools in Limburg. Overall, such findings suggest that social dynamics, teacher practices, and institutional language policies play crucial roles in shaping children's language choices in educational settings, often leading to the marginalization of home languages.

Supporting Children's Participation in Activities with Digital Technologies

Articles I, II and III collectively demonstrate how teachers supported children's participation in activities involving digital technologies. While only a few studies have provided in-depth descriptions and analyses of the processes and social interactions involved in children's on-screen writing (Kucirkova et al., 2019), this research contributes to filling that gap.

Article I highlights how children participated in and co-constructed digital storytelling activities using a variety of semiotic repertoires, such as hand gestures, facial expressions, dramatic enactments, and pointing. These findings emphasize that children's participation is not limited to spoken language and underscored the importance of adults attending to all forms of communication. This challenges critiques that participation often overemphasizes discursive forms, given the centrality of "voice" in this field (Wyness, 2013). By drawing attention to non-verbal, multimodal forms of communication and the concept of translanguaging, the findings broaden the understanding of participation, demonstrating the richness of children's contributions beyond traditional linguistic boundaries.

Article II offers valuable insights into children's expressions of agency during the digital storytelling activities and teachers' responses to it. During their participation in the activities, children demonstrated agency by introducing new characters, altering the story plots, negotiating the meaning of their drawings, and exploring the design characteristics of the story making application. These findings align with other research showing that children use digital technologies as creators of digital stories, movies, and 3D-print objects shifting from merely being "consumers" of digital content to becoming "producers" (Fleer, 2020; Hatzigianni et al. 2020; Skantz Åberg et al., 2015; Undheim 2020).

Additionally, the teachers played a pivotal role in mediating and shaping children's agency and participation during the digital technologies. They employed a range of pedagogical practices, including: (a) asking opinion-seeking questions to promote children's narrative production and their authorship/agency, (b) being responsive to children's alterity, (c) meta-communicating their previous suggestions and reminding them of the storyline they created, (d) accepting diverse interpretations of their drawings, (e) inviting children to test their initiatives, (f) assisting them with the application's tools, and (g) using questions to stimulate their "what if" thinking, enriching the activity. These findings are consistent with previous studies that highlight the enabling and constraining role of teachers in fostering children's agency (Houen et al., 2016; Sairanen et al., 2022). Alongside teachers' pedagogical practices the findings emphasize the open-ended design of the story making application as a mediator for children's agency, positioning them as authors and creators by providing multiple tools and features to experiment and construct their own characters and storylines. In a similar vein, Palmér (2015) found that teachers' interactions with children can differ depending on the digital application used, which also influences children's participation and dialogue. While Lawrence (2018) pointed out that type of application appears to significantly shape both peer interactions during play and the nature of digital play exhibited.

Article III highlights another important teaching practice that supported children's participation in the activities with digital technologies: the use of teachers' scaffolding and triggering questions. These findings revealed that teachers shifted between scaffolding and triggering questions to support children's narrative skills, particularly in developing story plots and coherence. Plot development was enhanced through stimulating children's imagination, while coherence was facilitated by helping children make meaningful connections between events and characters rather than arranging them randomly.

Together, the findings from these three articles contribute empirical examples of high-quality pedagogies involving digital technologies, addressing a gap in the literature highlighted by Kewalramani et al. (2020). These articles illustrate how digital technologies can be used in a way that aligns with fundamental principles of ECEC, such as play, child-centeredness, children's rights, and agency. More precisely, the digital storytelling activities where play-formatted (van Oers, 2014), combining structured elements with freedom for children to explore, create, imagine, and co-construct meaning. Teachers' pedagogical practices during digital technologies- such as translanguaging, questioning, and responsivity to children's expressions of agency- supported efforts regarding children's right to maintain and

use their home languages, facilitated their agency, and upheld a child-centered approach.

Additionally, the findings from the three articles provide empirically grounded knowledge about how children's expressions and creation can be facilitated by digital technologies something pointed out in the national preschool curriculum as something to strive towards. Likewise, they demonstrate that digital technologies, when used thoughtfully and intentionally, can incorporate children's semiotic repertoires in preschool and offer cultural experiences, which is also something that is stated as a goal to strive towards in the Swedish National Agency for Education (2023). Hence, these findings contribute to bridging the gap between policy aspirations and practical pedagogical solutions in ECEC.

However, it is essential to discuss a recent notable shift in Swedish government policy regarding screens in preschool settings. At the time of writing this thesis, the current government has challenged the curriculum goals relating to digital technologies and made arguments about the disadvantages of digital learning technologies in the preschool, particularly in relation to health and developmental risks. The government proposes removing the requirements for digital technologies in the curriculum, advocates for a screen-free preschool, and a more selective approach.

Despite the policy shift, the empirical findings of this research remain relevant and insightful because they serve as concrete illustrations of how ECEC teaching that uses digital technologies can position children as creators and authors, include and value their semiotic repertoires, and foster social interaction. They therefore counter the misrepresentation nurtured by the politicians in media. Even as the government moves towards a more selective approach to digital technologies in preschools, it is evident in the research literature that teachers' pedagogical practices have a pivotal role for children's engagement and learning with digital technologies (Fleer, 2019; Fleer, 2020; Neumann, 2020; Selwyn, 2010; Stephen & Edwards, 2017; Undheim, 2020; Undheim & Jernes, 2020; Vartiainen et al., 2019; Yelland, 2018). Hence, the role of digital technology in children's learning and development in preschool needs to be understood within the context of the pedagogical practices and teacher-child interactions in which it is embedded.

Evolving PRECEC Theory

All three articles within this thesis make significant empirical and conceptual contributions to the advancement of PRECEC theory. Responsivity, a

fundamental concept within PRECEC, has been a focal point in the initial work by Pramling et al. (2019), emphasizing teaching responsivity to children's play. Building upon this foundation, Article I delves into the realm of play-formatted activity (van Oers, 2014) involving digital technologies, but with a particular focus on exploring teaching practices that can be responsive to bi-/multilingual children's semiotic repertoires. By doing so, it extends the concept of responsivity beyond its traditional scope to encompass all semiotic repertoires used by children. This expansion serves to enrich children's experiential foundation and address social inequities, as argued by Kultti (2022). Additionally, Article I not only advances PRECEC conceptualization but also serves as practical application of the theoretical framework for the ECEC teachers, as it provides tangible examples of teaching practices that are responsive to children's semiotic repertoires.

Limited previous research within PRECEC has focused on and analyzed children's agency (Lagerlöf et al., 2019; Pramling et al., 2019). Addressing this gap, Article II contributes significantly to enhancing PRECEC's conceptualization of children's agency. It not only presents concrete examples of children demonstrating agency but also provides empirical evidence of what a responsive teaching approach to children's agency looks like when digital technologies are used into play-formatted activities. More precisely, the article's findings underscore the dynamic nature of agency, highlighting its emergence and evolution during interactions with peers, more knowledgeable individuals, and cultural tools in specific cultural contexts. These findings are in contrast with views of agency as something possessed by the child irrespective of situation and responsivity. Additionally, it is shown that a responsive teaching approach to children's expressions of agency is pivotal since teachers can both scaffold and delimit the development of agency (Houen et al. 2016; Pramling et al., 2014).

PRECEC has suggested a nuanced distinction in the supportive actions of teachers or more knowledgeable others during play-responsive activities. It differentiates between "scaffolding", which involves supporting children towards achieving specific goals/outcomes, and "triggering", which encourages exploration, openness, and engagement with the unknown (Pramling et al., 2019). Article III builds on this conceptual distinction by empirically examining teachers' triggering and scaffolding questions and children's response patterns to these questions during digital storytelling activities. Triggering questions are understood as those which widen the scope of possibilities, enabling children to contribute novel and unforeseen elements to the narrative activity. Conversely, scaffolding questions are understood as those which narrow down the range of potential

responses (e.g. presenting children with a binary choice). Findings underscore the significance of viewing questions as inherently interactive phenomena since teachers' shifts between triggering and scaffolding questions were intricately linked to children's responses or non-responses (which, from a dialogical point of view, also constitute a form of response). This flexible and responsive approach of teachers indicates a need for question formulation that meets the varying levels of children's understanding, cognitive abilities, communication skills or in other words their learning journey. For instance, some children thrive with triggering questions that encourage self-expression and exploration of ideas. Contrary, some children may struggle with such questions, requiring more guidance and structure in their learning process. In these cases, teachers may choose scaffolding questions to provide support and facilitate comprehension. Both question types serve distinct yet complementary roles in facilitating the multifaceted aspects of children's narrative competence.

Another important contribution to PRECEC theory lies in the investigation of teacher-children's interactions and peer interactions during children's engagement with digital technology – an area previously unexplored within the PRECEC framework. The findings of the articles, indicate that teachers' responsive role towards children's semiotic repertoires, agency, story plots, understanding, and meaning making supported their engagement with digital technologies (here tablets and the *Book Creator* application). More precisely, teachers' scaffolding and triggering questions aesthetically enriched the activities by facilitating children's imagination, while their pedagogical translanguaging enriched the cognitive aspects of the activities by supporting children's meaning making processes. Moreover, teachers' pedagogical praxis, coupled with the open-ended nature of the application *Book Creator* positioned children as authors/creators of their own stories.

Turning to previous research literature, Undheim's (2022) review points out a growing call among researchers to reassess and challenge the traditional ideology of play-based pedagogy when it comes to the use of digital technologies. Along similar lines, Kewalramani et al. (2020, p. 163) argue that "early childhood settings need more guidance in relation to what high-quality pedagogies with technologies may look like" and they also stress that these technologies need to be linked with core principles of ECEC, such as play and child-centeredness. This thesis, based on the findings of all three articles, advocates that PRECEC can serve as a suitable framework to guide teachers' pedagogy with digital technologies in ECEC settings. Specifically, PRECEC challenges the ideology of play-based pedagogy, which

implies that teaching needs to begin in play but may subsequently leave it behind. Instead, PRECEC understands play as a potential feature that can emerge within any activity, rather than as a necessary starting point or a separate category of activity (Pramling et al., 2019). In this view, play is understood as the participants' concern, meaning it can arise and recede dynamically during any activity rather than being a fixed prerequisite for teaching. Additionally, the principle of responsivity in PRECEC emphasizes an ethical practice, where children's different ways of participating is recognized and potentially consequential for how activities develop (Pramling et al., 2019). Furthermore, in today's digital age, the distinction between "real" play and digital play is increasingly blurred (Edwards et al., 2020). Therefore, PRECEC's approach of not defying play but rather understanding it based on participants' own expressions of what they take as play (for an elaboration, see Chapter Three) can provide a suitable framework for navigating this issue. Finally, PRECEC's concepts of responsivity, alterity, intersubjectivity, triggering, metacommunication, *as if* and *as is* that are parts of this research align with the core principals of ECEC, such as play and child-centeredness.

Implications for Social and Cultural Sustainability

This section delves into the implications of this thesis' findings with a focus on children's participation, agency, and the observed teaching practices to address key aspects of social and cultural sustainability in ECEC contexts.

Children's participation is a central concept in studies on social and cultural sustainability (and generally sustainability) in ECEC (Bascopé et al., 2019; Bergan et al., 2021; Pramling & Samuelsson, 2024; Weckström et al., 2022). This thesis extends the understanding of participation beyond spoken language, emphasizing the diverse array of communicative modes children use to engage and contribute. Children utilized gestures, facial expressions, body movements, pointing, and drawings, which are equally significant in expressing their ideas and interacting with peers and teachers. Recognizing these varied forms of participation underscores the importance of valuing all semiotic repertoires children employ. By doing so, educators can ensure that every child's voice—whether verbal or non-verbal—is acknowledged and supported in educational activities, fostering inclusive and equitable learning environments. Moreover, viewing children's participation solely as a politically oriented activity, such as involvement in decision-making, is insufficient for addressing social and cultural sustainability. For

children to feel truly valued, there must be recognition in their daily lives (e.g. in preschool's activities) of the contributions they already make to society and of their ongoing efforts to build mutually respectful relationships with adults and peers (Leonard, 2016).

Another key concept in studies on social and cultural sustainability (and generally sustainability) is children's agency, with scholars emphasizing the role of children as "agents for change" (Davis, 2008; Bigger & Webb, 2010). Caiman and Lundegård (2014) state that children in their study developed "agency practically all by themselves, without a teacher's initial directions and questions" (p. 455). However, this thesis provides empirical evidence that recognize the interconnected nature of agency and the socio-cultural context and shift the focus from viewing agency as an innate attribute to understanding it as a dynamic and relational process. The findings reveal that agency does not arise in isolation rather it emerges, develops, and can be constrained through interactions with peers, teachers and the socio-cultural context, including its artifacts. For instance, the use of digital technologies in this study demonstrated how agency could be mediated by tools that empower children to express their ideas, make creative decisions, and shape the direction of activities. Additionally, teachers' responsive practices created opportunities for children to explore, make decisions, and co-construct stories. Even though children are viewed as capable agents of change in the literature, it is important to recognize the vital role of teachers and the socio-cultural environment in fostering, guiding, and supporting their agency.

Finally, scholars have highlighted social justice as a central theme in addressing social and cultural sustainability (Valkonen & Furu, 2023). This thesis findings show that teachers' responsivity to bi-/multilingual children's semiotic repertoires involved translanguaging practices, where teachers shifted between name languages, used hand gestures, sign language, onomatopoeia, and coordinated these semiotic means with verbal communication. Similarly, children also engaged in translanguaging practices to contribute to the digital storytelling activities. Therefore, by embracing diverse communicative practices, teachers can create inclusive spaces where every child, regardless of linguistic background, can understand and participate in activities. As García and her colleagues argue, translanguaging embodies a social justice stance by centering language-minoritized children and recognizing the value and legitimacy of their diverse semiotic repertoires (Kleyn, & García, 2019). These findings suggest that translanguaging practices not only promote inclusivity and equity but also actively contribute to the broader goals of social and cultural sustainability in ECEC settings. By

recognizing and legitimizing diverse semiotic repertoires, such practices underscore the role of teachers in fostering inclusive environments.

Implications for Practice

This section discusses the practical implications of the findings, offering insights into how ECEC teaching can be responsive to bi-/multilingual children's semiotic repertoires and support their participation in activities inclusive of play and involving digital technologies. Deviations from the “norm” in preschools, such as children using diverse semiotic repertoires, are not inherently problematic (Adami & Lyngbäck, 2024). Instead, the issue lies in the biases and prejudices held by teachers, peers, and the broader societal context regarding these differences. For example, in relation to the findings of this thesis, children demonstrated their ability to express themselves and participate in digital storytelling activities using a wide range of communicative resources, including gestures, facial expressions, drawings, and pointing. These contributions were legitimate and meaningful, yet they risk being undervalued or misunderstood when measured against monolingual or verbal-centric standards.

From a practical standpoint, it is essential for teachers and educational leaders to critically reflect on their own biases and adopt a responsive teaching approach to children's semiotic repertoires, needs, and abilities. As demonstrated in the findings, a responsive teaching approach may involve translanguaging practices where teachers orchestrate various semiotic resources to ensure children's participation and understanding in preschool activities. It also involves acknowledging all forms of communication that children bring to the classroom as legitimate and meaningful contributions. Such a responsive teaching approach that treats children as competent communicators can challenge deficit perspectives viewing them as lacking language, skills, and knowledge and move beyond political ideologies that narrowly link language skills to “Swedish skills” (Adami & Lyngbäck, 2024). Additionally, professional development programs and teacher training should prioritize equipping educators with the knowledge and skills needed to embrace and support linguistic and cultural diversity.

Regarding the use of digital technologies in ECEC activities, the findings emphasize the importance of incorporating open-ended digital tools that encourage interaction and collaboration among children, leading to the development of shared creations (e.g. stories, digital art, or thematic projects). These technologies open up for children's imagination and agency while allowing

them to express their ideas using a variety of semiotic resources. Equally critical is the role of teachers in mediating the use of digital technologies with pedagogical intention. More precisely, as demonstrated in the findings, even when activities with digital technologies are adult-designed and have a preliminary structure, it remains essential for teachers to allow children the freedom for creativity, play, and exploration. Pedagogical intention can encompass various aspects, including facilitating children's narrative production through scaffolding and triggering questions, stimulating their "what if" thinking (Pramling & Samuelsson, 2024), supporting their expressions of agency, including their home languages, and fostering collaboration among children. Overall, it is important to thoughtfully plan the use of digital technologies as they do not act as independent forces driving children's participation (Stephen & Edwards, 2017). Instead, they function as mediators, whose impact is shaped by the extent and nature of teachers' and peers' engagement in the activities where they are used.

Future Research

There are several avenues that merit further investigation regarding teaching in ECEC, concerning responsivity and support to bi-/multilingual children's semiotic repertoires and participation in activities where digital technologies are used. This section outlines potential directions for future studies based on the findings and limitations of the current research. First, there is a need for longitudinal studies to explore potential changes over time in teachers' practices and children's participation during digital storytelling activities. Such studies could also investigate a wider range of activities, such as what is generally referred to in preschool as "free play" or child-initiated activities, incorporating diverse digital technologies.

Second, large-scale research, combining both quantitative and qualitative approaches, is essential to examine bi-/multilingual children's language development in relation to translanguaging practices and the use of digital technologies. Such research could clarify relationships between children's age (over time) and how the responsivity of educational practices may change in response to age-related experiences and changes. This large-scale research that combines quantitative and qualitative approaches would provide deeper insights into the interplay between translanguaging practices and the use of digital technologies with children's linguistic development.

Third, future research should focus on developing more collaborative interventions where teachers and researchers work together to address pressing educational challenges. Such collaboration is essential for creating meaningful and contextually relevant solutions. However, as noted in this thesis, the demanding workload of teachers often limits their ability to actively participate in research beyond their routine responsibilities. To address this, future studies should consider implementing strategies that reduce the burden on teachers while ensuring their active involvement in the research process. For instance, creating flexible intervention schedules that align with teachers' existing commitments and providing ongoing professional development opportunities during the research process can help integrate their participation into their daily routines. Moreover, by viewing collaboration as a reciprocal relationship, going beyond collecting data from teachers, future research should aim to give back by offering concrete tools, strategies, or training that enhance teachers' professional practice and directly benefit their classrooms. By adopting such approaches, future interventions can foster a deeper engagement between teachers and researchers, bridging the gap between research and practice and ensuring that the outcomes are both impactful and sustainable in diverse educational settings.

Svensk Sammanfattning

I många samhällen börjar allt fler barn i förskolan med flerspråkig bakgrund och tar med sig en uppsättning semiotiska resurser som de använder i social interaktion för att delta i lek och andra aktiviteter. Samtidigt har användningen och tillgängligheten av digitala teknologier i förskolan ökat avsevärt, vilket i denna avhandling argumenteras skapa ett behov av responsiva pedagogiska praktiker som kan stödja flerspråkiga barns bidrag och deltagande i aktiviteter med digital teknik. Denna avhandling undersöker hur undervisning i förskolan kan vara responsiv gentemot flerspråkiga barns semiotiska repertoarer, vilka omfattar resurser som verbalt språk, gester och ansiktsuttryck, och hur barnens deltagande kan stödjas i aktiviteter med digital teknik. Avhandlingen bygger på teorin Lekresponsiv undervisning (LRU) eller på engelska Play-Responsive Early Childhood Education and Care (PRECEC), som beskriver undervisning som en process samkonstruerad av lärare och barn i dynamiskt samspel.

Avhandlingen är också motiverad av Barnkonventionens artikel 30, som erkänner rätten för barn från minoritets- och ursprungsbefolkningsgrupper att använda sina egna språk, samt av den underrepresentation av forskning om flerspråkighet i förskolan som fortfarande råder i Europa. Trots policy som värdesätter flerspråkighet tenderar praktiken i många förskolor att präglas av enspråkighetsnormer där språk hålls åtskilda. Den nationella läroplanen i Sverige, där studien genomfördes, betonar vikten av att stödja både svenska och barnens modersmål, men forskning visar att detta sällan tillämpas konsekvent i praktiken. Digital teknik beskrivs i läroplanen som ett verktyg för både kritisk och kreativ utveckling, men hur dessa teknologier används i praktiken och hur lärare medvetet kan integrera dessa förblir har ännu inte utforskats tillräckligt.

Mot denna bakgrund finns ett behov av forskning som grundar sig på empiriska exempel på undervisningspraktiker som kan vara responsiva gentemot flerspråkiga barns semiotiska repertoarer och använda digital teknik på sätt som överensstämmer med förskolans grundläggande principer, som lekintegrering och barncentrerat arbetssätt. Denna avhandling undersöker hur lärare och barn interagerar under digitala berättaraktiviteter (med applikation Book Creator) och hur dessa aktiviteter kan stödja barns deltagande och meningsskapande. Syftet är

att utveckla pedagogisk kunskap genom att undersöka hur lärare och barn samspelar, både med varandra och sinsemellan, och därmed bidra med teoretiska och praktiska insikter om flerspråkighet och digital teknik i förskolan.

Syften och Frågeställningar

- Att utveckla ny pedagogisk kunskap inriktad på undervisning inom förskoleverksamhet (ECEC), med fokus på responsivitet och stöd till två/flerspråkiga barns semiotiska repertoarer samt deras deltagande i aktiviteter där digitala teknologier används,
- Att bidra med ny empiriskt grundad kunskap om ECEC i relation till flerspråkighet och digitala teknologier,
- Att vidareutveckla teorin Lekresponsiv undervisning (LRU) (Pramling et al., 2019).

Dessa tre syften överensstämmer med PRECEC-forskarskolans bredare uppdrag, som syftar till att främja både pedagogisk praxis (vilket behandlas i det första syftet, med fokus på lärares praktik) och akademisk kunskap (vilket täcks av det andra och tredje syftet, som inkluderar empiriska och teoretiska forskningsfrågor). Den övergripande frågan i denna avhandling är: **Hur är förskolelärare responsiva gentemot flerspråkiga barns semiotiska repertoarer under digitala berättaraktiviteter där surfplattor och en berättarskapande applikation används, och hur stödjer de barnens deltagande i dessa aktiviteter?** De tre artiklarna bidrar till att besvara olika aspekter av denna övergripande fråga genom att analysera deltagarnas interaktioner under digitala berättaraktiviteter.

Den första artikeln behandlar frågan om hur olika semiotiska repertoarer introduceras och bemöts under kollaborativ digital storytelling. Den andra artikeln fokuserar på hur barns agens uppstår under digitala berättaraktiviteter samt hur lärarnas responser skapar möjligheter att förhandla denna agens. Den tredje artikeln undersöker vilka processer i barns narrativa produktion som stöds av lärares triggerings- och scaffolding-frågor och analyserar skillnader i barns svarsmonster på dessa frågor under digitala berättaraktiviteter.

Teori och Metod

Forskningen utgår ifrån teorin Lekresponsiv undervisning (LRU) eller på engelska Play-Responsive Early Childhood Education and Care (PRECEC) och anpassar aspekter av Design-Based Research (DBR) för att undersöka hur undervisning i förskolan kan vara responsiv gentemot två-/flerspråkiga barns semiotiska repertoarer och stödja deras deltagande i aktiviteter med digital teknik. Studien är förankrad i ett sociokulturellt perspektiv och betonar iterativa, samarbetande och kontextkänsliga forskningsmetoder. Data genererades genom video- och skärmspelningar, intervjuer och fältanteckningar. Dessa analyserades med hjälp av interaktionsanalys (IA) för att studera samspelet mellan lärare, barn och digitala verktyg i detalj (Jordan & Henderson, 1995). Studien genomfördes vid två internationella förskolor i Sverige, där både lärare och barn hade varierande språkliga och kulturella bakgrunder. Detta skapade en rik kontext för att undersöka flerspråkighet och digitalt berättande.

I avhandlingen användes en flexibel DBR-ansats för att utforma och genomföra digitala berättaraktiviteter med fokus på samarbete mellan forskare och lärare. Forskningen ställdes inför utmaningar som begränsad tid för fältstudier, skillnader mellan de deltagande förskolorna och behovet av att iterativt anpassa aktiviteterna efter de praktiska förutsättningarna. Etiska överväganden hanterades noggrant genom att involvera lärare som var bekanta med verksamheten i aktiviteterna, inhämta informerat samtycke från föräldrar och säkerställa deltagarnas anonymitet. Även om generaliserbarheten är begränsad av de specifika kontexterna för de internationella förskolor som studerades, ger forskningen värdefulla insikter om responsiva undervisningspraktiker som tar tillvara barns semiotiska resurser och digital teknik för att främja inkludering och lärande. Studien reflekterar även över forskarens roll och lyfter fram vikten av självreflexivitet för att balansera professionella erfarenheter och förutfattade uppfattningar, samtidigt som metodologisk noggrannhet bibehålls.

Artikel 1

Artikeln ”Responding to Children’s Semiotic Repertoires in Collaborative Digital Storytelling” (Shengjergji, Myrendal & Pramling, 2024) undersöker hur undervisning inom förskoleverksamhet (ECEC) kan vara responsiv gentemot två-/flerspråkiga barns semiotiska repertoarer under digitala berättaraktiviteter. Studien fokuserar på forskningsfrågan: Hur introduceras och bemöts olika

semiotiska repertoarer inom digitala berättaraktiviteter i förskolan? Dessutom syftar artikeln till att vidareutveckla LRU:S teori om leksresponsivitet till att inkludera responsivitet gentemot barns semiotiska repertoarer. I detta sammanhang används också transspråkande som ett teoretiskt ramverk, vilket förstås både som en kommunikativ praktik bland flerspråkiga individer och som en pedagogisk strategi för två-/flerspråkig utbildning.

Forskarna analyserade videoinspelningar av aktiviteter där barn och pedagoger interagerade genom digitalt berättande. Genom transkription och analys identifierades hur deltagarna använde sina semiotiska repertoarer, till exempel genom språk, teckenspråk, gester, pekningar, ansiktsuttryck, ljud (onomatopoeia), blickriktning och teckningar. Analysen av pedagogernas respons kan sammanfattas i termer av tre kategorier: bekräftande (reflekterande), uppmanande och utvecklande (prospektiva) samt klagörande och skiftande (koordinativa). Analysen visade att pedagogerna använde transspråkande för att främja lika deltagande och förståelse, särskilt för nybörjare i engelska.

Resultaten visar hur pedagogerna kombinerade olika semiotiska resurser, som att växla mellan engelska och svenska, använda gester, teckenspråk och onomatopoeia, samt koordinera dessa med verbal kommunikation. Denna responsivitet gentemot barns semiotiska repertoarer främjade en inkluderande miljö. Studien visade också att barnen var kompetenta kommunikatörer som aktivt bidrog till aktiviteterna genom transspråkande, inklusive pekningar, ljud, gester och ansiktsuttryck. Alla deltagande barn använde flera semiotiska modaliteter i sitt meningsskapande.

Slutligen diskuteras begreppet jämlikt deltagande, där det argumenteras för att jämlikhet inte innebär att alla bidrar på samma sätt. Artikeln framhäver vikten av att pedagoger erkänner och bemöter barns mångfald av semiotiska resurser för att stötta deras deltagande och hantera sociala orättvisor kopplade till olika språkliga och erfarenhetsmässiga bakgrunder. Pedagoger uppmanas att använda sina egna semiotiska repertoarer för att skapa rättvisa och meningsfulla lärandesituationer.

Artikel 2

Artikeln "Yeah, I am making new stuff!": Responsivity to and Negotiations of Agency during Digital Storytelling in Preschool" (Shengjergji, 2024) undersöker hur barns agens uttrycks under digitala berättaraktiviteter och hur pedagoger svarar på detta. Forskningsfrågorna är: a) Hur kommer barns agens till uttryck under digitala berättaraktiviteter? och b) Hur möjliggör pedagogernas respons för och

leder till förhandlingar kring barns agens? Studien bygger på LRU som teoretiskt ramverk och en sociokulturell förståelse av agens. Videoinspelade aktiviteter analyseras med hjälp av Interaktionsanalys (IA). Till skillnad från många studier där barns agens utforskas i situationer med minimal vuxennärvaro, fokuserar denna studie på vuxendesignade aktiviteter, vilket bidrar med nya insikter.

I analysen identifierades och kategoriserades barns uttryck av agens genom initiativtagande, uttryck av preferenser och tankar samt genom att påverka utvecklingen av berättaraktiviteterna. Ytterligare analys klargjorde processer av intersubjektivitet (när deltagarna visade ömsesidig förståelse) och alteritet (när deltagarna förändrade aktivitetens riktning). Resultaten visar att barns agens blev tydlig genom att de introducerade nya karaktärer och förändrade berättelsens handling, förhandlade betydelsen av sina teckningar och utforskade applikationens designmöjligheter.

Pedagogernas roll framhölls som central för att möjliggöra barns agens genom att ställa frågor, bjuda in barnen att testa sina idéer, acceptera mångtydiga tolkningar av barnens skapelser och hjälpa dem med digitala verktyg. Pedagogerna visade responsivitet genom att uppmuntra barnens "vad händer om"-tänkande, påminna dem om tidigare förslag, och underlätta berättandets utveckling. Därigenom stimulerades barnens deltagande och förmåga att påverka aktiviteten. Studien visar att denna typ av responsivitet kan stödja barns agens även i aktiviteter med en förbestämd struktur.

Artikeln argumenterar att barns agens är en dynamisk process som uppstår i interaktion med lärare, kamrater och kulturella verktyg, som surfplattor och applikationen, i detta fall Book Creator. Studien kopplar resultaten till LRU:s teori genom att visa hur responsiv undervisning kan stödja barns agens vid användning av digitala teknologier. Dessutom framhäver studien att även om digitala verktyg ger öppna designmöjligheter, fungerar de som medierande verktyg i samspelet mellan barn, lärare och kamrater snarare än att ensamt forma barns agens.

Artikel 3

Artikeln "Scaffolding and Triggering: Teachers' Questions and Children's Response Patterns during Digital Storytelling Activities in Preschool" (Shengjergji, Myrendal & Pramling, manus) undersöker pedagogers frågor och barns svarsmönster under digitala berättaraktiviteter i förskolan. Studien bygger på LRU-teorin och kategoriserar pedagogers frågor som antingen scaffolding (stöttande frågor som begränsar svarsalternativen) eller triggering (utmanande frågor som

möjliggör oväntade och fantasifulla svar). Forskningsfrågorna är: a) Vilka processer av barns narrativa produktion stöds av pedagogers scaffolding- och triggeringsfrågor? och b) Vilka skillnader, om några, finns i barns svarsmönster på dessa frågor?

Videoinspelningar av aktiviteter analyserades genom att transkribera och koda förekomsten av scaffolding- och triggeringsfrågor samt barns svar, både verbala och icke-verbala (som gester och blickriktning). Retoriska frågor exkluderades från analysen. Totalt identifierades 993 frågor, fördelade på 377 scaffolding-frågor, 238 triggeringsfrågor och 378 frågor relaterade till att hantera aktivitetsflödet. Pedagogerna växlade mellan scaffolding- och triggeringsfrågor för att stötta barnens narrativa produktion, särskilt genom att a) uppmuntra fantasi och utveckla berättelsens handling samt b) skapa sammanhang där berättelsens händelser förbinds på ett meningsfullt sätt snarare än slumpmässigt. Pedagogernas val av frågor visade sig bero på deras uppfattning om barnens förmåga att delta i den typ av dialog som frågorna främjade.

Artikeln betonar vikten av att behandla frågor som interaktiva fenomen. Även om forskare ofta förespråkar öppna frågor för att främja barns språkproduktion, argumenterar studien att detta inte är en universallösning. Effektiviteten i en frågestrategi beror snarare på pedagogens förmåga att anpassa sig till och vara responsiv gentemot barnens förståelse och lärandeprocesser. Studien visar att skiftningar mellan scaffolding- och triggeringsfrågor är avgörande, då varje frågetyp har en unik och kompletterande roll i att utveckla barnens berättarförmågor.

Avslutningsvis framhäver artikeln att den bidrar med viktiga insikter om hur digitala teknologier kan användas pedagogiskt i förskolan. Den fyller en kunskapslucka genom att ge praktiska exempel på vad som kännetecknar högkvalitativa pedagogiska strategier med teknologier i undervisning för yngre barn. Detta stärker förståelsen för hur teknologier som digitala berättarverktyg kan integreras för att stödja barnens narrativa och kreativa färdigheter.

Diskussion

I detta avsnitt presenteras och diskuteras avhandlingens viktigaste fynd i relation till tidigare forskning, LRU(PRECEC)-teorin och pedagogiska implikationer.

Fynden visar att lärare uppvisade responsivitet genom att uppmärksamma både verbala och icke-verbala bidrag från barnen, exempelvis genom att imitera deras handlingar, ställa frågor om modersmål, använda gester och växla mellan språk.

Transspråkande framhövdes som en central strategi där lärare och barn använde flera semiotiska resurser som verbalspråk, gester, teckenspråk och onomatopoeia. Genom att erkänna och värdesätta barns olika sätt att kommunicera främjade dessa strategier deras deltagande och utmanade samtidigt enspråkiga och monokulturella normer som ofta exkluderar flerspråkiga barn. Studien visar att även barn som är i tidiga stadier av att lära sig majoritetsspråket (svenska) kan vara skickliga kommunikatörer som använder transspråkande för att engagera sig och bidra i aktiviteterna. Genom att erkänna och värdesätta barns olika sätt att kommunicera främjade dessa strategier deras deltagande och utmanade samtidigt enspråkiga och monokulturella normer som ofta exkluderar flerspråkiga barn. Studien visar att även barn som är i tidiga stadier av att lära sig majoritetsspråket (svenska) kan vara skickliga kommunikatörer som använder translanguaging/transspråkande för att engagera sig och bidra i aktiviteterna.

Vidare visade resultaten hur lärare stödde barns deltagande genom digital teknik, särskilt genom att använda digitala verktyg som möjliggjorde olika sätt att bidra. Lärare hjälpte barn att skapa berättelser genom att växla mellan så kallade scaffolding- och triggering-frågor, där de antingen guidade barnen eller stimulerade deras fantasi och berättande. Den öppna designen i applikationer som Book Creator framstod som en nyckelfaktor för att främja barnens kreativitet och delaktighet, men lärarens roll i att vägleda och mediera teknikanvändningen var avgörande för hur barnen tog sig an uppgiften att skapa en berättelse. Lärarnas praktik gav utrymme för barnens berättande, fantasifulla tänkande och agens, vilket visade hur teknologin kan användas för att stödja barns narrativa och kreativa förmågor.

Genom att koppla dessa resultat till LRU-teorin vidareutvecklas och breddas begreppet responsivitet för att omfatta alla semiotiska resurser som barn använder. Studien lyfter även fram barns agens som en dynamisk och relationell process som växer fram och formas i samspelet med lärare, kamrater och kulturella verktyg. Analysen av lärares pedagogiska praktik, såsom transspråkande och användning av scaffolding- och triggering-frågor, ger konkreta exempel på hur barnens agens kan stödjas och stärkas. Resultaten visar också att en balanserad användning av olika frågetyper är viktig för att anpassa undervisningen efter barnens individuella behov och förmågor.

Slutligen kopplas avhandlingens fynd till social och kulturell hållbarhet genom att framhäva vikten av att erkänna barns olika sätt att delta och kommunicera. Lärare visade sig vara responsiva gentemot flerspråkiga barns semiotiska repertoarer genom transspråkande praktiker som inkluderade skiftningar mellan

språk, användning av gester och andra semiotiska resurser. Dessa praktiker legitimerade barnens olika uttryckssätt och skapade inkluderande miljöer där alla barn kunde delta och förstås, oavsett språklig bakgrund. Transspråkande framställs här som en pedagogisk strategi för social rättvisa som aktivt främjar social och kulturell hållbarhet i förskolan.

Dessa insikter ger också praktiska implikationer, där lärare uppmanas att reflektera över sina egna antaganden och förhållningssätt och anta en responsiv undervisningsstrategi som behandlar alla barns sätt att kommunicera som legitima och värdefulla. Dessutom betonas vikten av att använda digitala teknologier på ett genomtänkt sätt för att stimulera barnens kreativitet och deltagande, samtidigt som lärarens roll som medlare mellan teknologin och barnens lärande framhålls. Denna avhandling bidrar därmed till att skapa en djupare förståelse för hur inkluderande och hållbara lärandemiljöer kan utformas med stöd av både pedagogiska metoder och digital teknik.

Bibliography

- Adami, R., & Lyngbäck, L. A. (2024). Enabling multilingualism or disabling multilinguals? Interrogating linguistic discrimination in Swedish preschool policy. *Human Rights Education Review*, 7(1), 5–25. <http://doi.org/10.7577/hrer.5274>
- Ahearn, L. M. (2001). Language and agency. *Annual Review of Anthropology*, 30(1), 109–137.
- Alamillo, L., Yun, C., & Bennett, L. H. (2017). Translanguaging in a Reggio-inspired Spanish dual-language immersion programme. *Early Child Development and Care*, 187(3–4), 469–486. <https://doi.org/10.1080/03004430.2016.1236091>
- Alanís, I. (2018). Enhancing collaborative learning: Activities and structures in a dual language preschool classroom. *Association of Mexican American Educators Journal*, 12(1), 5–26. <https://doi.org/10.24974/amae.12.1.375>
- Alderson, P., & Yoshida, T. (2016). Meanings of children’s agency. When and where does agency begin and end? In F. Esser, M. S. Baader, T. Betz & B. Hungerland (Eds.), *Reconceptualising agency and childhood* (pp. 75–88). Routledge.
- Aldhafeeri, F., Palaiologou, I., & Folorunsho, A. (2016). Integration of digital technologies into play-based pedagogy in Kuwaiti early childhood education: Teachers’ views, attitudes and aptitudes. *International Journal of Early Years Education*, 24(3), 342–360. <https://doi.org/10.1080/09669760.2016.1172477>
- Alstad, G. T., & Mourão, S. (2021). Research into multilingual issues in ECEC contexts: Proposing a transdisciplinary research field. *European Early Childhood Education Research Journal*, 29(3), 319–335. <https://doi.org/10.1080/1350293X.2021.1928845>
- Anderson, J., Chung, Y. C., & Macleroy, V. (2018). Creative and critical approaches to language learning and digital technology: Findings from a multilingual digital storytelling project. *Language and Education*, 32(3), 195–211. <https://doi.org/10.1080/09500782.2018.1430151>
- Anderson, T., & Shattuck, J. (2012). Design-based research: A decade of progress in education research?. *Educational researcher*, 41(1), 16–25. <https://doi.org/10.3102/0013189X11428813>
- Arnott, L. (2016). An ecological exploration of young children’s digital play: framing children’s social experiences with technologies in early childhood. *Early Years*, 36(3), 271–288.
- Axelrod, Y. (2017). “Ganchulinas” and “Rainbowli” colors: Young multilingual children play with language in head start classroom. *Early Childhood Education Journal*, 45, 103–110. <https://doi.org/10.1007/s10643-014-0631-z>
- Baker, M. (2019). Playing, talking, co-constructing: Exemplary teaching for young dual language learners across program types. *Early Childhood Education Journal*, 47(1), 115–130. <https://doi.org/10.1007/s10643-018-0903-0>
- Bakhtin, M. (1981). *The dialogic imagination: Four essays* (C. Emerson & M. Holquist, Trans.). University of Texas Press.
- Bakhtin, M. M. (1986). The problem of speech genres. In C. Emerson & M. Holquist (Eds.), *Speech genres and other late essays* (pp. 60–102). University of Texas Press.

- Ballinger, S., Lyster, R., Sterzuk, A. & Genesee, F. (2017). Context-appropriate crosslinguistic pedagogy: Considering the role of language status in immersion education. *Journal of Immersion and Content-Based Language Education*, 5, 30–57. <https://doi.org/10.1075/jicb.5.1.02bal>
- Barab, S., & Squire, K. (2004). Design-based research: Putting a stake in the ground. *The journal of the learning sciences*, 13(1), 1–14. http://dx.doi.org/10.1207/s15327809jls1301_1
- Bascopé, M., Perasso, P., & Reiss, K. (2019). Systematic review of education for sustainable development at an early stage: Cornerstones and pedagogical approaches for teacher professional development. *Sustainability*, 11(3), 719. <https://doi.org/10.3390/su11030719>
- Bengochea, A., & Gort, M. (2022). Translanguaging for varying discourse functions in sociodramatic play: an exploratory multiple case study of young emergent bilinguals. *International Journal of Bilingual Education and Bilingualism*, 25(5), 1697–1712. <https://doi.org/10.1080/13670050.2020.1799319>
- Bengochea, A., Sembiente, S. F., & Gort, M. (2018). An emergent bilingual child's multimodal choices in sociodramatic play. *Journal of Early Childhood Literacy*, 18(1), 38–70. <https://doi.org/10.1177/1468798417739081>
- Bergan, V., Krempig, I. W., Utsi, T. A., & Bøe, K. W. (2021). I want to participate—communities of practice in foraging and gardening projects as a contribution to social and cultural sustainability in early childhood education. *Sustainability*, 13(8), 4368. <https://doi.org/10.3390/su13084368>
- Bergroth, M., & Palviainen, Å. (2017). Bilingual children as policy agents: Language policy and education policy in minority language medium Early Childhood Education and Care. *Multilingua*, 36(4), 375–399. <https://doi.org/10.1515/multi-2016-0026>
- Bertram, T., Formosinho, J., Gray, C., Pascal, C., & Whalley, M. (2015). EECERA Ethical Code for Early Childhood Researchers. EECERA, <https://www.eecera.org/wp-content/uploads/2016/07/EECERA-Ethical-Code.pdf>
- Bigger, S., & Webb, J. (2010). Developing environmental agency and engagement through young people's fiction. *Environmental Education Research*, 16(3-4), 401–414. <https://doi.org/10.1080/13504621003613145>
- Bird, J. (2020). 'You need a phone and camera in your bag before you go out!': Children's play with imaginative technologies. *British Journal of Educational Technology*, 51(1), 166–176. <https://doi.org/10.1111/bjet.12791>
- Blackledge, A., & Creese, A. (2017). Translanguaging and the body. *International Journal of Multilingualism*, 14(3), 250–268. <https://doi.org/10.1080/14790718.2017.1315809>
- Blum-Kulka, S., & Gorbatt, N. (2014). "Say princess": The challenges and affordances of young Hebrew L2 novices' interaction with their peers. In A. Cekaite, S. Blum-Kulka, V. Grover, & E. Teubal (Eds.), *Children's peer talk: Learning from each other* (pp. 169–193). Cambridge University Press.
- Boldermo, S., & Ødegaard, E. E. (2019). What about the migrant children? The state-of-the-art in research claiming social sustainability. *Sustainability*, 11(2), 459. <https://doi.org/10.3390/su11020459>
- Bourbour, M. (2023). Using digital technology in early education teaching: learning from teachers' teaching practice with interactive whiteboard. *International Journal of Early Years Education*, 31(1), 269–286. <https://doi.org/10.1080/09669760.2020.1848523>

- Boyd, S., Huss, L., & Ottesjö, C. (2017). Children's agency in creating and maintaining language policy in practice in two "language profile" preschools in Sweden. *Multilingua*, 36(4), 501–531. <https://doi.org/10.1515/multi-2016-0024>
- Boström, M. (2012). A missing pillar? Challenges in theorizing and practicing social sustainability: introduction to the special issue. *Sustainability: Science, practice and policy*, 8(1), 3–14. <https://doi.org/10.1080/15487733.2012.11908080>
- Broström, S. (2012). Curriculum in preschool: Adjustment or a possible liberation? *Nordisk barnehageforskning*, 5(1). <https://doi.org/10.7577/nbf.419>
- Brown, A. L. (1992). Design Experiments: Theoretical and Methodological Challenges in Creating Complex Interventions in Classroom Settings. *The Journal of the Learning Sciences*, 2(2), 141–178. https://doi.org/10.1207/s15327809jls0202_2
- Caiman, C., & Lundegård, I. (2014). Pre-school children's agency in learning for sustainable development. *Environmental Education Research*, 20(4), 437–459. <https://doi.org/10.1080/13504622.2013.812722>
- Canals, L. (2021). Multimodality and translanguaging in negotiation of meaning. *Foreign Language Annals*, 54(3), 647–670. <https://doi.org/10.1111/flan.12547>
- Canagarajah, A. S. (2007). The Ecology of Global English. *International Multilingual Research Journal*, 1(2), 89–100. <https://doi.org/10.1080/15257770701495299>
- Canagarajah, S. (2011). Codemeshing in Academic Writing: Identifying Teachable Strategies of Translanguaging. *The Modern Language Journal (Boulder, Colo.)*, 95(3), 401–417. <https://doi.org/10.1111/j.1540-4781.2011.01207.x>
- Canagarajah, S. (2012). *Translingual practice: Global Englishes and cosmopolitan relations*. Routledge.
- Canagarajah, S. (2021). Materialising semiotic repertoires: challenges in the interactional analysis of multilingual communication. *International Journal of Multilingualism*, 18(2), 206–225. <https://doi.org/10.1080/14790718.2021.1877293>
- Cekaite, A., & Evaldsson, A. C. (2017). Language policies in play: Learning ecologies in multilingual preschool interactions among peers and teachers. *Multilingua*, 36(4), 451–475. <https://doi.org/10.1515/multi-2016-0020>
- Cenoz, J., & Gorter, D. (2021). *Pedagogical translanguaging*. Cambridge University Press.
- Clark, A., & Moss, P. (2011). *Listening to young children: The mosaic approach*. Jessica Kingsley Publishers.
- Cobb, P., Confrey, J., diSessa, A., Lehrer, R., & Schauble, L. (2003). Design Experiments in Educational Research. *Educational Researcher*, 32(1), 9–13. <https://doi.org/10.3102/0013189X032001009>
- Cole, A. L., & Knowles, J. G. (1993). Teacher Development Partnership Research: A Focus on Methods and Issues. *American Educational Research Journal*, 30(3), 473–495. <https://doi.org/10.3102/00028312030003473>
- Collins, A. (1992). Toward a design science of education. In *New directions in educational technology* (pp. 15–22). Springer.
- Committee on Culture. (2015). *Culture 21: Actions commitments on the role of culture in sustainable cities*. http://agenda21culture.net/sites/default/files/files/culture21-actions/c21_015_en.pdf
- Corsaro, W. A. (2005). *The sociology of childhood* (2nd ed.). Sage Publications.

- Creese, A., & Blackledge, A. (2011). Separate and flexible bilingualism in complementary schools: Multiple language practices in interrelationship. *Journal of Pragmatics*, 43(5), 1196–1208. <https://doi.org/10.1016/j.pragma.2010.10.006>
- Cummins, J. (2017a). Teaching for transfer in multilingual educational contexts. In O. García and A. Lin (eds) *Bilingual Education: Encyclopedia of Language and Education* (3rd edn) (pp.103–115). New York: Springer Science Business Media LLC.
- Cummins, J. (2017). Teaching Minoritized Students: Are Additive Approaches Legitimate? *Harvard Educational Review*, 87(3), 404–425. <https://doi.org/10.17763/1943-5045-87.3.404>
- Cummins, J. (2019). The emergence of translanguaging pedagogy: A dialogue between theory and practice. *Journal of Multilingual Education Research*, 9(13), 19–36.
- Cummins, J. (2021). Translanguaging: A critical analysis of theoretical claims. In *Pedagogical translanguaging: Theoretical, methodological and empirical perspectives*, 7–36. <https://doi.org.ezproxy.ub.gu.se/10.21832/9781788927383-004>
- Davis, J. (2008). What might education for sustainability look like in early childhood education: A case for participatory, whole-of-settings approaches. In I. Pramling Samuelsson & Y. Kaga (Eds.), *The contribution of early childhood education to a sustainable society* (pp. 18–24). UNESCO.
- Davis, N., Harris, L., & Cunningham, U. (2019). Professional ecologies shaping technology adoption in early childhood education with multilingual children. *British Journal of Educational Technology*, 50(3), 1320–1339. <https://doi.org/10.1111/bjjet.12774>
- Dede, C. (2004). If Design-Based Research is the Answer, What is the Question? A Commentary on Collins, Joseph, and Bielaczyc; diSessa and Cobb; and Fishman, Marx, Blumenthal, Krajcik, and Soloway in the JLS Special Issue on Design-Based Research. *The Journal of the Learning Sciences*, 13(1), 105–114. https://doi.org/10.1207/s15327809jls1301_5
- Derry, S. J., Pea, R. D., Barron, B., Engle, R. A., Erickson, F., Goldman, R., Hall, R., Koschmann, T., Lemke, J. L., Sherin, M. G., & Sherin, B. L. (2010). Conducting Video Research in the Learning Sciences: Guidance on Selection, Analysis, Technology, and Ethics. *The Journal of the Learning Sciences*, 19(1), 3–53. <https://doi.org/10.1080/10508400903452884>
- de Rivera, C., Girolametto, L., Greenberg, J., & Weitzman, E. (2005). Children’s responses to educators’ questions in day care play groups. *American Journal of Speech-Language Pathology*, 14(1), 14–26. [https://doi.org/10.1044/1058-0360\(2005/04\)](https://doi.org/10.1044/1058-0360(2005/04))
- de Sousa, E. B. C. (2017). Promoting the contributions of multilingual preschoolers. *Linguistics and Education*, 39, 1–13. <https://doi.org/10.1016/j.linged.2017.04.001>
- diSessa, A. A., & Cobb, P. (2004). Ontological Innovation and the Role of Theory in Design Experiments. *The Journal of the Learning Sciences*, 13(1), 77–103. https://doi.org/10.1207/s15327809jls1301_4
- Disney, L., Barnes, A., Ey, L., & Geng, G. (2019). Digital play in young children’s numeracy learning. *Australasian Journal of Early Childhood*, 44(2), 166–181. <https://doi.org/10.1177/1836939119832084>
- Dong, C. (2018). Preschool teachers’ perceptions and pedagogical practices: Young children’s use of ICT. *Early Child Development and Care*, 188(6), 635–650. <https://doi.org/10.1080/03004430.2016.1226293>

- Drieschner, E., and W. Smidt. (2023). "Agency and Participation: A Critique of the Epistemological, Psychological, Pedagogical, and Ethical Premises." In *Institutions and Organizations as Learning Environments for Participation and Democracy: Opportunities, Challenges, Obstacles*, edited by R. Spannring, W. Smidt, and C. Unterrainer, 17–37. Springer.
- Dubiner, D., Deeb, I., & Schwartz, M. (2018). "We are creating a reality": teacher agency in early bilingual education. *Language, Culture, and Curriculum*, 31(3), 255–271. <https://doi.org/10.1080/07908318.2018.1504399>
- Edwards, A. (2007). Relational agency in professional practice: A CHAT analysis. *Actio: An International Journal of Human Activity Theory*, 1(3), 1–17.
- Edwards, S., Mantilla, A., Grieshaber, S., Nuttall, J., & Wood, E. (2020). Converged play characteristics for early childhood education: multi-modal, global-local, and traditional-digital. *Oxford Review of Education*, 46(5), 637–660. <https://doi.org/10.1080/03054985.2020.1750358>
- Eizenberg, E., & Jabareen, Y. (2017). Social sustainability: A new conceptual framework. *Sustainability*, 9(1), 68. <https://doi.org/10.3390/su9010068>
- Elbers, E., Rojas-Drummond, S., & van de Pol, J. (2013). Conceptualising and grounding scaffolding in complex educational contexts. *Learning, Culture and Social Interaction*, 2(1), 1–2. <https://doi.org/10.1016/j.lcsi.2012.12.002>
- Emirbayer, M., & Mische, A. (1998). "What is Agency?" *American Journal of Sociology*, 103 (4), 962–1023. <https://doi.org/10.1086/231294>
- Engeström, Y. (2011). From design experiments to formative interventions. *Theory & Psychology*, 21(5), 598–628. <https://doi.org/10.1177/0959354311419252>
- Esser, F. (2016). Neither "thick" nor "thin": Reconceptualising agency and childhood. In F. Esser, M. S. Baader, T. Betz, & B. Hungerland (Eds.), *Reconceptualising agency and childhood: New perspectives in childhood studies* (pp. 48–60). Routledge.
- Fantozzi, V. B., Johnson, C., & Scherfen, A. (2018). One Classroom, One iPad, Many Stories. *The Reading Teacher*, 71(6), 681–689.
- Fisher, R. (2010). Young writers' construction of agency. *Journal of Early Childhood Literacy*, 10(4), 410–429. <https://doi.org/10.1177/1468798410382407>
- Fleer, M. (2011). 'Conceptual play': foregrounding imagination and cognition during concept formation in early years education. *Contemporary Issues in Early Childhood*, 12(3), 224–240. <https://doi.org/10.2304/ciec.2011.12.3.224>
- Fleer, M. (2017). Digital role-play: The changing conditions of children's play in preschool settings. *Mind, Culture, and Activity*, 24(1), 3–17. <https://doi.org/10.1080/10749039.2016.1247456>
- Fleer, M. (2019). Digitally amplified practices: Beyond binaries and towards a profile of multiple digital coadjuvants. *Mind, Culture, and Activity*, 26(3), 207–220. <https://doi.org/10.1080/10749039.2019.1646289>
- Fleer, M. (2020). Digital Peer Play: Meta-imaginary Play Embedded in Early Childhood Play-Based Settings. In *Peer Play and Relationships in Early Childhood* (pp. 45–59). Springer.
- Fleer, M. (2020). Digital pop-ups: Studying digital pop-ups and theorising digital pop-up pedagogies for preschools. *European Early Childhood Education Research Journal*, 28(2), 214–230. <https://doi.org/10.1080/1350293X.2020.1735741>

- Fleer, M., & Pramling, N. (2015). *A cultural-historical study of children learning science: Foregrounding affective imagination in play-based settings* (Cultural Studies of Science Education, 11). Dordrecht, the Netherlands: Springer.
- Flewitt, R., & Ang, L. (2020). *Research methods for early childhood education*. Bloomsbury Academic.
- Flores, N. (2014, July 19). Let's not forget that translanguaging is a political act [web log post]. Retrieved from <http://educationallinguist.wordpress.com/2014/07/19/lets-notforget-that-translanguaging-is-a-political-act/>
- Flores, N. & Rosa, J. (2015). Undoing Appropriateness: Raciolinguistic Ideologies and Language Diversity in Education. *Harvard Educational Review*, 85(2), 149–171. <https://doi.org/10.17763/0017-8055.85.2.149>
- Flynn, E. E., Hoy, S. L., Lea, J. L., & García, M. A. (2021). Translanguaging through story: Empowering children to use their full language repertoire. *Journal of Early Childhood Literacy*, 21(2), 283–309. <https://doi.org/10.1177/1468798419838569>
- Fotakopoulou, O., Hatzigianni, M., Dardanou, M., Unstad, T., & O'Connor, J. (2020). A cross-cultural exploration of early childhood educators' beliefs and experiences around the use of touchscreen technologies with children under 3 years of age. *European Early Childhood Education Research Journal*, 28(2), 272–285. <https://doi.org/10.1080/1350293X.2020.1735744>
- Fortune, T. W., & Tedick, D. J. (2019). 2. Context Matters: Translanguaging and Language Immersion Education in the US and Canada. In M. Haneda & H. Nassaji (Eds.), *Perspectives on Language as Action* (pp. 27-44). Bristol, Blue Ridge Summit: Multilingual Matters. <https://doi-org.ezproxy.ub.gu.se/10.21832/9781788922944-005>
- García, O. (2009). *Bilingual education in the 21st century: A global perspective*. Wiley- Blackwell.
- García, O. (2023). Translanguaged TESOL in transit. *NYS TESOL Journal*, 10(1).
- García, O., Johnson, S. & Seltzer, K. (2017). *The Translanguaging Classroom: Leveraging student bilingualism for learning*. Caslon.
- García, O. & Kano, N. (2014). Translanguaging as Process and Pedagogy: Developing the English Writing of Japanese Students in the US. In J. Conteh & G. Meier (Eds.), *The Multilingual Turn in Languages Education: Opportunities and Challenges* (pp. 258–277). Multilingual Matters. <https://doi-org.ezproxy.ub.gu.se/10.21832/9781783092246-018>
- García, O., & Kleifgen, J. A. (2020). Translanguaging and literacies. *Reading research quarterly*, 55(4), 553–571. <https://doi.org/10.1002/rrq.286>
- García, O., & Li Wei (2014). *Translanguaging: Language, bilingualism and education*. Palgrave Macmillan Pivot.
- Gorter, D., & Cenoz, J. (2017). Language education policy and multilingual assessment. *Language and Education*, 31(3), 231–248. <https://doi.org/10.1080/09500782.2016.1261892>
- Gort, M., & Sembante, S. (2015). Navigating hybridized language learning spaces through translanguaging pedagogy: Dual language preschool teachers' languaging practices in support of emergent bilingual children's performance of academic discourse. *International Multilingual Research Journal*, 9(6), 7–25. <https://doi.org/10.1080/19313152.2014.981775>
- Gravemeijer, K., & Cobb, P. (2006). Design research from a learning design perspective. In *Educational design research* (pp. 29–63). Routledge.

- Grin, F. (2018). On some fashionable terms in multilingualism research: Critical assessment and implications for language policy. In P.A. Kraus and F. Grin (eds) *The Politics of Multilingualism: Europeanisation, Globalization and Linguistic Governance* (pp. 247–274). Amsterdam: John Benjamins Publishing Company.
- Grindheim, L. T., Bakken, Y., Hauge, K. H., & Heggen, M. P. (2019). Early childhood education for sustainability through contradicting and overlapping dimensions. *ECNU Review of Education*, 2(4), 374–395. <https://doi.org.ezproxy.ub.gu.se/10.1177/2096531119893479>
- Grosjean, F. (1989). Neurolinguists, beware! The bilingual is not two monolinguals in one person. *Brain and language*, 36(1), 3–15.
- Gutiérrez, K. D., Baquedano-López, P., & Tejada, C. (1999). Rethinking diversity: Hybridity and hybrid language practices in the third space. *Mind, Culture and Activity*, 6(4), 286–303. <https://doi.org/10.1080/10749039909524733>
- Hamilton, D. (1999). The pedagogic paradox (or why no didactics in England?). *Pedagogy, Culture & Society*, 7(1), 135–152. <https://doi.org/10.1080/14681369900200048>
- Hart, R. (1992). *Children's Participation: From Tokenism to Citizenship*. UNICEF.
- Hatzigianni, M. (2018). Transforming early childhood experiences with digital technologies. *Global Studies of Childhood*, 8(2), 173–183. <https://doi.org/10.1177/2043610617734987>
- Hatzigianni, M., Stevenson, M., Bower, M., Falloon, G., & Forbes, A. (2020). Children's views on making and designing. *European Early Childhood Education Research Journal*, 28(2), 286–300. <https://doi.org/10.1080/1350293X.2020.1735747>
- Hawkes, J. (2001). *The fourth pillar of sustainability: Culture's essential role in public planning*. Common Ground.
- Heller, M. (2006). *Linguistic minorities and modernity: A sociolinguistic ethnography* (2nd ed.). London, UK: A & C Black.
- Hernwall, P. (2016). 'We have to be professional'—Swedish preschool teachers' conceptualisation of digital media. *Nordic journal of digital literacy*, 11(1), 5–23. <https://doi.org/10.18261/issn.1891-943x2016-01-01>
- Highfield, K., Paciga, K. A., & Donohue, C. (2018). Supporting whole child development in the digital age. In *Digital Childhoods* (pp. 165–182). Springer.
- Hofslundsengen, H., Magnusson, M., Svensson, A.-K., Jusslin, S., Mellgren, E., Hagtvet, B. E., & Heilä-Ylikallio, R. (2020). The literacy environment of preschool classrooms in three Nordic countries: challenges in a multilingual and digital society. *Early Child Development and Care*, 190(3), 414–427. <https://doi.org/10.1080/03004430.2018.1477773>
- Horgan, D., Forde, C., Martin, S., & Parkes, A. (2017). Children's participation: moving from the performative to the social. *Children's Geographies*, 15(3), 274–288. <https://doi.org.ezproxy.ub.gu.se/10.1080/14733285.2016.1219022>
- Houen, S., Danby, S., Farrell, A., & Thorpe, K. (2016). 'I wonder what you know...' teachers designing requests for factual information. *Teaching and Teacher Education*, 59, 68–78. <https://doi.org/10.1016/j.tate.2016.02.002>
- Huf, C. (2013). Children's agency during transition to formal schooling. *Ethnography and Education*, 8(1), 61–76. <https://doi.org/10.1080/17457823.2013.766434>

- Iversen, E., & Jónsdóttir, G. (2018). A Bit More than a Fly on the Wall: Roles and Responsibilities in Design-Based Research. *Designs for Learning*, 10(1), 18–28. <https://doi.org/10.16993/dfl.79>
- Jack, C., & Higgins, S. (2019). What is educational technology and how is it being used to support teaching and learning in the early years? *International Journal of Early Years Education*, 27(3), 222–237. <https://doi.org/10.1080/09669760.2018.1504754>
- Jacquemet, M. (2005). Transidiomatic practices: Language and power in the age of globalization. *Language & Communication*, 25(3), 257–277. <https://doi.org/10.1016/j.langcom.2005.05.001>
- James, A., Jenks, C., & Prout, A. (1998). *Theorizing childhood*. Polity Press.
- Jaspers, J. (2018). The transformative limits of translanguaging. *Language & Communication*, 58, 1–10. <https://doi.org/10.1016/j.langcom.2017.12.001>
- Johnston, K. (2019). Digital technology as a tool to support children and educators as co-learners. *Global Studies of Childhood*, 9(4), 306–317. <https://doi.org/10.1177/2043610619871571>
- Jordan, B., & Henderson, A. (1995). Interaction Analysis: Foundations and Practice. *The Journal of the Learning Sciences*, 4(1), 39–103. https://doi.org/10.1207/s15327809jls0401_2
- Jorgensen, J. N. (2008). Polylingual Linguaging Around and Among Children and Adolescents. *International Journal of Multilingualism*, 5(3), 161–176. <https://doi.org/10.1080/14790710802387562>
- Kangas, J., Sundstedt, M., Kaihoviirta, H., & Harju-Luukkainen, H. (2024). "Talking Lion and Bird": Translanguaging and Embodied learning in bilingual ECEC in Finland. *Nordisk barnehageforskning*, 21(1). <https://doi.org/10.23865/nbf.v21.368>
- Kao, Y. T. (2023). Exploring translanguaging in Taiwanese CLIL classes: an analysis of teachers' perceptions and practices. *Language, Culture and Curriculum*, 36(1), 100–121. <https://doi.org/10.1080/07908318.2022.2033762>
- Kaufmann, F. (1944). *Methodology of the social sciences*. Oxford University Press.
- Keirl, S. (2015). 'Seeing' and 'Interpreting' the Human-Technology Phenomenon. In: Williams, P., Jones, A., Bunting, C. (eds) *The Future of Technology Education. Contemporary Issues in Technology Education*. Springer. https://doi.org/10.1007/978-981-287-170-1_2
- Kervin, L., & Mantei, J. (2016). Digital storytelling: capturing children's participation in preschool activities. *Issues in Educational Research*, 26(2), 225–240.
- Kewalramani, S., Arnott, L., & Dardanou, M. (2020). Technology-integrated pedagogical practices: a look into evidence-based teaching and coherent learning for young children. *European Early Childhood Education Research Journal*, 28(2), 163–166. <https://doi.org/10.1080/1350293X.2020.1735739>
- Kewalramani, S., & Havu-Nuutinen, S. (2019). Preschool Teachers' Beliefs and Pedagogical Practices in the Integration of Technology: A Case for Engaging Young Children in Scientific Inquiry. *Eurasia Journal of Mathematics, Science and Technology Education*, 15(12). <https://doi.org/10.29333/ejmste/109949>
- Kirova, A., & Jamison, N. M. (2018). Peer scaffolding techniques and approaches in preschool children's multiliteracy practices with iPads. *Journal of Early Childhood Research*, 16(3), 245–257. <https://doi.org/10.1177/1476718X18775762>

- Kirsch, C. (2017). Translanguaging practices during storytelling with the app iTEO in preschools. *Translation and translanguaging in multilingual contexts*, 3(2), 145–166.
- Kirsch, C. (2020). Opening minds to translanguaging pedagogies. *System (Linköping)*, 92, 102271–11. <https://doi.org/10.1016/j.system.2020.102271>
- Kirsch, C. (2021). Practitioners' language-supporting strategies in multilingual ECE institutions in Luxembourg. *European Early Childhood Education Research Journal*, 29(3), 336–350. <https://doi.org/10.1080/1350293X.2021.1928721>
- Kirsch, C., & Mortini, S. (2023). Engaging in and creatively reproducing translanguaging practices with peers: a longitudinal study with three-year-olds in Luxembourg. *International Journal of Bilingual Education and Bilingualism*, 26(8), 943–959. <https://doi.org/10.1080/13670050.2021.1999387>
- Kleemann, C. (2021). Pedagogical translanguaging to create sustainable minority language practices in kindergarten. *Sustainability*, 13(7), 3613. <https://doi.org/10.3390/su13073613>
- Kleyn, T., & García, O. (2019). Translanguaging as an act of transformation: Restructuring teaching and learning for emergent bilingual students. *The Handbook of TESOL in K-12*, 69–82.
- Knoll, A., & Becker, A. (2023). Children's agency in interactions: how children use language (s) and contribute to the language ecology in Swiss bilingual German-English daycare centres. *International Journal of Multilingualism*, 20(4), 1304–1318. <https://doi.org/10.1080/14790718.2023.2225857>
- Kocaman-Karoglu, A. (2015). Telling stories digitally: an experiment with preschool children. *Educational Media International*, 52(4), 340–352. <https://doi.org/10.1080/09523987.2015.1100391>
- Kolmos, A. (2015). Design-based research—issues in connecting theory, research and practice. In *Research in Engineering Education Symposium*.
- Kozulin, A. (2003). Psychological tools and mediated learning. *Vygotsky's educational theory in cultural context*, 4(6), 15–38.
- Kucirkova, N. (2018). *How and Why to Read and Create Children's Digital Books: A Guide for Primary Practitioners* (p. 200). UCL Press.
- Krcmar, M., & Cingel, D. P. (2014). Parent-child joint reading in traditional and electronic formats. *Media Psychology*, 17(3), 262–281. <https://doi.org/10.1080/15213269.2013.840243>
- Kucirkova, N., Wells Rowe, D., Oliver, L., & Piestrzynski, L. E. (2019). Systematic review of young children's writing on screen: What do we know and what do we need to know. *Literacy*, 53(4), 216–225. <https://doi-org.ezproxy.ub.gu.se/10.1111/lit.12173>
- Kultti, A. (2022). Teaching responsive to play and linguistic diversity in early childhood education: considerations on theoretical grounds. *International Journal of Bilingual Education and Bilingualism*, 25(8), 3037–3045. <https://doi.org/10.1080/13670050.2021.2001426>
- Kultti, A., & Pramling, N. (2015). Limes and Lemons: Teaching and Learning in Preschool as the Coordination of Perspectives and Sensory Modalities. *International Journal of Early Childhood*, 47(1), 105–117. <https://doi.org/10.1007/s13158-015-0130-4>
- Kultti, A., & Pramling, N. (2018). “Behind the Words”: Negotiating Literal/Figurative Sense When Translating the Lyrics to a Children's Song in Bilingual Preschool. *Scandinavian Journal of Educational Research*, 62(2), 200–212. <https://doi.org/10.1080/00313831.2016.1212261>

- Kultti, A., & Pramling, N. (2021). Children's socialisation into literate practices through engaging in translation activities in immersion preschool. *Journal of Early Childhood Literacy*, 21(4), 590–613. <https://doi.org/10.1177/1468798419865602>
- Kusters, A. (2021). Introduction: the semiotic repertoire: assemblages and evaluation of resources. *International Journal of Multilingualism*, 18(2), 183–189. <https://doi.org/10.1080/14790718.2021.1898616>
- Kusters, A., Spotti, M., Swanwick, R., & Tapio, E. (2017). Beyond languages, beyond modalities: transforming the study of semiotic repertoires. *International Journal of Multilingualism*, 14(3), 219–232. <https://doi.org/10.1080/14790718.2017.1321651>
- Lafton, T. (2021). Becoming clowns: How do digital technologies contribute to young children's play? *Contemporary Issues in Early Childhood*, 22(3), 221–231. <https://doi.org/10.1177/1463949119864207>
- Lagerlöf, P., Wallerstedt, C., & Kultti, A. (2019). Barns agency i lekresponsiv undervisning. *Forskning om undervisning och lärande*, 7(1), 44–63.
- Lauricella, A. R., Barr, R., & Calvert, S. L. (2014). Parent–child interactions during traditional and computer storybook reading for children's comprehension: Implications for electronic storybook design. *International Journal of Child-Computer Interaction*, 2(1), 17–25. <https://doi.org/10.1016/j.ijcci.2014.07.001>
- Lawrence, S. M. (2018). Preschool children and iPads: Observations of social interactions during digital play. *Early Education and Development*, 29(2), 207–228. <https://doi.org/10.1080/10409289.2017.1379303>
- Lee, Y., & Kinzie, M. B. (2012). Teacher question and student response with regard to cognition and language use. *Instructional Science*, 40, 857–874. <https://doi.org/10.1007/s11251-011-9193-2>
- Lengyel, D. (2012). Early childhood education in multilingual settings. In *International Handbook of Migration, Minorities and Education* (pp. 169–185). Springer.
- Leonard, M. (2016). *The sociology of children, childhood and generation*. Sage.
- Leung, C. & Valdés, G. (2019). Translanguaging and the transdisciplinary framework for language teaching and learning in a multilingual world. *Modern Language Journal*, 103, 348–70. <https://doi.org/10.1111/modi.12568>
- Li, W. (2018). Translanguaging as a practical theory of language. *Applied Linguistics*, 39(1), 9–30. <https://doi.org/10.1093/applin/amx039>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.
- Linell, P. (2009). *Rethinking language, mind and world dialogically*. Information Age.
- Lisenbee, P. S., & Ford, C. M. (2018). Engaging Students in Traditional and Digital Storytelling to Make Connections Between Pedagogy and Children's Experiences. *Early Childhood Education Journal*, 46(1), 129–139. <https://doi.org/10.1007/s10643-017-0846-x>
- Ljunggren, A. (2016). Multilingual Affordances in a Swedish Preschool: An Action Research Project. *Early Childhood Education Journal*, 44(6), 605–612. <https://doi.org/10.1007/s10643-015-0749-7>
- Makoni, S. and Pennycook, A. (2007). Disinventing and reconstituting languages. In S. Makoni and A. Pennycook (eds) *Disinventing and Reconstituting Languages* (pp. 1–41). Clevedon: Multilingual Matters.

- Marklund, L. (2020). Swedish preschool teachers' experiences from pedagogical use of digital play. *Journal of Early Childhood Education Research*, 9(1), 171–193.
- Mary, L., & Young, A. S. (2017). Engaging with emergent bilinguals and their families in the pre-primary classroom to foster well-being, learning and inclusion. *Language and Intercultural Communication*, 17(4), 455–473. <https://doi.org/10.1080/14708477.2017.1368147>
- Maureen, I. Y., van der Meij, H., & de Jong, T. (2018). Supporting Literacy and Digital Literacy Development in Early Childhood Education Using Storytelling Activities. *International Journal of Early Childhood*, 50(3), 371–389. <https://doi.org/10.1007/s13158-018-0230-z>
- Maureen, I. Y., van der Meij, H., & de Jong, T. (2020). Enhancing Storytelling Activities to Support Early (Digital) Literacy Development in Early Childhood Education. *International Journal of Early Childhood*, 52(1), 55–76. <https://doi.org/10.1007/s13158-020-00263-7>
- McKenney, S., & Brand-Gruwel, S. (2018). Roles and competencies of educational design researchers: One framework and seven guidelines. Eds.: Spector, M., Lockbee, B., Childress, M.): Learning, Design, and Technology. Springer. Cham.
- McKenney, S., & Reeves, T. C. (2018). *Conducting educational design research*. Routledge.
- McPake, J., & Stephen, C. (2016). New technologies, old dilemmas: theoretical and practical challenges in preschool immersion playrooms. *Language and Education*, 30(2), 106–125. <https://doi.org/10.1080/09500782.2015.1103257>
- Meacham, S., Vukelich, C., Han, M., & Buell, M. (2014). Preschool teachers' questioning in sociodramatic play. *Early Childhood Research Quarterly*, 29(4), 562–573. <https://doi.org/10.1016/j.jecresq.2014.07.001>
- Merjovaara, O., Nousiainen, T., Turja, L., & Isotalo, S. (2020). Digital stories with children: Examining digital storytelling as a pedagogical process in ECEC. *Journal of Early Childhood Education Research*, 9(1).
- Meskill, C., Sadykova, G., & Kayumova, A. (2020). Mediating digital screens with very young emerging bilinguals. *Bilingual Research Journal*, 43(2), 137–156. <https://doi.org/10.1080/15235882.2020.1743383>
- Mifsud, C. L., & Vella, L. A. (2018). To mix languages or not? Preschool bilingual education in Malta. In M. Schwartz (Ed.), *Preschool Bilingual Education. Agency in Interactions between Children, Teachers, and Parents* (p. 57–98). Springer.
- Miller, J. L., Paciga, K. A., Danby, S., Beaudoin-Ryan, L., & Kaldor, T. (2017). Looking beyond swiping and tapping: Review of design and methodologies for researching young children's use of digital technologies. *Cyberpsychology*, 11(3). <https://doi.org/10.5817/CP2017-3-6>
- Moinian, F., Kjällander, S., & Dorls, P. (2016). Mother tongue language teaching with digital tablets in early childhood education: A question of social inclusion and equity. *He Kupu*, 4(3), 19–29.
- Morales, P. Z., & Rumenapp, J. C. (2017). Talking about Language in Pre-School: The Use of Video-Stimulated Recall with Emergent Bilingual Children. *Journal of Multilingual Education Research*, 7(4), 19–42.
- Morillo Morales, G., & Cornips, L. (2023). Minoritising a regional language in multilingual preschools in Dutch Limburg: Teachers' and toddlers' choices between Dutch and Limburgish. *International Journal of Bilingualism*, 27(3), 275–292. <https://doi.org/10.1177/13670069221079335>

- Nespor, J. (1987). The role of beliefs in the practice of teaching. *Journal of curriculum studies*, 19(4), 317–328. <https://doi.org/10.1080/0022027870190403>
- Neumann, M. M. (2018). Using tablets and apps to enhance emergent literacy skills in young children. *Early Childhood Research Quarterly*, 42, 239–246. <https://doi.org/10.1016/j.ecresq.2017.10.006>
- Neumann, M. M. (2020). The impact of tablets and apps on language development. *Childhood Education*, 96(6), 70–74. <https://doi.org/10.1080/00094056.2020.1846394>
- Nikolopoulou, K., & Gialamas, V. (2015). ICT and play in preschool: early childhood teachers' beliefs and confidence. *International Journal of Early Years Education*, 23(4), 409–425. <https://doi.org/10.1080/09669760.2015.1078727>
- Nilsen, M. (2024). Digital childhoods and multilingual identities: Preschool children's interactions with a picture book app. *Children & Society*. <https://doi.org/10.1111/chso.12902>
- Oakley, G., Wildy, H., & Berman, Y. (2020). Multimodal digital text creation using tablets and open-ended creative apps to improve the literacy learning of children in early childhood classrooms. *Journal of Early Childhood Literacy*, 20(4), 655–679. <https://doi.org/10.1177/1468798418779171>
- OECD (2023), Empowering Young Children in the Digital Age, Starting Strong, OECD Publishing, Paris, <https://doi.org/10.1787/50967622-en>.
- Otheguy, R., García, O., & Reid, W. (2015). Clarifying translanguaging and deconstructing named languages: A perspective from linguistics. *Applied linguistics review*, 6(3), 281–307. <https://doi.org/10.1515/applirev-2015-0014>
- Otsuji, E., & Pennycook, A. (2010). Metrolingualism: fixity, fluidity and language in flux. *International Journal of Multilingualism*, 7(3), 240–254. <https://doi.org/10.1080/14790710903414331>
- van Oers, B. (2014). Cultural-historical perspectives on play: Central ideas. In L. Brooker, M. Blaise, & S. Edwards (Eds.), *The Sage handbook of play and learning in early childhood* (pp. 56–66). London, UK: Sage.
- Pagett, L. (2006). Mum and Dad prefer me to speak Bengali at home: code switching and parallel speech in a primary school setting. *Literacy (Oxford, England)*, 40(3), 137–145. <https://doi.org/10.1111/j.1467-9345.2006.00424.x>
- Palaiologou, I. (2016). Teachers' dispositions towards the role of digital devices in play-based pedagogy in early childhood education. *Early Years (London, England)*, 36(3), 305–321. <https://doi.org/10.1080/09575146.2016.1174816>
- Palla, L., & Roth, A. V. (2018). Characteristics of preschool teaching in language, communication and multilingualism: Expressions from ten Swedish municipalities. *Problems of Education in the 21st Century*, 76(2), 189. <https://doi.org/10.33225/pec/18.76.189>
- Palojärvi, A., Koivula, M., Mård-Miettinen, K., & Rutanen, N. (2023). Manifestations of an expert teacher's practical theory of language pedagogy in translanguaging situations in early childhood education and care. *Apples-Journal of Applied Language Studies*, 17(3), 23–43. <https://doi.org/10.47862/apples.129191>
- Palmér, H. (2015). Using tablet computers in preschool: How does the design of applications influence participation, interaction and dialogues?. *International Journal of Early Years Education*, 23(4), 365–381. <http://dx.doi.org/10.1080/09669760.2015.1074553>

- Palviainen, Å., & Curdt-Christiansen, X. L. (2020). Language education policies and early childhood education. In M. Schwartz (Ed.), *Handbook of early language education* (pp. 1–27). Springer International.
- Palviainen, Å., Protassova, E., Mård-Miettinen, K., & Schwartz, M. (2016). Two languages in the air: A cross-cultural comparison of preschool teachers' reflections on their flexible bilingual practices. *International Journal of Bilingual Education and Bilingualism*, *19*(6), 614–630. <https://doi.org/10.1080/13670050.2016.1184615>
- Pawliszko, J. (2023). Translanguaging in preschools: evidence from Polish-English bilingual children. *Innovation in Language Learning and Teaching*, *17*(3), 620–635. <https://doi.org/10.1080/17501229.2022.2100400>
- Pennycook, A. (2017). Translanguaging and semiotic assemblages. *International Journal of Multilingualism*, *14*(3), 269–282. <https://doi.org/10.1080/14790718.2017.1315810>
- Percy-Smith, B. (2006). From consultation to social learning in community participation with young people. *Children, Youth and Environments*, *16*(2), 153–179. <https://doi.org/10.1353/cye.2006.0009>
- Pesch, A. M. (2021). “They call me anneanne!” translanguaging as a theoretical and pedagogical challenge and opportunity in the kindergarten context in Norway. *Acta Borealia*, *38*(1), 23–42. <https://doi.org/10.1080/08003831.2021.1911200>
- Petersen, P. (2018). Beyond Borders-Digital Tablets as a Resource for Pre-school Children's Communication in a Minority Language. *Designs for Learning*, *10*(1), 88–99. <https://doi.org/10.16993/dfl.87>
- Plowman, L., & Stephen, C. (2008). The big picture? Video and the representation of interaction. *British Educational Research Journal*, *34*(4), 541–565. <https://doi.org/10.1080/01411920701609422>
- Plowman, L. (2016). Learning technology at home and preschool. In N. Rushby & D. W. Surry (Eds.), *The Wiley handbook of learning technology* (pp. 96–112). New York, USA: John Wiley & Sons.
- Pontier, R., and M. Gort. (2016). Coordinated translanguaging pedagogy as distributed cognition: A case study of two dual language bilingual education preschool co-teachers' languaging practices during shared book readings. *International Multilingual Research Journal*, *10*(2), 89–106. <https://doi.org/10.1080/19313152.2016.1150732>
- Poza, L. (2017). Translanguaging: Definitions, Implications, and Further Needs in Burgeoning Inquiry. *Berkeley Review of Education*, *6*(2), 101. <https://doi.org/10.5070/B86110060>
- Pramling, N., & Samuelsson, I. P. (2024). Engaging children in what-if thinking through read-aloud conversations in early childhood education for sustainability. *European Early Childhood Education Research Journal*, 1–12. <https://doi.org/10.1080/1350293X.2024.2437760>
- Pramling, N., Wallerstedt, C., Lagerlöf, P., Björklund, C., Kultti, A., Palmér, H., ... & Pramling Samuelsson, I. (2019). Play-responsive teaching in early childhood education. Springer Nature.
- Prediger, S. (2019). Investigating and promoting teachers' expertise for language-responsive mathematics teaching. *Mathematics Education Research Journal*, *31*(4), 367–392. <https://doi.org/10.1007/s13394-019-00258-1>
- Preradovic, N. M., Lesin, G., & Boras, D. (2016). Introduction of digital storytelling in preschool education: A case study from Croatia. *Digital Education Review*, 94–105. <https://doi.org/10.1344/der.2016.30.94-105>

- Prilutskaya, M. (2021). Examining pedagogical translanguaging: A systematic review of the literature. *Languages*, 6(4), 180. <https://doi.org/10.3390/languages6040180>
- Puskás, T., & Björk-Willén, P. (2017). Dilemmatic aspects of language policies in a trilingual preschool group. *Multilingua*, 36(4), 425–449. <https://doi.org/10.1515/multi-2016-0025>
- Rahiem, M. D. H. (2021). Storytelling in early childhood education: Time to go digital. *International Journal of Child Care and Education Policy (Seoul)*, 15(1), 1–20. <https://doi.org/10.1186/s40723-021-00081-x>
- Rainio, A. P. (2008). From Resistance to Involvement: Examining Agency and Control in a Playworld Activity. *Mind, Culture and Activity*, 15(2), 115–140. <https://doi.org/10.1080/10749030801970494>
- Reich, S. M., Yau, J. C., & Warschauer, M. (2016). Tablet-based ebooks for young children: What does the research say?. *Journal of Developmental & Behavioral Pediatrics*, 37(7), 585–591.
- Roberts, T. A., Vadasy, P. F., & Sanders, E. A. (2018). Preschoolers' alphabet learning: Letter name and sound instruction, cognitive processes, and English proficiency. *Early Childhood Research Quarterly*, 44, 257–274. <https://doi.org/10.1016/j.ecresq.2018.04.011>
- Robin, B. (2006). The educational uses of digital storytelling. In C. Crawford, R. Carlsen, K. McFerrin, J. Price, R. Weber, & D. A. Willis (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 709–716). Association for the Advancement of Computing in Education (AACE).
- Rogoff, B., Mistry, J., Göncü, A., & Mosier, C. (1993). Guided participation in cultural activity by toddlers and caregivers. *Monographs of the Society for Research in Child Development*, 58(7, Serial No. 236).
- Rogowsky, B. A., Terwilliger, C. C., Young, C. A., & Kribbs, E. E. (2018). Playful learning with technology: the effect of computer-assisted instruction on literacy and numeracy skills of preschoolers. *International Journal of Play*, 7(1), 60–80. <https://doi.org/10.1080/21594937.2017.1348324>
- Roskos, K. A., Sullivan, S., Simpson, D., & Zuzolo, N. (2016). E-Books in the Early Literacy Environment: Is There Added Value for Vocabulary Development? *Journal of Research in Childhood Education*, 30(2), 226–236. <https://doi.org/10.1080/02568543.2016.1143895>
- Rowe, D. W., Miller, M. E., & Pacheco, M. B. (2014). Preschoolers as digital designers: Composing dual language ebooks using touchscreen computer tablets. In *Handbook of research on digital tools for writing instruction in K-12 settings* (pp. 279–306). IGI Global
- Rowe, D. W., & Miller, M. E. (2016). Designing for diverse classrooms: Using iPads and digital cameras to compose eBooks with emergent bilingual/biliterate four-year-olds. *Journal of Early Childhood Literacy*, 16(4), 425–472. <https://doi.org/10.1177/1468798415593622>
- Rule, L. (2010). Digital storytelling: Never has storytelling been so easy or so powerful. *Knowledge Quest*, 38(4), 56–57.
- Rydland, V., Grøver, V., & Lawrence, J. (2014). The second-language vocabulary trajectories of Turkish immigrant children in Norway from ages five to ten: The role of preschool talk exposure, maternal education, and co-ethnic concentration in the neighborhood. *Journal of Child Language*, 41(2), 352–381. <https://doi.org/10.1017/S0305000912000712>
- Sabatini, F. (2019). Culture as fourth pillar of sustainable development: Perspectives for integration, paradigms of action. *European Journal of Sustainable Development*, 8(3), 31–31. <https://doi.org/10.14207/ejsd.2019.v8n3p31>

- Sairanen, H., Kumpulainen, K., & Kajamaa, A. (2022). An investigation into children's agency: children's initiatives and practitioners' responses in Finnish early childhood education. *Early Child Development and Care*, 192(1), 112–123. <https://doi.org/10.1080/03004430.2020.1739030>
- Samuelsson, R. (2022). Touch and translanguaging in a multilingual early childhood education setting. *Multimodality & Society (Online)*, 2(3), 300–322. <https://doi.org/10.1177/26349795221109355>
- Samuelsson, R., Price, S., & Jewitt, C. (2022). How pedagogical relations in early years settings are reconfigured by interactive touchscreens. *British Journal of Educational Technology*, 53(1), 58–76. <https://doi.org/10.1111/bjet.13152>
- Sanders-Smith, S. C., & Dávila, L. T. (2019). Progressive practice and translanguaging: Supporting multilingualism in a Hong Kong preschool. *Bilingual Research Journal*, 42(3), 275–290. <https://doi.org/10.1080/15235882.2019.1624281>
- Sapsaglam, Ö., Aydın, D., & Toksoy, N. (2020). Comparisons of children's level of recall: Stories told through e-book and picture book. *Educational Research and Reviews*, 15(3), 123–128. <https://doi.org/10.5897/ERR2020.3934>
- Schwartz, M., & Asli, A. (2014). Bilingual teachers' language strategies: The case of an Arabic–Hebrew kindergarten in Israel. *Teaching and Teacher Education*, 38, 22–32. <https://doi.org/10.1016/j.tate.2013.10.013>
- Schwartz, M., Kirsch, C., & Mortini, S. (2022). Young children's language-based agency in multilingual contexts in Luxembourg and Israel. *Applied Linguistics Review*, 13(5), 819–841. <https://doi.org/10.1515/applirev-2019-0050>
- Scollan, A., & Farini, F. (2020). In, out and through digital worlds. Hybrid-transitions as a space for children's agency. *International Journal of Early Years Education*, 28(1), 36–49. <https://doi.org/10.1080/09669760.2019.1695586>
- Selwyn, N. (2010). Looking beyond learning: Notes towards the critical study of educational technology. *Journal of computer assisted learning*, 26(1), 65–73. <https://doi.org/10.1111/j.1365-2729.2009.00338.x>
- Sembiante, S. F., Bengochea, A., & Gort, M. (2020). “Want me to show you?”: Emergent bilingual preschoolers' multimodal resourcing in show-and-tell activity. *Linguistics and Education*, 55, 100794–11. <https://doi.org/10.1016/j.linged.2019.100794>
- Sembiante, S. F., Restrepo-Widney, C., Bengochea, A., & Gort, M. (2023). Sustainable translanguaging pedagogy in support of the vulnerable language: Honoring children's ways of ‘showing’ and ‘telling’ in an early childhood dual language bilingual education program. *International Journal of Bilingual Education and Bilingualism*, 26(8), 928–942. <https://doi.org/10.1080/13670050.2022.2161814>
- Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational researcher*, 27(2), 4–13.
- Shengjergji, S. (2024). «Yeah, I am making new stuff!»: responsivity to and negotiations of agency during digital storytelling in preschool. *European Early Childhood Education Research Journal*, 1–18. <https://doi.org/10.1080/1350293X.2023.2301595>
- Shengjergji, S., Myrendal, J., & Pramling, N. (2024). Responding to Children's Semiotic Repertoires in Collaborative Digital Storytelling. *Early Childhood Education Journal*, 1–12. <https://doi.org/10.1007/s10643-024-01761-2>

- Shier, H. (2001). Pathways to participation: Openings, opportunities and obligations. *Children & Society, 15*(2), 107–117. <https://doi-org.ezproxy.ub.gu.se/10.1002/chi.617>
- Sinclair, R. (2004). Participation in practice: Making it meaningful, effective and sustainable. *Children & Society, 18*(2), 106–118. <https://doi-org.ezproxy.ub.gu.se/10.1002/chi.817>
- Siry, C., & Gorges, A. (2020). Young students' diverse resources for meaning making in science: learning from multilingual contexts. *International Journal of Science Education, 42*(14), 2364–2386. <https://doi.org/10.1080/09500693.2019.1625495>
- Skantz Åberg, E., Lantz-Andersson, A., & Pramling, N. (2014). “Once upon a time there was a mouse”: children’s technology-mediated storytelling in preschool class. *Early Child Development and Care, 184*(11), 1583–1598. <https://doi.org/10.1080/03004430.2013.867342>
- Skantz Åberg, E., Lantz-Andersson, A., & Pramling, N. (2015). Children’s digital storymaking—The negotiated nature of instructional literacy events. *Nordic Journal of Digital Literacy, 10*(3), 170–189. <https://doi.org/10.18261/ISSN1891-943X-2015-03-04>
- Skolverket. (2018). *Läroplan för förskolan* [Curriculum for Preschool]. Retrieved from <https://www.skolverket.se/getFile?file=4001>
- Soini, K., & Birkeland, I. (2014). Exploring the scientific discourse on cultural sustainability. *Geoforum, 51*, 213–223. <https://doi.org/10.1016/j.geoforum.2013.12.001>
- Soini, K., & Dessein, J. (2016). Culture-sustainability relation: Towards a conceptual framework. *Sustainability, 8*(2), 167. <https://doi.org/10.3390/su8020167>
- Somekh, B., & Zeichner, K. (2009). Action research for educational reform: Remodelling action research theories and practices in local contexts. *Educational action research, 17*(1), 5–21. <https://doi.org/10.1080/09650790802667402>
- Stephen, C., & Edwards, S. (2017). *Young children playing and learning in a digital age: A cultural and critical perspective*. Routledge.
- Stetsenko, A. (2009). Teaching–learning and development as activist projects of historical Becoming: expanding Vygotsky’s approach to pedagogy. *Pedagogies: An International Journal, 5*(1), 6–16. <https://doi.org/10.1080/15544800903406266>
- Suárez, E. (2020). “Estoy Explorando Science”: Emergent bilingual students problematizing electrical phenomena through translanguaging. *Science Education, 104*(5), 791–826. <https://doi.org/10.1002/scs.21588>
- Swedish National Agency for Education (2023). Digital kompetens och digitala verktyg i förskolan. [Digital competence and digital tools in preschool]. Retrieved January 2, 2025, from <https://www.skolverket.se/om-oss/var-verksamhet/skolverkets-prioriterade-omraden/digitalisering/forskolans-digitalisering>
- Swedish School Inspectorate (2017). Förskolans arbete med flerspråkiga barns språkutveckling. [Preschool’s work with language development in multilingual children]. Retrieved January 2, 2025, from <https://www.skolinspektionen.se/globalassets/02-beslut-rapporter-stat/granskningsrapporter/tkg/2017/forskolans-arbete-med-flersprakiga-barns-sprakutveckling/rapport-forskolans-arbete-med-flersprakiga-barns-sprakutveckling-uppdaterad-version.pdf>
- Säljö, R. (2023). Conclusion–knowing in a digital world: Learning, development and the hybrid nature of cognitive practices. In S. Willermark, A. D. Olofsson, & J. O. Lindberg (Eds.), *Digitalization and Digital Competence in Educational Contexts* (pp. 207–217). Routledge.

- Tidöavtalet: Överenskommelse för Sverige [Agreement for Sweden] (2022). Retrieved January 2, 2025, from <https://mb.cision.com/Public/4669/3648119/994c611dffa285e6.pdf>
- Turner, M., & Cross, R. (2016). Making space for multilingualism in Australian schooling. *Language and Education*, 30 (4), 289–297. <https://doi.org/10.1080/09500782.2015.1114627>
- Undheim, M. (2020). “We Need Sound Too!” Children and Teachers Creating Multimodal Digital Stories Together. *Nordic Journal of Digital Literacy*, 15(3), 165–177. <https://doi.org/10.18261/issn.1891-943x-2020-03-03>
- Undheim, M. (2022). Children and teachers engaging together with digital technology in early childhood education and care institutions: A literature review. *European Early Childhood Education Research Journal*, 30(3), 472–489. <https://doi.org/10.1080/1350293X.2021.1971730>
- Undheim, M., & Jernes, M. (2020). Teachers’ pedagogical strategies when creating digital stories with young children. *European Early Childhood Education Research Journal*, 28(2), 256–271. <https://doi.org/10.1080/1350293X.2020.1735743>
- UNESCO. (2005). *Convention on the protection and promotion of the diversity of cultural expressions*. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000246264>
- United Nations. (1989). *Convention on the Rights of the Child*. <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child>
- UN Committee on the Rights of the Child. (2009). *General comment No. 12: The right of the child to be heard*. United Nations. <https://www.ohchr.org/en/documents/general-comments-and-recommendations/general-comment-no-12-2009-right-child-be-heard>
- Utbildningsdepartementet (2020). SOU 2020:67: Förskola för alla barn - för bättre språkutveckling i svenska [Preschool for all children - for better language development in Swedish]. Betänkande från Utredningen om fler barn i förskolan för bättre språkutveckling i svenska [Report from the investigation about more children in preschool for better language development in Swedish] (U 2019:01). Norstedts Juridik AB. Retrieved January 2, 2025, from <https://www.regeringen.se/contentassets/73de9759ac8a41548fe7a7a7e3641b73/forskola-for-alla-barn--for-battre-sprakutveckling-i-svenska-sou-202067/>
- Valkonen, S., & Furu, A. C. (2023). Finnish ECEC personnel’s views on the challenging nature of promoting social justice: a sustainability research perspective. *European Early Childhood Education Research Journal*, 31(4), 529–543. <https://doi.org/10.1080/1350293X.2022.2154818>
- Van Bijleveld, G. G., Dedding, C. W., & Bunders-Aelen, J. F. (2014). Seeing eye to eye or not? Young people’s and child protection workers’ perspectives on children’s participation within the Dutch child protection and welfare services. *Children and Youth Services Review*, 47, 253–259. <https://doi.org/10.1016/j.childyouth.2014.09.018>
- Vartiainen, H., Leinonen, T., & Nissinen, S. (2019). Connected learning with media tools in kindergarten: An illustrative case. *Educational Media International*, 56(3), 233–249. <https://doi.org/10.1080/09523987.2019.1669877>
- Velasco, P., & Fialais, V. (2018). Moments of metalinguistic awareness in a Kindergarten class: Translanguaging for simultaneous biliterate development. *International Journal of Bilingual Education and Bilingualism*, 21(6), 760–774. <https://doi.org/10.1080/13670050.2016.1214104>

- Vetenskapsrådet. (2017). God forskningssed. [Good Research Practice]. Retrieved January 2, 2025, from file:///C:/Users/xshens/Downloads/Good-Research-Practice_VR_2017.pdf [2025-01-02]
- Vidal-Hall, C., Flewitt, R., & Wyse, D. (2020). Early childhood practitioner beliefs about digital media: integrating technology into a child-centred classroom environment. *European Early Childhood Education Research Journal*, 28(2), 167–181. <https://doi.org/10.1080/1350293X.2020.1735727>
- Vygotsky, L. S. (1966). Play and its role in the mental development of the child. *Voprosy psikhologii*, 12(6), 62–76. (Original work published 1933).
- Vygotsky, L. S. (1978). *Mind in Society: The development of higher psychological processes*. Harvard University Press
- Vygotsky, L. S. (1998). *The collected works of L. S. Vygotsky, Volume 5: Child psychology* (R. W. Rieber, Ed.; M. J. Hall, Trans.). Plenum.
- Vygotsky, L. S. (2004). Imagination and creativity in childhood. *Journal of Russian and East European Psychology*, 42(1), 7–97. (Original work published 1930).
- Wall, J. (2012). Can democracy represent children? Toward a politics of difference. *Childhood*, 19(1), 86–100. <https://doi.org/10.1177/0907568211406756>
- Walter-Laager, C., Brandenburg, K., Tinguely, L., Schwarz, J., Pffnner, M. R., & Moschner, B. (2017). Media-assisted language learning for young children: Effects of a word-learning app on the vocabulary acquisition of two-year-olds. *British Journal of Educational Technology*, 48(4), 1062–1072. <https://doi.org/10.1111/bjet.12472>
- Wang, F., & Hannafin, M. J. (2005). Design-based research and technology-enhanced learning environments. *Educational technology research and development*, 53(4), 5–23. <https://doi.org/10.1007/bf02504682>
- Weckström, E., Lastikka, A. L., & Havu-Nuutinen, S. (2022). Constructing a socially sustainable culture of participation for caring and inclusive ECEC. *Sustainability*, 14(7), 3945. <https://doi.org/10.3390/su14073815>
- Wertsch, J. V., Tulviste, P., & Hagstrom, F. (1993). A sociocultural approach to agency. In E. Forman, N. Minick, & C. A. Stone (Eds.), *Contexts for learning: Sociocultural dynamics in children's development* (pp. 336–356). Oxford University Press.
- Williams, C. (1994). *Arfarniad o Ddullian Dysgu ac Addysgu yng Nghyd-destun Addysg Umchradd Ddwyieithog* (Unpublished doctoral dissertation). Bangor, UK: University of Wales Bangor.
- Wittgenstein, L. (1953). *Philosophische untersuchungen/Philosophical investigations* (G. E. M. Anscombe, Trans.). Blackwell.
- Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 17(2), 89–100. <https://doi.org/10.1111/j.1469-7610.1976.tb00381.x>
- Wood, E., Nuttall, J., Edwards, S., & Grieshaber, S. (2019). Young children's digital play in early childhood settings: Curriculum, pedagogy and teachers' knowledge. In O. Erstad, R. Flewitt, B. Kümmerling-Meibauer, & I. S. P. Pereira (Eds.), *The Routledge handbook of digital literacies in early childhood* (pp. 214–226). Routledge.
- World Commission on Environment and Development. (1987). *Our common future*. Oxford University Press.

- World Organization for Early Childhood Education (OMEP). (2019). The OMEP ESD rating scale and tool kit: *Early childhood education for sustainability and global citizen education* (2nd ed., adapted from the original ESD Rating Scale). <https://omepworld.org/wp-content/uploads/2021/02/2019-Introduction-to-the-OMEP-ESD-rating-scaleENG.pdf>
- Wu, J., & Chen, D.-T. V. (2020). A systematic review of educational digital storytelling. *Computers and Education*, *147*, 103786. <https://doi.org/10.1016/j.compedu.2019.103786>
- Wyness, M. (2013). Global standards and deficit childhoods: the contested meaning of children's participation. *Children's Geographies*, *11*(3), 340–353. <https://doi.org.ezproxy.ub.gu.se/10.1080/14733285.2013.812280>
- Yelland, N. J. (2018). A pedagogy of multiliteracies: Young children and multimodal learning with tablets. *British Journal of Educational Technology*, *49*(5), 847–858. <https://doi.org/10.1111/bjct.12635>
- Yin, R. K. (1989). *Case study research: Design and methods* (2nd ed.). Newbury Park, CA: Sage.
- Yin, R. (2010). Analytic generalization. *Encyclopedia of case study research*, *1*, 20–22.
- Young, V. A. (2004). Your Average Nigga. *College Composition and Communication*, *55*(4), 693–715. <https://doi.org/10.2307/4140667>
- Young, V. A. (2007). *Your average nigga: Performing race, literacy, and masculinity*. Wayne State University Press.
- Yuksel-Arslan, P., Yildirim, S., & Robin, B. R. (2016). A phenomenological study: teachers' experiences of using digital storytelling in early childhood education. *Educational Studies*, *42*(5), 427–445. <https://doi.org/10.1080/03055698.2016.1195717>
- Zheng, X., Wang, R., Hoekstra, A. Y., Krol, M. S., Zhang, Y., Guo, K., ... & Wang, C. (2021). Consideration of culture is vital if we are to achieve the Sustainable Development Goals. *One Earth*, *4*(2), 307–319. <https://doi.org/10.1016/j.oneear.2021.01.012>
- Zheng, Z., Degotardi, S., & Djonov, E. (2021). Supporting multilingual development in early childhood education: A scoping review. *International Journal of Educational Research*, *110*, 101894. <https://doi.org/10.1016/j.ijer.2021.101894>

Informed Consent to participate in the Research Study (For parents)
Sofije Shengjergji

Forsknings titel: Stöd till flerspråkighet i förskolan genom en lekresponsiv undervisningsstrategi och användning av digital teknik.

Huvudforskare: Sofije Shengjergji,

Sofije.shengjergji@gu.se, telefon: 0762763679

Handledare: Niklas Pramling, Jenny Myrendal

Institution: Göteborgs universitet

1. Inledning och syfte med studien

Detta är doktorandnivåforskning och ingår i en nationell forskarskola, finansierad av Vetenskapsrådet, där fyra universitet (Göteborg, Linné, Malmö och Kristianstad) samarbetar med syftet att utbilda för lekresponsiv undervisning i förskoleundervisning för social och kulturell hållbarhet (PRECEC SCS), informerad av den senaste teoretiska utvecklingen i form av PRECEC (eller lekresponsiv undervisning, LRU, på svenska; Pramling et al., 2019). Fenomenet flerspråkighet är centralt mitt intresse och denna forskning kommer att sträva efter att identifiera pedagogiska synsätt och strategier för att arbeta i barngrupper där en mångfald språkliga erfarenheter finns. Som huvudforskare kommer jag att samarbeta med förskollärarna för att skapa lekfulla aktiviteter där digital teknik kommer att användas och lärare kommer att stödja barns lärande och utveckling i förhållande till flerspråkighet. Mer specifikt är syftet med denna forskning att producera ny pedagogisk kunskap inom området för tidig barndomsutbildning genom att empiriskt undersöka hur undervisning i förskolan kan svara på ett flerspråkigt sammanhang när lekfulla aktiviteter med digital teknik börjar utvecklas och lärare bygger pedagogik (undervisning) på några principer i lekresponsiv utbildning och omsorg i barndomen (PRECEC/LRU).

2. Beskrivning av forskningen

Denna forskning kommer att involvera klassrumsobservationer där jag kommer att föra anteckningar för att bekanta mig med den specifika förskolemiljön. En intervju med rektor för förskolan (som dokumenteras genom ljudinspelning) för att få en bättre förståelse för förskolans filosofi angående flerspråkighet och digital teknik. Intervjuer genomförs också med förskolelärarna (som även de kommer att spelas in) där frågor om flerspråkighet och digital teknik kommer att diskuteras med avseende på deras undervisningsmetoder. Förskolelärarna kommer också att delta i workshops där jag kommer att introducera några principer i teorin PRECEC/LRU och begreppet translanguaging som vi kommer att arbeta med i denna forskning. När dessa åtgärder är slutförda kommer lärarna och jag tillsammans att börja planera de lekfulla aktiviteterna där barn skapar sina egna e-böcker och spelar in sina historier på de språk de kan. Dessa aktiviteter kommer att spelas in på video och senare kommer forskaren tillsammans med läraren att diskutera och reflektera över interaktioner som ägde rum mellan lärare och barn och mellan barnen, och vad som kan utvecklas i undervisningen. Efter detta samtal kommer lekfulla aktiviteter att initieras igen men med en annan grupp barn för att genomföra de förändringar som blivit gemensamt beslutade. I slutet av detta kommer lärare att intervjuas om de utmaningar och möjligheter som de identifierar när de reflekterar över att arbeta enligt några principer i PRECEC/LRU, i språkligt pluralistiska barngrupper och med användning av digital teknik.

Informed Consent to participate in the Research Study (For parents)
Sofije Shengjergji

3. Potentiella risker och fördelar

Deltagande i denna forskning medför inga kända risker. Det kommer inte att finnas några direkta fördelar (som kompensation) för deltagarna med att delta i denna forskningsstudie. Den förväntade fördelen med deltagandet i denna studie är att deltagarna kan få en bättre förståelse för hur undervisning i förskolan kan vara lyhörd för barns flerspråkighet, involvera digital teknik på ett lämpligt pedagogiskt sätt och förbättra lärarnas undervisningsmetoder.

4. Sekretess

Dokumentet från denna studie kommer att hållas så konfidentiella som möjligt, vilket innebär att all information (ljud- och videoinspelningar, fältanteckningar) från studien kommer att koda och lagras separat från alla namn eller annan direkt identifiering av deltagare för att skydda varje deltagares namn. Inga individuella identiteter (andra än forskarens egen) kommer att användas i några rapporter eller publikationer som härrör från studien, data kommer att pseudonymiserad, vilket här innebär att deltagarna kommer att slumpmässigt ges namn från namnlistor. Forskningsinformation kommer alltid att sparas i låsta filer och kommer endast att användas för vetenskapliga ändamål. Ljud- och videoinspelningar lagras på det krypterade lagringsutrymme som Göteborgs universitet tillhandahåller för lagring av forskningsdata. Videodata kommer att sparas i minst tio år för att möjliggöra granskning av forskningsresultaten.

5. Frivilligt deltagande

Allt deltagande är frivilligt och deltagarna har rätt att fritt uttrycka sina åsikter. Ditt beslut om att delta i denna studie kommer inte att påverka ditt förhållande till Göteborgs universitet eller forskaren (Sofije Shengjergji). Om du väljer att delta i denna studie kan du dra tillbaka ditt samtycke till att fortsätta delta när som helst.

6. Frågor

Om du har några frågor om studien, kontakta Sofije Shengjergji genom att ringa 0762763679. Du kan också kontakta mig via e-postadressen Sofije.shengjergji@gu.se med frågor om forskningsdeltagares rättigheter eller forskningsrelaterade problem.

Informed Consent to participate in the Research Study (For parents)
Sofije Shengjergji

7. Samtycke

DIN UNDERSKRIFT BETYDER ATT NI HAR BESLUTAT ATT LÅTA ERT BARN DELTA I STUDIEN EFTER ATT DU HAR TAGIT DEL AV INFORMATIONEN OVAN OCH DU FÖRSTÅR INFORMATIONEN I DENNA FORM, FÅTT DINA EVENTUELLA FRÅGOR BERVARADE OCH FÅR EN KOPIA AV DENNA TEXT.

Signatur datum _____

Barnets namn _____

Föräldrars namn _____

Signatur datum _____

Huvudforskare _____

Informed Consent to participate in the Research Study (For teachers)
Sofije Shengjergji

Forsknings titel: Stöd till flerspråkighet i förskolan genom en lekresponsiv undervisningsstrategi och användning av digital teknik.

Huvudforskare: Sofije Shengjergji,

Sofije.shengjergji@gu.se, telefon: 0762763679

Handledare: Niklas Pramling, Jenny Myrendal

Institution: Göteborgs universitet

1. Inledning och syfte med studien

Detta är doktorandnivåforskning och ingår i en nationell forskarskola, finansierad av Vetenskapsrådet, där fyra universitet (Göteborg, Linné, Malmö och Kristianstad) samarbetar med syftet att utbilda för lekresponsiv undervisning i förskoleundervisning för social och kulturell hållbarhet (PRECEC SCS), informerad av den senaste teoretiska utvecklingen i form av PRECEC (eller lekresponsiv undervisning, LRU, på svenska; Pramling et al., 2019). Fenomenet flerspråkighet är centralt mitt intresse och denna forskning kommer att sträva efter att identifiera pedagogiska synsätt och strategier för att arbeta i barngrupper där en mångfald språkliga erfarenheter finns. Som huvudforskare kommer jag att samarbeta med förskollärarna för att skapa lekfulla aktiviteter där digital teknik kommer att användas och lärare kommer att stödja barns lärande och utveckling i förhållande till flerspråkighet. Mer specifikt är syftet med denna forskning att producera ny pedagogisk kunskap inom området för tidig barndomsutbildning genom att empiriskt undersöka hur undervisning i förskolan kan svara på ett flerspråkigt sammanhang när lekfulla aktiviteter med digital teknik börjar utvecklas och lärare bygger pedagogik (undervisning) på några principer i lekresponsiv utbildning och omsorg i barndomen (PRECEC/LRU).

2. Beskrivning av forskningen

Denna forskning kommer att involvera klassrumsobservationer där jag kommer att föra anteckningar för att bekanta mig med den specifika förskolemiljön. En intervju med rektor för förskolan (som dokumenteras genom ljudinspelning) för att få en bättre förståelse för förskolans filosofi angående flerspråkighet och digital teknik. Intervjuer genomförs också med förskolelärarna (som även de kommer att spelas in) där frågor om flerspråkighet och digital teknik kommer att diskuteras med avseende på deras undervisningsmetoder. Förskolelärarna kommer också att delta i workshops där jag kommer att introducera några principer i teorin PRECEC/LRU och begreppet translanguaging som vi kommer att arbeta med i denna forskning. När dessa åtgärder är slutförda kommer lärarna och jag tillsammans att börja planera de lekfulla aktiviteterna där barn skapar sina egna e-böcker och spelar in sina historier på de språk de kan. Dessa aktiviteter kommer att spelas in på video och senare kommer forskaren tillsammans med läraren att diskutera och reflektera över interaktioner som ägde rum mellan lärare och barn och mellan barnen, och vad som kan utvecklas i undervisningen. Efter detta samtal kommer lekfulla aktiviteter att initieras igen men med en annan grupp barn för att genomföra de förändringar som blivit gemensamt beslutade. I slutet av detta kommer lärare att intervjuas om de utmaningar och möjligheter som de identifierar när de reflekterar över att arbeta enligt några principer i PRECEC/LRU, i språkligt pluralistiska barngrupper och med användning av digital teknik.

3. Potentiella risker och fördelar

Deltagande i denna forskning medför inga kända risker. Det kommer inte att finnas några direkta fördelar (som kompensation) för deltagarna med att delta i denna forskningsstudie. Den förväntade fördelen med deltagandet i denna studie är att deltagarna kan få en bättre förståelse för hur undervisning i förskolan kan vara lyhörd för barns flerspråkighet, involvera digital teknik på ett lämpligt pedagogiskt sätt och förbättra lärarnas undervisningsmetoder.

4. Sekretess

Dokumenterna från denna studie kommer att hållas så konfidentiella som möjligt, vilket innebär att all information (ljud- och videoinspelningar, fältanteckningar) från studien kommer att koda och lagras separat från alla namn eller annan direkt identifiering av deltagare för att skydda varje deltagares namn. Inga individuella identiteter (andra än forskarens egen) kommer att användas i några rapporter eller publikationer som härrör från studien, data kommer att pseudonymiseras, vilket här innebär att deltagarna kommer att slumpmässigt ges namn från namnlistor. Forskningsinformation kommer alltid att sparas i låsta filer och kommer endast att användas för vetenskapliga ändamål. Ljud- och videoinspelningar lagras på det krypterade lagringsutrymme som Göteborgs universitet tillhandahåller för lagring av forskningsdata. Videodata kommer att sparas i minst tio år för att möjliggöra granskning av forskningsresultaten.

5. Frivilligt deltagande

Allt deltagande är frivilligt och deltagarna har rätt att fritt uttrycka sina åsikter. Ditt beslut om att delta i denna studie kommer inte att påverka ditt förhållande till Göteborgs universitet eller forskaren (Sofije Shengjergji). Om du väljer att delta i denna studie kan du dra tillbaka ditt samtycke till att fortsätta delta när som helst.

6. Frågor

Om du har några frågor om studien, kontakta Sofije Shengjergji genom att ringa 0762763679. Du kan också kontakta mig via e-postadressen Sofije.shengjergji@gu.se med frågor om forskningsdeltagares rättigheter eller forskningsrelaterade problem.

Informed Consent to participate in the Research Study (For teachers)
Sofije Shengjergji

7. Samtycke

DIN UNDERSKRIFT BETYDER ATT DU HAR BESLUTAT ATT DELTA I STUDIEN EFTER ATT DU HAR TAGIT DEL AV INFORMATIONEN OVAN OCH DU FÖRSTÅR INFORMATIONEN I DENNA FORM, FÅTT DINA EVENTUELLA FRÅGOR BERVARADE OCH FÅR EN KOPIA AV DENNA TEXT.

Signatur datum _____

Forskningsdeltagare _____

Signatur datum _____

Huvudforskare _____

Previous publications:

Editors: Kjell Härnqvist and Karl-Gustaf Stukát

1. KARL-GUSTAF STUKÁT *Lekskolans inverkan på barns utveckling*. Stockholm 1966
2. URBAN DAHLÖF *Skoldifferentiering och undervisningsförlopp*. Stockholm 1967
3. ERIK WALLIN *Spelling. Factorial and experimental studies*. Stockholm 1967
4. BENGT-ERIK ANDERSSON *Studies in adolescent behaviour. Project Yg, Youth in Göteborg*. Stockholm 1969
5. FERENCE MARTON *Structural dynamics of learning*. Stockholm 1970
6. ALLAN SVENSSON *Relative achievement. School performance in relation to intelligence, sex and home environment*. Stockholm 1971
7. GUNNI KÄRRBY *Child rearing and the development of moral structure*. Stockholm 1971

Editors: Urban Dahllöf, Kjell Härnqvist and Karl-Gustaf Stukát

8. ULF P. LUNDGREN *Frame factors and the teaching process. A contribution to curriculum theory and theory on teaching*. Stockholm 1972
9. LENNART LEVIN *Comparative studies in foreign-language teaching*. Stockholm 1972
10. RODNEY ÅSBERG *Primary education and national development*. Stockholm 1973
11. BJÖRN SANDGREN *Kreativ utveckling*. Stockholm 1974
12. CHRISTER BRUSLING *Microteaching - A concept in development*. Stockholm 1974
13. KJELL RUBENSON *Rekrytering till vuxenutbildning. En studie av kortutbildade yngre män*. Göteborg 1975
14. ROGER SÄLJÖ *Qualitative differences in learning as a function of the learner's conception of the task*. Göteborg 1975
15. LARS OWE DAHLGREN *Qualitative differences in learning as a function of content-oriented guidance*. Göteborg 1975
16. MARIE MÅNSSON *Samarbete och samarbetsförmåga. En kritisk granskning*. Lund 1975
17. JAN-ERIC GUSTAFSSON *Verbal and figural aptitudes in relation to instructional methods. Studies in aptitude - treatment interactions*. Göteborg 1976
18. MATS EKHOLM *Social utveckling i skolan. Studier och diskussion*. Göteborg 1976

19. LENNART SVENSSON *Study skill and learning*. Göteborg 1976

20. BJÖRN ANDERSSON *Science teaching and the development of thinking*. Göteborg 1976

21. JAN-ERIK PERNEMAN *Medvetenhet genom utbildning*. Göteborg 1977

Editors: Kjell Härnqvist, Ference Marton and Karl-Gustaf Stukát

22. INGA WERNERSSON *Könsdifferentiering i grundskolan*. Göteborg 1977
23. BERT AGGESTEDT & ULLA TEBELIUS *Barns upplevelser av idrott*. Göteborg 1977
24. ANDERS FRANSSON *Att rädas prov och att vilja reta*. Göteborg 1978
25. ROLAND BJÖRKBERG *Föreställningar om arbete, utveckling och livsrytm*. Göteborg 1978
26. GUNILLA SVINGBY *Läroplaner som styrmedel för svenska obligatoriska skola. Teoretisk analys och ett empiriskt bidrag*. Göteborg 1978
27. INGA ANDERSSON *Tankestilar och bemyndig*. Göteborg 1979
28. GUNNAR STANGVIK *Self-concept and school segregation*. Göteborg 1979
29. MARGARETA KRISTIANSSON *Matematikkunskaper Lgr 62, Lgr 69*. Göteborg 1979
30. BRITT JOHANSSON *Kunskapsbehov i omvårdnadsarbete och kunskapskrav i vårdutbildning*. Göteborg 1979
31. GÖRAN PATRIKSSON *Socialisation och involvering i idrott*. Göteborg 1979
32. PETER GILL *Moral judgments of violence among Irish and Swedish adolescents*. Göteborg 1979
33. TAGE LJUNGBLAD *Förskola - grundskola i samverkan. Föreläsningar och hinder*. Göteborg 1980
34. BERNER LINDSTRÖM *Forms of representation, content and learning*. Göteborg 1980
35. CLAES-GÖRAN WENESTAM *Qualitative differences in retention*. Göteborg 1980
36. BRITT JOHANSSON *Pedagogiska samtal i vårdutbildning. Innehåll och språkbruk*. Göteborg 1981
37. LEIF LYBECK *Arkimedes i klassen. En ämnespedagogisk berättelse*. Göteborg 1981
38. BJÖRN HASSELGREN *Ways of apprehending children at play. A study of pre-school student teachers' development*. Göteborg 1981

39. LENNART NILSSON *Yrkesutbildning i nutidshistoriskt perspektiv. Yrkesutbildningens utveckling från skräväsändets uppbörande 1846 till 1980-talet samt tankar om framtida inriktning.* Göteborg 1981
40. GUDRUN BALKE-AURELL *Changes in ability as related to educational and occupational experience.* Göteborg 1982
41. ROGER SÄLJÖ *Learning and understanding. A study of differences in constructing meaning from a text.* Göteborg 1982
42. ULLA MARKLUND *Droger och påverkan. Eleveanalys som utgångspunkt för drogundervisning.* Göteborg 1983
43. SVEN SETTERLIND *Anslappningsstråning i skolan. Forskningsöversikt och empiriska studier.* Göteborg 1983
44. EGIL ANDERSSON & MARIA LAWENIUS *Lärares uppfattning av undervisning.* Göteborg 1983
45. JAN THEMAN *Uppfattningar av politisk makt.* Göteborg 1983
46. INGRID PRAMLING *The child's conception of learning.* Göteborg 1983
47. PER OLOF THÅNG *Vuxenlärares förhållningsätt till deltagarerbarenheter. En studie inom AMU.* Göteborg 1984
48. INGE JOHANSSON *Fritidspedagog på fritidshem. En yrkesgrupps syn på sitt arbete.* Göteborg 1984
49. GUNILLA SVANBERG *Medansvar i undervisning. Metoder för observation och kvalitativ analys.* Göteborg 1984
50. SVEN-ERIC REUTERBERG *Studiemedel och rekrytering till högskolan.* Göteborg 1984
51. GÖSTA DAHLGREN & LARS-ERIK OLSSON *Läsning i barnperspektiv.* Göteborg 1985
52. CHRISTINA KÄRRQVIST *Kunskapsutveckling genom experimentcenterade dialoger i ellära.* Göteborg 1985
53. CLAES ALEXANDERSSON *Stabilitet och förändring. En empirisk studie av förhållandet mellan skolkunskap och vardagsvetande.* Göteborg 1985
54. LILLEMOR JERNQVIST *Speech regulation of motor acts as used by cerebral palsied children. Observational and experimental studies of a key feature of conductive education.* Göteborg 1985
55. SOLVEIG HÄGGLUND *Sex-typing and development in an ecological perspective.* Göteborg 1986
56. INGRID CARLGREN *Lokalt utvecklingsarbete.* Göteborg 1986
57. LARSSON, ALEXANDERSSON, HELMSTAD & THÅNG *Arbetsupplevelse och utbildningsyn hos icke facklärd. Göteborg 1986*
58. ELVI WALLDAL *Studier vid gymnasieskolans världlinje. Förväntad yrkesposition, rollpåverkan, självuppfattning.* Göteborg 1986
- Editors: Jan-Eric Gustafsson, Ferenc Marton and Karl-Gustaf Stukát
59. EIE ERICSSON *Foreign language teaching from the point of view of certain student activities.* Göteborg 1986
60. JAN HOLMER *Högre utbildning för lågutbildade i industrin.* Göteborg 1987
61. ANDERS HILL & TULLIE RABE *Psykiskt utvecklingsstörda i kommunal förskola.* Göteborg 1987
62. DAGMAR NEUMAN *The origin of arithmetic skills. A phenomenographic approach.* Göteborg 1987
63. TOMAS KROKSMARK *Fenomenografisk didaktik.* Göteborg 1987
64. ROLF LANDER *Utvärderingsforskning - till vilken nytta? Göteborg 1987*
65. TORGNY OTTOSSON *Map-reading and wayfinding.* Göteborg 1987
66. MAC MURRAY *Utbildningsexpansion, jämlikhet och avlänkning.* Göteborg 1988
67. ALBERTO NAGLE CAJES *Studievalet ur den väljandes perspektiv.* Göteborg 1988
68. GÖRAN LASSBO *Mamma - (Pappa) - barn. En utvecklings ekologisk studie av socialisation i olika familjetyper.* Göteborg 1988
69. LENA RENSTRÖM *Conceptions of matter. A phenomenographic approach.* Göteborg 1988
70. INGRID PRAMLING *Att lära barn lära.* Göteborg 1988
71. LARS FREDHOLM *Praktik som bärare av undervisnings innehåll och form. En förklaringsmodell för uppkomst av undervisningshandlingar inom en totalförsvarsorganisation.* Göteborg 1988
72. OLOF F. LUNDQUIST *Studiestöd för vuxna. Utveckling, utnyttjande, utfall.* Göteborg 1989
73. BO DAHLIN *Religionen, själen och livets mening. En fenomenografisk och existensfilosofisk studie av religionsundervisningens villkor.* Göteborg 1989
74. SUSANNE BJÖRKDAHL ORDELL *Socialarbetare. Bakgrund, utbildning och yrkesliv.* Göteborg 1990
75. EVA BJÖRCK-ÅKESSON *Measuring Sensation Seeking.* Göteborg 1990
76. ULLA-BRITT BLADINI *Från hjälpskolelärare till förändringsagent. Svensk speciallärutbildning 1921-1981 relaterad till specialundervisningens utveckling och förändringar i speciallärares yrkesuppgifter.* Göteborg 1990

77. ELISABET ÖHRN *Könsmönster i klassrumsinteraktion. En observations- och intervjustudie av högstadieelevers lärarkontakter.* Göteborg 1991
78. TOMAS KROKSMARK *Pedagogikens vägar till dess första svenska professur.* Göteborg 1991

Editors: Ingemar Emanuelsson, Jan-Eric Gustafsson and Ference Marton

79. ELVI WALLDAL *Problembaserad inläring. Utvärdering av påbyggnadslinjen Utbildning i öppen hälso- och sjukvård.* Göteborg 1991
80. ULLA AXNER *Visuella perceptionsvägrigheter i skolperspektiv. En longitudinell studie.* Göteborg 1991
81. BIRGITTA KULLBERG *Learning to learn to read.* Göteborg 1991
82. CLAES ANNERSTEDT *Idrottslärarna och idrottsämnet. Utveckling, mål, kompetens - ett didaktiskt perspektiv.* Göteborg 1991
83. EWA PILHAMMAR ANDERSSON *Det är vi som är dom. Sjuksköterskestuderandes föreställningar och perspektiv under utbildningstiden.* Göteborg 1991
84. ELSA NORDIN *Kunskaper och uppfattningar om maten och dess funktioner i kroppen. Kombinerad enkät- och intervjustudie i grundskolans årskurser 3, 6 och 9.* Göteborg 1992
85. VALENTIN GONZÁLEZ. *On human attitudes. Root metaphors in theoretical conceptions.* Göteborg 1992
86. JAN-ERIK JOHANSSON *Metodikämnet i förskollärautbildningen. Bidrag till en traditionsbestämning.* Göteborg 1992
87. ANN AHLBERG *Att möta matematiska problem. En belysning av barns lärande.* Göteborg 1992
88. ELLA DANIELSON *Omvårdnad och dess psykosociala inslag. Sjuksköterskestuderandes uppfattningar av centrala termer och reaktioner inför en omvårdnadssituation.* Göteborg 1992
89. SHIRLEY BOOTH *Learning to program. A phenomenographic perspective.* Göteborg 1992
90. EVA BJÖRCK-ÅKESON *Samspel mellan små barn med rörelsehinder och talhandikapp och deras föräldrar - en longitudinell studie.* Göteborg 1992
91. KARIN DAHLBERG *Helhetsyn i vården. En uppgift för sjuksköterskeutbildningen.* 1992
92. RIGMOR ERIKSSON *Teaching Language Learning. In-service training for communicative teaching and self directed learning in English as a foreign language.* 1993
93. KJELL HÄRENSTAM *Skolboks-islam. Analys av bilden av islam i läroböcker i religionskunskap.* Göteborg 1993.

94. INGRID PRAMLING *Kunnandets grunder. Prövning av en fenomenografisk ansats till att utveckla barns sätt att uppfatta sin omvärld.* Göteborg 1994.
95. MARIANNE HANSSON SCHERMAN *Att vågra vara sjuk. En longitudinell studie av förhållningssätt till astma / allergi.* Göteborg 1994
96. MIKAEL ALEXANDERSSON *Metod och medvetande.* Göteborg 1994
97. GUN UNENGE *Pappor i föräldrakooperativa daghem. En deskriptiv studie av pappors medverkan.* Göteborg 1994
98. BJÖRN SJÖSTRÖM *Assessing acute postoperative pain. Assessment strategies and quality in relation to clinical experience and professional role.* Göteborg 1995
99. MAJ ARVIDSSON *Lärares orsaks- och ätgärdsstankar om elever med svårigheter.* Göteborg 1995
100. DENNIS BEACH *Making sense of the problems of change: An ethnographic study of a teacher education reform.* Göteborg 1995.
101. WOLMAR CHRISTENSSON *Subjektiv bedömning - som besluts och handlingsunderlag.* Göteborg 1995
102. SONJA KIHLESTRÖM *Att vara förskollärare. Om yrkets pedagogiska innebörder.* Göteborg 1995
103. MARITA LINDAHL *Inläring och erfärande. Ettäringars möte med förskolans värld.* Göteborg. 1996
104. GÖRAN FOLKESTAD *Computer Based Creative Music Making - Young Peoples' Music in the Digital Age.* Göteborg 1996
105. EVA EKEBLAD *Children • Learning • Numbers. A phenomenographic excursion into first-grade children's arithmetic.* Göteborg 1996
106. HELGE STRÖMDAHL *On mole and amount of substance. A study of the dynamics of concept formation and concept attainment.* Göteborg 1996
107. MARGARETA HAMMARSTRÖM *Värför inte högskola? En longitudinell studie av olika faktors betydelse för studiebegärade ungdomars utbildningskarriär.* Göteborg 1996
108. BJÖRN MÅRDÉN *Rektorers tänkande. En kritisk betraktelse av skollärskap.* Göteborg 1996
109. GLORIA DALL'ALBA & BJÖRN HASSELGREN (EDS) *Reflections on Phenomenography - Toward a Methodology?* Göteborg 1996
110. ELISABETH HESSELFORS ARKTOFT *I ord och handling. Innebörder av "att anknyta till elevers erfarenheter", uttryckta av lärare.* Göteborg 1996
111. BARBRO STRÖMBERG *Professionellt förhållningssätt hos läkare och sjuksköterskor. En studie av uppfattningar.* Göteborg 1997
112. HARRIET AXELSSON *Våga lära. Om lärare som förändrar sin miljöundervisning.* Göteborg 1997

113. ANN AHLBERG *Children's ways of handling and experiencing numbers*. Göteborg 1997
114. HUGO WIKSTRÖM *Att förstå förändring. Modellbyggande, simulering och gymnasieelevers lärande*. Göteborg 1997
115. DORIS AXELSEN *Listening to recorded music. Habits and motivation among high-school students*. Göteborg 1997.
116. EWA PILHAMMAR ANDERSSON *Handledning av sjuksköterskestuderande i klinisk praktik*. Göteborg 1997
117. OWE STRÅHLMAN *Elitidrott, karriär och avslutning*. Göteborg 1997
118. AINA TULLBERG *Teaching the 'mole'. A phenomenographic inquiry into the didactics of chemistry*. Göteborg 1997.
119. DENNIS BEACH *Symbolic Control and Power Relay Learning in Higher Professional Education*. Göteborg 1997
120. HANS-ÅKE SCHERP *Utmanande eller utmanat ledarskap. Rektor, organisationen och förändrat undervisningsmönster i gymnasieskolan*. Göteborg 1998
121. STAFFAN STUKÁT *Lärares planering under och efter utbildningen*. Göteborg 1998
122. BIRGIT LENDAHL ROSENDAHL *Examensarbetets innebörder. En studie av blivande lärares utsagor*. Göteborg 1998
123. ANN AHLBERG *Meeting Mathematics. Educational studies with young children*. Göteborg 1998
124. MONICA ROSÉN *Gender Differences in Patterns of Knowledge*. Göteborg 1998.
125. HANS BIRNIK *Lärare- elevrelationen. Ett relationistiskt perspektiv*. Göteborg 1998
126. MARGRETH HILL *Kompetent för "det nya arbetslivet"? Tre gymnastieklasser reflekterar över och diskuterar yrkesförberedande studier*. Göteborg 1998
127. LISBETH ÅBERG-BENGTSSON *Entering a Graphicate Society. Young Children Learning Graphs and Charts*. Göteborg 1998
128. MELVIN FEFER *The Conflict of Equals: A Constructionist View of Personality Development*. Göteborg 1999
129. ULLA RUNESSON *Variationens pedagogik. Skilda sätt att behandla ett matematiskt innehåll*. Göteborg 1999
130. SILWA CLAESSESSON *"Hur tänker du då?" Empiriska studier om relationen mellan forskning om elevuppfattningar och lärares undervisning*. Göteborg 1999
131. MONICA HANSEN *Yrkeskulturer i möte. Läraren, fritidspedagogen och samverkan*. Göteborg 1999
132. JAN THELIANDER *Att studera arbetets förändring under kapitalismen. Ure och Taylor i pedagogiskt perspektiv*. Göteborg 1999
133. TOMAS SAAR *Musikens dimensioner - en studie av unga musikers lärande*. Göteborg 1999
134. GLEN HELMSTAD *Understanding of understanding. An inquiry concerning experiential conditions for developmental learning*. Göteborg 1999
135. MARGARETA HOLMEGAARD *Språkmedvetenhet och ordinläring. Lärare och inlärare reflekterar kring en betydelsefältsvörning i svenska som andraspråk*. Göteborg 1999
136. ALYSON MCGEE *Investigating Language Anxiety through Action Inquiry: Developing Good Research Practices*. Göteborg 1999
137. EVA GANNERUD *Genusperspektiv på lärargärning. Om kvinnliga klasslärares liv och arbete*. Göteborg 1999
138. TELLERVO KOPARE *Att rida stormen ut. Förlösning berättelser i Finnmark och Sápmi*. Göteborg 1999
139. MAJA SÖDERBÄCK *Encountering Parents. Professional Action Styles among Nurses in Pediatric Care*. Göteborg 1999
140. AIRI ROVIO - JOHANSSON *Being Good at Teaching. Exploring different ways of handling the same subject in Higher Education*. Göteborg 1999
141. EVA JOHANSSON *Etik i små barns värld. Om värden och normer bland de yngsta barnen i förskolan*. Göteborg 1999
142. KENNERT ORLENIUS *Förståelsens paradox. Yrkeserfarenhetens betydelse när förskollärare blir grundskollärare*. Göteborg 1999.
143. BJÖRN MÅRDÉN *De nya hälsomissionärerna – rörelser i korsvägen mellan pedagogik och hälsopromotion*. Göteborg 1999
144. MARGARETA CARLÉN *Kunskapslyft eller avhyttarbänk? Möten med industriarbetare om utbildning för arbete*. Göteborg 1999
145. MARIA NYSTRÖM *Allvarligt psykiskt störda människors vardagliga tillvaro*. Göteborg 1999
146. ANN-KATRIN JAKOBSSON *Motivation och inläring ur genusperspektiv. En studie av gymnasieelever på teoretiska linjer/program*. Göteborg 2000
147. JOANNA GIOTA *Adolescents' perceptions of school and reasons for learning*. Göteborg 2000
148. BERIT CARLSTEDT *Cognitive abilities – aspects of structure, process and measurement*. Göteborg 2000
149. MONICA REICHENBERG *Röst och kausalitet i lärobokstexter. En studie av elevers förståelse av olika textversioner*. Göteborg 2000

150. HELENA ÅBERG *Sustainable waste management in households – from international policy to everyday practice. Experiences from two Swedish field studies.* Göteborg 2000
151. BJÖRN SJÖSTRÖM & BRITT JOHANSSON *Ambulanssjukvård. Ambulanssjukvårdarens och läkarens perspektiv.* Göteborg 2000
152. AGNETA NILSSON *Omvårdnadskompetens inom bemsjukvård – en deskriptiv studie.* Göteborg 2001
153. ULLA LÖFSTEDT *Förskolan som lärandekontext för barns bildskapande.* Göteborg 2001
154. JÖRGEN DIMENÄS *Innehåll och interaktion. Om elevers lärande i naturvetenskaplig undervisning.* Göteborg 2001
155. BRITT MARIE APELGREN *Foreign Language Teachers' Voices. Personal Theories and Experiences of Change in Teaching English as a Foreign Language in Sweden.* Göteborg 2001
156. CHRISTINA CLIFFORDSON *Assessing empathy: Measurement characteristics and interviewer effects.* Göteborg 2001
157. INGER BERGGREN *Identitet, kön och klass. Hur arbetarflickor formar sin identitet.* Göteborg 2001
158. CARINA FURÅKER *Styrning och visioner – sjuksköterskeutbildning i förändring.* Göteborg 2001
159. INGER BERNDTSSON *Förskjutna horisonter. Livsförändring och lärande i samband med synnedsättning eller blindhet.* Göteborg 2001
160. SONJA SHERIDAN *Pedagogical Quality in Preschool. An issue of perspectives.* Göteborg 2001
161. JAN BAHLENBERG *Den otroliga verkligheten sätter spår. Om Carlo Derkerts liv och konstpedagogiska gärning.* Göteborg 2001
162. FRANK BACH *Om ljuset i tillvaron. Ett undervisningsexperiment inom optik.* Göteborg 2001
163. PIA WILLIAMS *Barn lär av varandra. Samlärande i förskola och skola.* Göteborg 2001
164. VIGDIS GRANUM *Studentenes forestillinger om sykepleie som fag og funksjon.* Göteborg 2001
165. MARIT ALVESTAD *Den komplekse planlegginga. Forskolelärarar om pedagogisk planlegging og praksis.* Göteborg 2001
166. GIRMA BERHANU *Learning-In-Context. An Ethnographic Investigation of Mediated Learning Experiences among Ethiopian Jews in Israel.* Göteborg 2001.
167. OLLE ESKILSSON *En longitudinell studie av 10 – 12-åringars förståelse av materiens förändringar.* Göteborg 2001
168. JONAS EMANUELSSON *En fråga om frågor. Hur lärarens frågor i klassrummet gör det möjligt att få reda på elevernas sätt att förstå det som undervisningen behandlar i matematik och naturvetenskap.* Göteborg 2001
169. BIRGITTA GEDDA *Den offentliga hemligheten. En studie om sjuksköterskans pedagogiska funktion och kompetens i folkhälsoarbetet.* Göteborg 2001
170. FEBE FRIBERG *Pedagogiska möten mellan patienter och sjuksköterskor på en medicinsk vårdavdelning. Mot en värddidaktik på livsvärldsgrund.* Göteborg 2001
171. MADELEINE BERGH *Medvetenhet om bemötande. En studie om sjuksköterskans pedagogiska funktion och kompetens i närståendeundervisning.* Göteborg 2002
172. HENRIK ERIKSSON *Den diplomatiska punkten – maskulinitet som kroppsligt identitetsskapande projekt i svensk sjuksköterskeutbildning.* Göteborg 2002
173. SOLVEIG LUNDRÉN *I spåren av en bemanningsförändring. En studie av sjuksköterskors arbete på en kirurgisk vårdavdelning.* Göteborg 2002
174. BIRGITTA DAVIDSSON *Mellan soffan och katedern. En studie av hur förskollärare och grundskollärare utvecklar pedagogisk integration mellan förskola och skola.* Göteborg 2002
175. KARI SØNDENÅ *Tradisjon og Transcendens – ein fenomenologisk studie av refleksjon i norske førskulelærarutdanning.* Göteborg 2002
176. CHRISTINE BENTLEY *The Roots of Variation of English-Teaching. A Phenomenographic Study Founded on an Alternative Basic Assumption.* Göteborg 2002
177. ÅSA MÄKITALO *Categorizing Work: Knowing, Arguing, and Social Dilemmas in Vocational Guidance.* Göteborg 2002
178. MARITA LINDAHL *VÅRDA – VÅGLEDA – LÄRA. Effekstudie av ett interventionsprogram för pedagogers lärande i förskolemiljön.* Göteborg 2002
179. CHRISTINA BERG *Influences on schoolchildren's dietary selection. Focus on fat and fibre at breakfast.* Göteborg 2002
180. MARGARETA ASP *Vila och lärande om vila. En studie på livsvärlds fenomenologisk grund.* Göteborg 2002
181. FERENC MARTON & PAUL MORRIS (EDS) *What matters? Discovering critical conditions of classroom learning.* Göteborg 2002
182. ROLAND SEVERIN *Dom vet vad dom talar om. En intervjustudie om elevers uppfattningar av begreppen maket och samhällsförändring.* Göteborg 2002
- Editors: Björn Andersson, Jan Holmer and Ingrid Pramling Samuelsson
183. MARLÉNE JOHANSSON *Slöjdpraktik i skolan – hand, tanke, kommunikation och andra medierande redskap.* Göteborg 2002

184. INGRID SANDEROTH *Om lust att lära i skolan: En analys av dokument och klass 8y*. Göteborg 2002
185. INGA-LILL JAKOBSSON *Diagnos i skolan. En studie av skolsituationer för elever med syndromdiagnos*. Göteborg 2002
186. EVA-CARIN LINDGREN *Empowering Young Female Athletes – A Possible Challenge to the Male Hegemony in Sport. A Descriptive and Interventional Study*. Göteborg 2002
187. HANS RYSTEDT *Bridging practices. Simulations in education for the health-care professions*. Göteborg 2002
188. MARGARETA EKBORG *Naturvetenskaplig utbildning för hållbar utveckling? En longitudinell studie av hur studenter på grunskolläraprogrammet utvecklar för miljöundervisning relevanta kunskaper i naturkunskap*. Göteborg 2002
189. ANETTE SANDBERG *Vuxnas lekvärld. En studie om vuxnas erfarenheter av lek*. Göteborg 2002
190. GUNLÖG BREDÄNGE *Gränslös pedagog. Fyra studier om utländska lärare i svensk skola*. Göteborg 2003
191. PER-OLOF BENTLEY *Mathematics Teachers and Their Teaching. A Survey Study*. Göteborg 2003
192. KERSTIN NILSSON *MANDAT – MAKT – MANAGEMENT. En studie av hur värdenhetschefers ledarskap konstrueras*. Göteborg 2003
193. YANG YANG *Measuring Socioeconomic Status and its Effects at Individual and Collective Levels: A Cross-Country Comparison*. Göteborg 2003
194. KNUT VOLDEN *Mediekunskap som mediekritikk*. Göteborg 2003.
195. LOTTA LAGER-NYQVIST *Att göra det man kan – en longitudinell studie av hur sju lärarstudenter utvecklar sin undervisning och formar sin lärarroll i naturvetenskap*. Göteborg 2003
196. BRITT LINDAHL *Lust att lära naturvetenskap och teknik? En longitudinell studie om vägen till gymnasiet*. Göteborg 2003
197. ANN ZETTERQVIST *Ämnesdidaktisk kompetens i evolutionsbiologi. En intervjundersökning med no/ biologilärare*. Göteborg 2003
198. ELSIE ANDERBERG *Språkavvändningens funktion vid utveckling av kunskap om objekt*. Göteborg 2003.
199. JAN GUSTAFSSON *Integration som text, diskursiv och social praktik. En policyetnografisk fallstudie av mötet mellan skolan och förskoleklassen*. Göteborg 2003.
200. EVELYN HERMANSSON *Akademisering och professionalisering – barnmorskans utbildning i förändring*. Göteborg 2003
201. KERSTIN VON BRÖMSEN *Tolkningar, förhandlingar och tystnader. Elevers tal om religion i det mångkulturella och postkoloniala rummet*. Göteborg 2003
202. MARIANNE LINDBLAD FRIDH *Från allmänsjuksköterska till specialistsjuksköterska inom intensivvård. En studie av erfarenheter från specialistutbildningen och från den första yrkesverksamma tiden inom intensivvården*. Göteborg 2003
203. BARBRO CARLI *The Making and Breaking of a Female Culture: The History of Swedish Physical Education 'in a Different Voice'*. Göteborg 2003
204. ELISABETH DAHLBORG-LYCKHAGE *"Systems" konstruktion och mumifiering – i TV-serier och i studenters föreställningar*. Göteborg 2003
205. ULLA HELLSTRÖM MUHLI *Att överbygga perspektiv. En studie av behovsbedömningsamtal inom äldreinriktat socialt arbete*. Göteborg 2003
206. KRISTINA AHLBERG *Synväндor. Universitetsstudenters berättelser om kvalitativa förändringar av sätt att erfara situationers mening under utbildningspraktik*. Göteborg 2004
207. JONAS IVARSSON *Renderings & Reasoning: Studying artifacts in human knowing*. Göteborg 2004
208. MADELEINE LÖWING *Matematikundervisningens konkreta gestaltning. En studie av kommunikationen lärare – elev och matematiklektionens didaktiska ramar*. Göteborg 2004
209. PIJA EKSTRÖM *Makten att definiera. En studie av hur beslutsfattare formulerar villkor för specialpedagogisk verksamhet*. Göteborg 2004
210. CARIN ROOS *Skriftspråkande döva barn. En studie om skriftspråkligt lärande i förskola och skola*. Göteborg 2004
211. JONAS LINDEROTH *Datorspelandets mening. Bortom idén om den interaktiva illusionen*. Göteborg 2004
212. ANITA WALLIN *Evolutionsteorin i klassrummet. På väg mot en ämnesdidaktisk teori för undervisning i biologisk evolution*. Göteborg 2004
213. EVA HJÖRNE *Excluding for inclusion? Negotiating school careers and identities in pupil welfare settings in the Swedish school*. Göteborg 2004
214. MARIE BLIDING *Inneslutandets och uteslutandets praktik. En studie av barns relationsarbete i skolan*. Göteborg 2004
215. LARS-ERIK JONSSON *Appropriating Technologies in Educational Practices. Studies in the Contexts of Compulsory Education, Higher Education, and Fighter Pilot Training*. Göteborg 2004
216. MIA KARLSSON *An ITiS Teacher Team as a Community of Practice*. Göteborg 2004
217. SILWA CLAESSION *Lärares levda kunskap*. Göteborg 2004
218. GUN-BRITT WÄRVIK *Ambitioner att förändra och artefaktens verkan. Gränsskapande och stabiliserande praktiker på produktionsgolvet*. Göteborg 2004

219. KARIN LUMSDEN WASS *Vuxenutbildning i omvandling. Kunskapslyftet som ett sätt att organisera förnyelse.* Göteborg 2004
220. LENA DAHL *Amningspraktikens villkor. En intervjustudie av en grupp kvinnors föreställningar på och erfarenheter av amning.* Göteborg 2004
221. ULRIC BJÖRCK *Distributed Problem-Based Learning. Studies of a Pedagogical Model in Practice.* Göteborg 2004
222. ANNEKA KNUTSSON *"To the best of your knowledge and for the good of your neighbour". A study of traditional birth attendants in Addis Ababa, Ethiopia.* Göteborg 2004
223. MARIANNE DOVEMARK *Ansvar – flexibilitet – valfrihet. En etnografisk studie om en skola i förändring.* Göteborg 2004
224. BJÖRN HAGLUND *Traditioner i möte. En kvalitativ studie av fritidspedagogers arbete med samlingar i skolan.* Göteborg 2004
225. ANN-CHARLOTTE MÅRDSJÖ *Lärandets skiftande innebörder – uttryckta av förskollärare i vidareutbildning.* Göteborg 2005
226. INGRID GRUNDÉN *Att återerövra kroppen. En studie av livet efter en ryggmärgsskada.* Göteborg 2005
227. KARIN GUSTAFSSON & ELISABETH MELLGREN *Barns skriftspråkande – att bli en skrivande och läsande person.* Göteborg 2005
228. GUNNAR NILSSON *Att äga π. Praxisnära studier av lärarstudenters arbete med geometrilaborationer.* Göteborg 2005.
229. BENGT LINDGREN *Bild, visualitet och vetande. Diskussion om bild som ett kunskapsfält inom utbildning.* Göteborg 2005
230. PETRA ANGERVALL *Jämställhetsarbetets pedagogik. Dilemman och paradoxer i arbetet med jämställdhet på ett företag och ett universitet.* Göteborg 2005
231. LENNART MAGNUSSON *Designing a responsive support service for family carers of frail older people using ICT.* Göteborg 2005
232. MONICA REICHENBERG *Gymnasieelever samtalar kring facktexter. En studie av textsamtal med goda och svaga läsare.* Göteborg 2005
233. ULRICA WOLFF *Characteristics and varieties of poor readers.* Göteborg 2005
234. CECILIA NIELSEN *Mellan fakticitet och projekt. Läs- och skrivsvårigheter och strövan att övervinna dem.* Göteborg 2005.
235. BERTH HEDBERG *Decision Making and Communication in Nursing Practice. Aspects of Nursing Competence.* Göteborg 2005
236. MONICA ROSÉN, EVA MYRBERG & JAN-ERIC GUSTAFSSON *Läskompetens i skolår 3 och 4. Nationell rapport från PIRLS 2001 i Sverige. The IEA Progress in International Reading Literacy Study.* Göteborg 2005
237. INGRID HENNING LOEB *Utveckling och förändring i kommunal vuxenutbildning. En yrkeshistorisk ingång med berättelser om lärarbanor.* Göteborg 2006.
238. NIKLAS PRAMLING *Minding metaphors: Using figurative language in learning to represent.* Göteborg 2006
239. KONSTANTIN KOUGIOUMTZIS *Lärarkulturer och professionskoder. En komparativ studie av idrottslärare i Sverige och Grekland.* Göteborg 2006
240. STEN BÄTH *Kvalifikation och medborgarfostran. En analys av reformtexter avseende gymnasieskolans samhällsuppdrag.* Göteborg 2006.
241. EVA MYRBERG *Fristående skolor i Sverige – Effekter på 9-10-åriga elevers läsförståelse.* Göteborg 2006
242. MARY-ANNE HOLFVE-SABEL *Attitudes towards Swedish comprehensive school. Comparisons over time and between classrooms in grade 6.* Göteborg 2006
243. CAROLINE BERGGREN *Entering Higher Education – Gender and Class Perspectives.* Göteborg 2006
244. CRISTINA THORNELL & CARL OLIVESTAM *Kulturmöte i centralafrikansk kontext med kyrkan som arena.* Göteborg 2006
245. ARVID TREEKREM *Att leda som man lär. En arbetsmiljöpedagogisk studie av toppledares ideologier om ledarskapets taktiska potentialer.* Göteborg 2006
246. EVA GANNERUD & KARIN RÖNNERMAN *Innehåll och innebörd i lärares arbete i förskola och skola – en fallstudie ur ett genusperspektiv.* Göteborg 2006
247. JOHANNES LUNNEBLAD *Förskolan och mångfalden – en etnografisk studie på en förskola i ett multietniskt område.* Göteborg 2006
248. LISA ASP-ON SJÖ *Åtgärdsprogram – dokument eller verktyg? En fallstudie i en kommun.* Göteborg 2006
249. EVA JOHANSSON & INGRID PRAMLING SAMUELSSON *Lek och läroplan. Möten mellan barn och lärare i förskola och skola.* Göteborg 2006
250. INGER BJÖRNELOO *Innebörder av hållbar utveckling. En studie av lärares utsagor om undervisning.* Göteborg 2006
251. EVA JOHANSSON *Etiska överenskommelser i förskolebarns världar.* Göteborg 2006
252. MONICA PETERSSON *Att genusrapport på säker eller osäker mark. Hem- och konsumentkunskap ur ett könsperspektiv.* Göteborg 2007
253. INGELA OLSSON *Handlingskompetens eller inlärd hjälplighet? Lärandeprocesser hos verkstadsindustriarbetare.* Göteborg 2007

254. HELENA PEDERSEN *The School and the Animal Other. An Ethnography of human-animal relations in education.* Göteborg 2007
255. ELIN ERIKSEN ØDEGAARD *Meningsskapning i barnehagen. Innhold og bruk av barns og voksnes samtalefortellinger.* Göteborg 2007
256. ANNA KLERFELT *Barns multimediala berättande. En länk mellan mediakultur och pedagogisk praktik.* Göteborg 2007
257. PETER ERLANDSON *Docile bodies and imaginary minds: on Schön's reflection-in-action.* Göteborg 2007
258. SONJA SHERIDAN OCH PIA WILLIAMS *Dimensioner av konstruktiv konkurrens. Konstruktiva konkurrensformer i förskola, skola och gymnasium.* Göteborg 2007
259. INGELA ANDREASSON *Elevplanen som text - om identitet, genus, makt och styrning i skolans elevdokumentation.* Göteborg 2007
- Editors: Jan-Eric Gustafsson, Annika Härenstam and Ingrid Pramling Samuelsson
260. ANN-SOFIE HOLM *Relationer i skolan. En studie av feminiteter och maskuliniteter i år 9.* Göteborg 2008
261. LARS-ERIK NILSSON *But can't you see they are lying: Student moral positions and ethical practices in the wake of technological change.* Göteborg 2008
262. JOHAN HÄGGSTRÖM *Teaching systems of linear equations in Sweden and China: What is made possible to learn?* Göteborg 2008
263. GUNILLA GRANATH *Milda makter! Utvecklingsamtal och loggböcker som disciplinerings tekniker.* Göteborg 2008
264. KARIN GRAHN *Flickor och pojkar i idrottens läromedel. Konstruktioner av genus i ungdomsträna utbildningen.* Göteborg 2008.
265. PER-OLOF BENTLEY *Mathematics Teachers and Their Conceptual Models. A New Field of Research.* Göteborg 2008
266. SUSANNE GUSTAVSSON *Motstånd och mening. Innebörd i blivande lärares seminarsamtal.* Göteborg 2008
267. ANITA MAT'TSSON *Flexibel utbildning i praktiken. En fallstudie av pedagogiska processer i en distansutbildning med en öppen design för samarbetslärande.* Göteborg 2008
268. ANETTE EMILSON *Det önskvärda barnet. Fostran uttryckt i vardagliga kommunikationshandlingar mellan lärare och barn i förskolan.* Göteborg 2008
269. ALLI KLAPP LEKHOLM *Grades and grade assignment: effects of student and school characteristics.* Göteborg 2008
270. ELISABETH BJÖRKLUND *Att erövra litteracitet. Små barns kommunikativa möten med berättande, bilder, text och tecken i förskolan.* Göteborg 2008
271. EVA NYBERG *Om livets kontinuitet. Undervisning och lärande om växters och djurs livscyklar - en fallstudie i årskurs 5.* Göteborg 2008
272. CANCELLED
273. ANITA NORLUND *Kritisk saksprövläsning i gymnasieskolan. Didaktiska perspektiv på läroböcker, lärare och nationella prov.* Göteborg 2009
274. AGNETA SIMEONSDOTTER SVENSSON *Den pedagogiska samlingen i förskoleklassen. Barns olika sätt att erbjuda och hantera svårigheter.* Göteborg 2009
275. ANITA ERIKSSON *Om teori och praktik i lärutbildningen. En etnografisk och diskursanalytisk studie.* Göteborg 2009
276. MARIA HJALMARSSON *Lärarprofessionens genusordning. En studie av lärares uppfattningar om arbetsuppgifter, kompetens och förväntningar.* Göteborg 2009.
277. ANNE DRAGEMARK OSCARSON *Self-Assessment of Writing in Learning English as a Foreign Language. A Study at the Upper Secondary School Level.* Göteborg 2009
278. ANNIKA LANTZ-ANDERSSON *Framing in Educational Practices. Learning Activity, Digital Technology and the Logic of Situated Action.* Göteborg 2009
279. RAUNI KARLSSON *Demokratiska värden i förskolebarns vardag.* Göteborg 2009
280. ELISABETH FRANK *Läsförmågan bland 9-10-åringar. Betydelsen av skolklimat, hem- och skolsamverkan, lärarkompetens och elevers hembakgrund.* Göteborg 2009
281. MONICA JOHANSSON *Anpassning och motstånd. En etnografisk studie av gymnasieelevers institutionella identitetsskapande.* Göteborg 2009
282. MONA NILSEN *Food for Thought. Communication and the transformation of work experience in web-based in-service training.* Göteborg 2009
283. INGA WERNERSSON (RED) *Genus i förskola och skola. Förändringar i policy, perspektiv och praktik.* Göteborg 2009
284. SONJA SHERIDAN, INGRID PRAMLING SAMUELSSON & EVA JOHANSSON (RED) *Barns tidiga lärande. En tvärsnittstudie om förskolan som miljö för barns lärande.* Göteborg 2009
285. MARIE HJALMARSSON *Lojalitet och motstånd - anställdas agerande i ett föränderligt bemötandearbete.* Göteborg 2009.

286. ANETTE OLIN *Skolans mötespraktik - en studie om skolutveckling genom yrkesverksammas förståelse*. Göteborg 2009

287. MIRELLA FORSBERG AHLCRONA *Handdockans kommunikativa potential som medierande redskap i förskolan*. Göteborg 2009

288. CLAS OLANDER *Towards an interlanguage of biological evolution: Exploring students' talk and writing as an arena for sense-making*. Göteborg 2010

Editors: Jan-Eric Gustafsson, Åke Ingerman and Ingrid Pramling Samuelsson

289. PETER HASSELSKOG *Slöjdlärares förhållningsätt i undervisningen*. Göteborg 2010

290. HILLEVI PRELL *Promoting dietary change. Intervening in school and recognizing health messages in commercials*. Göteborg 2010

291. DAVOUD MASOUMI *Quality Within E-learning in a Cultural Context. The case of Iran*. Göteborg 2010

292. YLVA ODENBRING *Kramar, kategoriseringar och hjälpfröknar. Könskonstruktioner i interaktion i förskola, förskoleklass och skolar ett*. Göteborg 2010

293. ANGELIKA KULLBERG *What is taught and what is learned. Professional insights gained and shared by teachers of mathematics*. Göteborg 2010

294. TORGEIR ALVESTAD *Barnebagens relasjonelle verden - små barn som kompetente aktörer i produktive forhandlinger*. Göteborg 2010

295. SYLVI VIGMO *New spaces for Language Learning. A study of student interaction in media production in English*. Göteborg 2010

296. CAROLINE RUNESDOTTER *I otakt med tiden? Folkhögskolorna i ett föränderligt fält*. Göteborg 2010

297. BIRGITTA KULLBERG *En etnografisk studie i en thailändsk grundskola på en ö i södra Thailand. I sökandet efter en framtid då nuet har nog av sitt*. Göteborg 2010

298. GUSTAV LYMER *The work of critique in architectural education*. Göteborg 2010

299. ANETTE HELLMAN *Kan Batman vara rosa? Förhandlingar om pojkighet och normalitet på en förskola*. Göteborg 2010

300. ANNIKA BERGVIKEN-RENSFELDT *Opening higher education. Discursive transformations of distance and higher education government*. Göteborg 2010

301. GETAHUN YACOB ABRAHAM *Education for Democracy? Life Orientation: Lessons on Leadership Qualities and Voting in South African Comprehensive Schools*. Göteborg 2010

302. LENA SJÖBERG *Bäst i klassen? Lärare och elever i svenska och europeiska policytexter*. Göteborg 2011

303. ANNA POST *Nordic stakeholders and sustainable catering*. Göteborg 2011

304. CECILIA KILHAMN *Making Sense of Negative Numbers*. Göteborg 2011

305. ALLAN SVENSSON (RED) *Utvärdering Genom Uppföljning. Longitudinell individforskning under ett halvsekel*. Göteborg 2011

306. NADJA CARLSSON *I kamp med skriftspråket. Vuxenstuderande med läs- och skrivsvårigheter i ett livsvärldsperspektiv*. Göteborg 2011

307. AUD TORILL MELAND *Ansvar för egen läring. Intensjoner og realiteter ved en norsk videregående skole*. Göteborg 2011

308. EVA NYBERG *Folkbildning för demokrati. Colombianska kvinnors perspektiv på kunskap som förändringskraft*. Göteborg 2011

309. SUSANNE THULIN *Lärares tal och barns nyfikenhet. Kommunikation om naturvetenskapliga innehåll i förskolan*. Göteborg 2011

310. LENA FRIDLUND *Interkulturell undervisning – ett pedagogiskt dilemma. Talet om undervisning i svenska som andraspråk och i förberedelseklass*. Göteborg 2011

311. TARJA ALATALO *Skicklig läs- och skrivundervisning i åk 1-3. Om lärares möjligheter och hinder*. Göteborg 2011

312. LISE-LOTTE BJERVÅS *Samtal om barn och pedagogisk dokumentation som bedömningspraktik i förskolan. En diskursanalys*. Göteborg 2011

313. ÅSE HANSSON *Ansvar för matematiklärande. Effekter av undervisningsansvar i det flerspråkiga klassrummet*. Göteborg 2011

314. MARIA REIS *Att ordna, från ordning till ordning. Yngre förskolebarns matematiserande*. Göteborg 2011

315. BENIAMIN KNUTSSON *Curriculum in the Era of Global Development – Historical Legacies and Contemporary Approaches*. Göteborg 2011

316. EVA WEST *Undervisning och lärande i naturvetenskap. Elevers lärande i relation till en forskningsbaserad undervisning om ljud, hörsel och hälsa*. Göteborg 2011

317. SIGNILD RISENFORS *Gymnasieungdomars livstolkande*. Göteborg 2011

318. EVA JOHANSSON & DONNA BERTHELSEN (Ed.) *Spaces for Solidarity and Individualism in Educational Contexts*. Göteborg 2012

319. ALASTAIR HENRY *L3 Motivation*. Göteborg 2012

320. ANN PARINDER *Ungdomars matval – erfarenheter, visioner och miljöargument i eget hushåll*. Göteborg 2012

321. ANNE KULTTI *Flerspråkiga barn i förskolan: Villkor för deltagande och lärande*. Göteborg 2012

322. BO-LENNART EKSTRÖM *Kontroversen om D.A.M.P. En kontroversstudie av vetenskapligt gränsarbete och översättning mellan olika kunskapsparadigm.* Göteborg 2012
323. MUN LING LO *Variation Theory and the Improvement of Teaching and Learning.* Göteborg 2012
324. ULLA ANDRÉN *Self-awareness and self-knowledge in professions. Something we are or a skill we learn.* Göteborg 2012
325. KERSTIN SIGNERT *Variation och invariants i Maria Montessoris sinnestränande materiel.* Göteborg 2012
326. INGEMAR GERRBO *Idén om en skola för alla och specialpedagogisk organisering i praktiken.* Göteborg 2012
327. PATRIK LILJA *Contextualizing inquiry. Negotiations of tasks, tools and actions in an upper secondary classroom.* Göteborg 2012
328. STEFAN JOHANSSON *On the Validity of Reading Assessments: Relationships Between Teacher Judgements, External Tests and Pupil Self-assessments.* Göteborg 2013
329. STEFAN PETTERSSON *Nutrition in Olympic Combat Sports. Elite athletes' dietary intake, hydration status and experiences of weight regulation.* Göteborg 2013
330. LINDA BRADLEY *Language learning and technology – student activities in web-based environments.* Göteborg 2013
331. KALLE JONASSON *Sport Has Never Been Modern.* Göteborg 2013
332. MONICA HARALDSSON STRÅNG *Yngre elevers lärande om natur. En studie av kommunikation om modeller i institutionella kontexter.* Göteborg 2013
333. ANN VALENTIN KVIST *Immigrant Groups and Cognitive Tests – Validity Issues in Relation to Vocational Training.* Göteborg 2013
334. ULRIKA BENNERSTEDT *Knowledge at play. Studies of games as members' matters.* Göteborg 2013
335. EVA ÄRLEMALM-HAGSÉR *Engagerade i världens bästa? Lärande för hållbarhet i förskolan.* Göteborg 2013
336. ANNA-KARIN WYNDHAMN *Tänka fritt, tänka rätt. En studie om värdeöverföring och kritiskt tänkande i gymnasieskolans undervisning.* Göteborg 2013
337. LENA TYRÉN *"Vi får ju inte riktigt förutsättningarna för att genomföra det som vi vill." En studie om lärares möjligheter och hinder till förändring och förbättring i praktiken.* Göteborg 2013
338. ANNIKA LILJA *Förtroendefulla relationer mellan lärare och elev.* Göteborg 2013
339. MAGNUS LEVINSSON *Evidens och existens. Evidensbaserad undervisning i ljuset av lärares erfarenheter.* Göteborg 2013
340. ANNELI SCHWARTZ *Pedagogik, plats och prestationer. En etnografisk studie om en skola i förorten.* Göteborg 2013
341. ELISABET ÖHRN och LISBETH LUNDAHL (red) *Kön och karriär i akademien. En studie inom det utbildningsvetenskapliga fältet.* Göteborg 2013
342. RICHARD BALDWIN *Changing practice by reform. The recontextualisation of the Bologna process in teacher education.* Göteborg 2013
343. AGNETA JONSSON *Att skapa läroplan för de yngsta barnen i förskolan. Barns perspektiv och nuets didaktik.* Göteborg 2013
344. MARIA MAGNUSSON *Skytla med kunskap. En studie av hur barn urskiljer grafiska symboler i hem och förskola.* Göteborg 2013
345. ANNA-JENA LILLIESTAM *Aktör och struktur i historieundervisning. Om utveckling av elevers historiska resonering.* Göteborg 2013
346. KRISTOFFER LARSSON *Kritiskt tänkande i grundskolans samhällskunskap. En fenomenografisk studie om manifesterat kritiskt tänkande i samhällskunskap hos elever i årskurs 9.* Göteborg 2013
347. INGA WERNERSSON och INGEMAR GERRBO (red) *Differentieringens janusansikte. En antologi från Institutionen för pedagogik och specialpedagogik vid Göteborgs universitet.* Göteborg 2013
348. LILL LANGELOTZ *Vad gör en skicklig lärare? En studie om kollegial handledning som utvecklingspraktik.* Göteborg 2014
349. STEINGERDUR OLAFSDOTTIR *Television and food in the lives of young children.* Göteborg 2014
350. ANNA-CARIN RAMSTEN *Kunskaper som byggde folkhemmet. En fallstudie av förutsättningar för lärande vid tekniskskiften inom processindustrin.* Göteborg 2014
351. ANNA-CARIN BREDMAR *Lärares arbetsglädje. Betydelsen av emotionell närvaro i det pedagogiska arbetet.* Göteborg 2014
352. ZAHRA BAYATI *"den Andre" i lärutbildningen. En studie om den rasifierade svenska studentens villkor i globaliseringsens tid.* Göteborg 2014
353. ANDERS EKLÖF *Project work, independence and critical thinking.* Göteborg 2014
354. EVA WENNÄS BRANTE *Möte med multimodalt material. Vilken roll spelar dyslexi för uppfattandet av text och bild?* Göteborg 2014
355. MAGNUS FERRY *Idrottsprofilerad utbildning – i spåren av en avreglerad skola.* Göteborg 2014

Editors: Jan-Eric Gustafsson, Åke Ingerman and Pia Williams

- 356 CECILIA THORSEN *Dimensionality and Predictive validity of school grades: The relative influence of cognitive and socialbehavioral aspects.* Göteborg 2014
- 357 ANN-MARIE ERIKSSON *Formulating knowledge. Engaging with issues of sustainable development through academic writing in engineering education.* Göteborg 2014
- 358 PÅR RYLANDER *Tränarens makt över spelare i lagidrotter: Sett ur French och Ravens maktbasteori.* Göteborg 2014
- 359 PERNILLA ANDERSSON VARGA *Skrivundervisning i gymnasieskolan. Svenskämnets roll i den sociala reproduktionen.* Göteborg 2014
- 360 GUNNAR HYLTEGREN *Vaghet och vanmakt - 20 år med kunskapskrav i den svenska skolan.* Göteborg 2014
- 361 MARIE HEDBERG *Idrotten sätter agendan. En studie av Riksidrottsgymnasietränarens handlande utifrån sitt dubbla uppdrag.* Göteborg 2014
- 362 KARI-ANNE JØRGENSEN *What is going on out there? - What does it mean for children's experiences when the kindergarden is moving their everyday activities into the nature - landscapes and its places?* Göteborg 2014
- 363 ELISABET ÖHRN och ANN-SOFIE HOLM (red) *Att lyckas i skolan. Om skolprestationer och kön i olika undervisningspraktiker.* Göteborg 2014
- 364 ILONA RINNE *Pedagogisk takt i betygssamtal. En fenomenologisk hermeneutisk studie av gymnasielärares och elevers förståelse av betyg.* Göteborg 2014
- 365 MIRANDA ROCKSÉN *Reasoning in a Science Classroom.* Göteborg 2015
- 366 ANN-CHARLOTTE BIVALL *Helpdesking: Knowing and learning in IT support practices.* Göteborg 2015
- 367 BIRGITTA BERNE *Naturvetenskap möter etik. En klassrumsstudie av elevers diskussioner om samhällsfrågor relaterade till bioteknik.* Göteborg 2015
- 368 AIRI BIGSTEN *Fostran i förskolan.* Göteborg 2015
- 369 MARITA CRONQVIST *Yrkesetik i lärarutbildning - en balanskonst.* Göteborg 2015
- 370 MARITA LUNDSTRÖM *Förskolebarns strävanden att kommunicera matematik.* Göteborg 2015
- 371 KRISTINA LANÅ *Makt, kön och diskurser. En etnografisk studie om elevers aktörskap och positioneringar i undervisningen.* Göteborg 2015
- 372 MONICA NYVALLER *Pedagogisk utveckling genom kollegial granskning: Fallstudier Lärande Besök utifrån aktör-nätverksteori.* Göteborg 2015
- 373 GLENN ØVREVIK KJERLAND *Å lære å undervise i kroppsøving. Design for utvikling av teoribasert undervisning og kritisk refleksjon i kroppsøvingslærerutdanningen.* Göteborg 2015
- 374 CATARINA ECONOMOU *"I svenska två vågar jag prata mer och så". En didaktisk studie om skolämnet svenska som andraspråk.* Göteborg 2015
- 375 ANDREAS OTTEMØ *Kön, kropp, begär och teknikk: Passion og instrumentalitet på två tekniske høyskoleprogram.* Göteborg 2015
- 376 SHRUTI TANEJA JOHANSSON *Autism-in-context. An investigation of schooling of children with a diagnosis of autism in urban India.* Göteborg 2015
- 377 JAANA NEHEZ *Rektors praktiker i møte med utvecklingsarbete. Möjligheter och hinder för planerad förändring.* Göteborg 2015
- 378 OSA LUNDBERG *Mind the Gap – Ethnography about cultural reproduction of difference and disadvantage in urban education.* Göteborg 2015
- 379 KARIN LAGER *I spänningsfältet mellan kontroll och utveckling. En policystudie av systematiskt kvalitetsarbete i kommunen, förskolan och fritidsheimet.* Göteborg 2015
- 380 MIKAELA ÅBERG *Doing Project Work. The Interactional Organization of Tasks, Resources, and Instructions.* Göteborg 2015
- 381 ANN-LOUISE LJUNGBLAD *Takt och hållning - en relationell studie om det oberäkneliga i matematikundervisningen.* Göteborg 2016
- 382 LINN HÅMAN *Extrem jakt på hälsa. En explorativ studie om ortorexia nervosa.* Göteborg 2016
- 383 EVA OLSSON *On the impact of extramural English and CLIL on productive vocabulary.* Göteborg 2016
- 384 JENNIE SIVENBRING *I den betraktades ögon. Ungdomar om bedömning i skolan.* Göteborg 2016
- 385 PERNILLA LAGERLÖF *Musical play. Children interacting with and around music technology.* Göteborg 2016
- 386 SUSANNE MECKBACH *Mästarcoacherna. Att bli, vara och utvecklas som tränare inom svensk elitfotboll.* Göteborg 2016
- 387 LISBETH GYLLANDER TORKILDSEN *Bedömning som gemensam angelägenhet – enkelt i retoriken, svårare i praktiken. Elevers och lärares förståelse och erfarenheter.* Göteborg 2016
- 388 cancelled
- 389 PERNILLA HEDSTRÖM *Hälsocoach i skolan. En utvärderande fallstudie av en hälsofrämjande intervention.* Göteborg 2016

Editors: Åke Ingerman, Pia Williams and
Elisabet Öhrn

390 JONNA LARSSON *När fysik blir lärområde i förskolan*. Göteborg 2016

391 EVA M JOHANSSON *Det motsägelsefulla bedömningsuppdraget. En etnografisk studie om bedömning i förskolekontext*. Göteborg 2016

392 MADELEINE LÖWING *Diamant – diagnoser i matematik. Ett kartläggningsmaterial baserat på didaktisk ämnesanalys*. Göteborg 2016

393 JAN BLOMGREN *Den svårfångade motivationen: elever i en digitaliserad lärmiljö*. Göteborg 2016

394 DAVID CARLSSON *Vad är religionsläroverkenskap? En diskursanalys av preparissamtal i lärarutbildningen*. Göteborg 2017

395 EMMA EDSTRAND *Learning to reason in environmental education: Digital tools, access points to knowledge and science literacy*. Göteborg 2017

396 KATHARINA DAHLBÄCK *Svenskämnets estetiska dimensioner - i klassrum, kursplaner och lärares uppfattningar*. Göteborg 2017

397 K GABRIELLA THORELL *Framåt marsch! – Riddlärarrollen från dåtid till samtid med perspektiv på framtid*. Göteborg 2017

398 RIMMA NYMAN *Interest and Engagement: Perspectives on Mathematics in the Classroom*. Göteborg 2017

399 ANNIKA HELLMAN *Visuella möjlighetsrum. Gymnasieelevers subjektsskapande i bild och medieundervisning*. Göteborg 2017

400 OLA STRANDLER *Performativa lärarpraktiker*. Göteborg 2017

401 AIMEE HALEY *Geographical Mobility of the Tertiary Educated – Perspectives from Education and Social Space*. Göteborg 2017

402 MALIN SVENSSON *Hoppet om en framtidsplats. Asylsökande barn i den svenska skolan*. Göteborg 2017

403 CATARINA ANDISHMAND *Fritidsbem eller servicebem? En etnografisk studie av fritidsbem i tre socioekonomiskt skilda områden*. Göteborg 2017

404 MONICA VIKNER STAFBERG *Om lärarlivande. En livsvärldsfenomenologisk studie av bildningsgångar in i läraryrket*. Göteborg 2017

405 ANGELICA SIMONSSON *Sexualitet i klassrummet. Språkundervisning, elevsubjektivitet och heteronormativitet*. Göteborg 2017

406 ELIAS JOHANNESSON *The Dynamic Development of Cognitive and Socioemotional Traits and Their Effects on School Grades and Risk of Unemployment*. Göteborg 2017

407 EVA BORGFELDT *"Det kan vara svårt att förklara på rader". Perspektiv på analys och bedömning av multimodal textproduktion i årskurs 3*. Göteborg 2017

408 GÉRALDINE FAUVILLE *Digital technologies as support for learning about the marine environment. Steps toward ocean literacy*. Göteborg 2018

409 CHARLOTT SELLBERG *Training to become a master mariner in a simulator-based environment: The instructors' contributions to professional learning*. Göteborg 2018

410 TUULA MAUNULA *Students' and Teachers' Jointly Constituted Learning Opportunities. The Case of Linear Equations*. Göteborg 2018

411 EMMALEE GISSLEVIK *Education for Sustainable Food Consumption in Home and Consumer Studies*. Göteborg 2018

412 FREDRIK ZIMMERMAN *Det tillåtande och det begränsande. En studie om pojkars syn på studier och ungdomars normer kring maskulinitet*. Göteborg 2018

413 CHRISTER MATTSSON *Extremisten i klassrummet. Perspektiv på skolans förväntade ansvar att förhindra framtida terrorism*. Göteborg 2018

414 HELENA WALLSTRÖM *Gymnasielärares mentorhandlingar. En verksamhetsteoretisk studie om lärararbete i förändring*. Göteborg 2018

415 LENA ECKERHOLM *Lärarperspektiv på läsförståelse. En intervjustudie om undervisning i årskurs 4-6*. Göteborg 2018

416 CHRISTOPHER HOLMBERG *Food, body weight, and health among adolescents in the digital age: An explorative study from a health promotion perspective*. Göteborg 2018

417 MAGNUS KARLSSON *Moraliskt arbete i förskolan. Regler och moralisk ordning i barn-barn och vuxen-barn interaktion*. Göteborg 2018

418 ANDREAS FRÖBERG *Physical Activity among Adolescents in a Swedish Multicultural Area. An Empowerment-Based Health Promotion School Intervention*. Göteborg 2018

419 EWA SKANTZ ÅBERG *Children's collaborative technology-mediated story making. Instructional challenges in early childhood education*. Göteborg 2018

420 PER NORDÉN *Regnbågsungar: Familj, utbildning, fritid*. Göteborg 2018

421 JENNY RENDAHL *Vem och vad kan man lära på? Ungdomars förhållningsätt till budskap om mat och ätande utifrån ett forskarinitierat rollspel*. Göteborg 2018

422 MARTINA WYSZYNSKA JOHANSSON *Student experience of vocational becoming in upper secondary vocational education and training. Navigating by feedback*. Göteborg 2018

423 MALIN NILSEN *Barns och lärares aktiviteter med datorplattor och appar i förskolan*. Göteborg 2018

- 424 LINDA BORGER *Investigating and Validating Spoken Interactional Competence – Rater Perspectives on a Swedish National Test of English*. Göteborg 2018
- 425 ANNA-MARIA FJELLMAN *School choice, space and the geography of marketization – Analyses of educational restructuring in upper secondary education in Sweden*. Göteborg 2019
- 426 ANNELI BERGNELL *Med kroppen som illustration: Hur förskolebarn prat-skapar naturvetenskap med hjälp av multimodala och kroppsförankrade förklaringar*. Göteborg 2019
- 427 ANNE SOLLI *Handling socio-scientific controversy: Students' reasoning through digital inquiry*. Göteborg 2019
- 428 MARTIN GÖTHBERG *Interacting - coordinating text understanding in a student theatre production*. Göteborg 2019
- 429 SUSANNE STRÖMBERG JÄMSVI *Unpacking dominant discourses in higher education language policy*. Göteborg 2019
- 430 KURT WICKE *Läroböcker, demokrati och medborgarskap. Konstruktioner i läroböcker i samhällskunskap för gymnasiet*. Göteborg 2019
- 431 KATARINA SAMUELSSON *Teachers' Work in Times of Restructuring. On Contextual Influences for Collegiality and Professionalism*. Göteborg 2019
- 432 HELÉNE BERGENTOFT *Lärande av rörelseförmåga i idrott och hälsa ur ett praktikutvecklande perspektiv*. Göteborg 2019
- 433 JANNA MEYER-BEINING *Assessing writers, assessing writing: a dialogical study of grade delivery in Swedish higher education*. Göteborg 2019
- 434 DAN FRANSSON *Game demands and fatigue profiles in elite football – an individual approach -Implications of training and recovery strategies*. Göteborg 2019
- 435 ELIN ARVIDSON *Physiological responses to acute physical and psychosocial stress – relation to aerobic capacity and exercise training*. Göteborg 2019
- 436 SUSANNE STAF *Skriva historia – literacyförväntningar och elevtexter i historieämnet på mellan- och högstadiet*. Göteborg 2019
- 437 VERONICA SÜLAU *Vad händer i lärares kollegiala samtalspraktik? En studie av mötet mellan en nationell kompetensutvecklingsinsats och en lokal fortbildningspraktik*. Göteborg 2019
- 438 MARIA OHLIN *How to Make Cycling Safer – Identification and Prevention of Serious Injuries among Cyclists*. Göteborg 2019
- 439 LINUS JONSSON *An empowerment-based school physical activity intervention with adolescents in a disadvantaged community: A transformative mixed methods investigation*. Göteborg 2019
- 440 ELIN NORDENSTRÖM *Feedback and instructional guidance in healthcare simulation debriefings*. Göteborg 2019
- 441 KATEŘINA ČERNÁ *Nurses' work practice in chronic care: knowing and learning in the context of patients' self-monitoring data*. Göteborg 2019
- 442 MARGARETHA HÄGGSTRÖM *Estetiska erfarenheter i naturmöten. En fenomenologisk studie av upplevelser av skog, växtlighet och undervisning*. Göteborg 2020
- 443 PANAGIOTA NASIOPOULOU *The professional preschool teacher under conditions of change – competence and intentions in pedagogical practices*. Göteborg 2020
- 444 ANNA TOROPOVA *Teachers meeting the challenges of the Swedish school system. Agents within boundaries*. Göteborg 2020
- 446 ULF RYBERG *Att urskilja grafiska aspekter av derivata – hur elevernas möjligheter påverkas av innehållets behandling i undervisningen*. Göteborg 2020
- 447 KASSAHUN WELDEMARIAM *Reconfiguring Environmental Sustainability in Early Childhood Education: a Postantropocentric Approach*. Göteborg 2020
- 448 ANNE KJELLSDOTTER *Didactical Considerations in the Digitalized Classroom*. Göteborg 2020
- 449 CARINA PETERSON *Val, omröstning, styrning. En etnografisk studie om intentioner med, villkor för och utfall av barns inflytande i förskolan*. Göteborg 2020
- 450 LOTTA WEDMAN *The concept concept in mathematics education: A concept analysis*. Göteborg 2020
- 451 MARLENE SJÖBERG *Samtal om undervisning i naturvetenskap. Ämnesdidaktisk kollegial utveckling i lärarutbildning och lärarprofession*. Göteborg 2020
- 452 LENNART SVENSSON *Kontextuell analys – En forskningsmetodologi och forskningsansats*. Göteborg 2020
- 453 JOHN DOHLSTEN *Vad möjliggör och begränsar en hållbar elitfridrott? Aktionsforskning i elitidrottspraktiker inom Göteborgs fridrottsförbund*. Göteborg 2020
- 454 LENA SOTEVIK *Barbiebröllop och homohundar. Barn och barndomar i relation till queerhet och (heter)normativa livslinjer*. Göteborg 2020.
- 455 FRIDA SIEKKINEN *Att vara och inte vara. Elevpositioner(ingar) i spänningsfältet mellan svenska och svenska som andraspråk*. Göteborg 2021.

456 ANN-CHARLOTT WANK *Meningskapande samtal. En studie om barns meningskapande med fokus på processer och innehåll relaterat till förskolans praktik.* Göteborg 2021.

457 ANDREAS LUNDBERG ZACHRISSON *Overuse injuries in Swedish elite athletics. Incidence, occurrence, athlete availability, and risk factors.* Göteborg 2021.

458 ANNA NORRSTRÖM *Samtal under lärarlagsmöten. Diskursorienteringar i den professionella praktiken.* Göteborg 2021.

459 JOHANNA MELLÉN *Stability and Change. Policy, options, and choice in Swedish upper secondary education.* Göteborg 2021.

460 JONATAN JUNGMALM *Running-related injuries among recreational runners. How many, who, and why?* Göteborg 2021.

461 ELISABETH OHLSSON *Den synliggjorda vokabulären och praktiken. Gymnasieelevers akademiska skrivande på svenska.* Göteborg 2021.

462 VICTORIA ROLFE *Exploring socioeconomic inequality in educational opportunity and outcomes in Sweden and beyond.* Göteborg 2021.

463 JONAS LINDBÄCK *Värsta bästa skolan. Om unga i förorten och segregationen i skolan.* Göteborg 2021.

Editors: Christel Larsson, Elisabeth Öhrn, Pia Williams

464 ANNE-MARIE CEDERQVIST *Seeing the parts, understanding the whole. A technology education perspective on teaching and learning in processes of analysing and designing programmed technological solutions.* Göteborg 2021.

465 MARIE GRICE *Epistemic beliefs and conceptions of competence in education for sustainable development.* Göteborg 2021.

466 KRISTINA HUNEHÅLL BERNDTSSON *Digitala sexuella trakasserier i skolan: Elevperspektiv på sexting, utsatthet och jämställdhet.* Göteborg 2022.

Editors: Christel Larsson, Elisabeth Öhrn, Pia Williams och Olof Franck

467 STINA JERDBORG *Learning Principalship: Becoming a Principal in a Swedish Context. A study of Principals in Education and Practice.* Göteborg 2022.

468 ALEXANDRA SÖDERMAN *Digital studentkultur – om slutna grupper på Facebook som icke-formell arena i högre utbildning.* Göteborg 2022.

469. OLA HENRICSSON *"Som att hålla tiden i sin hand" – Didaktiskt perspektiv på muntligt berättande.* Göteborg 2022.

470 ERIKA MAJOROS *Linking recent and older IEA studies on mathematics and science.* Göteborg 2022.

471 JENNY SVANTESON WESTER *Teaching and learning mathematics with integrated small-group discussions. A learning study about scaling geometric figures.* Göteborg 2022.

472 JASMINE BYLUND *Everyday Language Practices and the Interplay of Ideologies, Investment and Identities. Language Use and Dispositions among Young Adolescents in Multilingual Urban Settings in Sweden.* Göteborg 2022.

473 AGNETA PIHL *Children retelling stories. Responding, reshaping, and remembering in early childhood education and care.* Göteborg 2022.

474 KATARINA NILFYR *Interaktionsmönster, social anpassning och emotioner i förskolan – En mikrosociologisk studie av interaktion mellan förskollärare och barn i målorienterade aktiviteter.* Göteborg 2022

475 LEAH NATASHA GLASSOW *Teacher sorting and the opportunity gap. A cross-national investigation of institutional differentiation and educational equity.* Göteborg 2022

476 ÅSA ANDERSSON *Sustainable inclusion without sustainability. Working with equal participation and unforeseen movement in physical education, sports, and research.* Göteborg 2023

477 INGELA FINNDAHL *Young students' Language Choice in Swedish compulsory school – expectations, learning and assessment.* Göteborg 2023

478 MIKAEL R KARLSSON *Skolförändring, reformer och professionella villkor – en etnografisk studie.* Göteborg 2023

479 LINUS BYLUND *Differentiation, didactics and inequality. How rich and poor populations are educated for sustainability.* Göteborg 2023

480 JONATAN FRIDOLFFSON *Statistical advancements in analyzing accelerometer-measured physical activity intensity* Göteborg 2023

481 OLA FLENNEGÅRD *Uppdrag: Historia och demokrati Perspektiv på studieresor till Förtintelsens minnesplatser.* Göteborg 2023

482 MALIN BRÄNNSTRÖM *Mellan osynlighet och avvikelse – nyanlända elever med kort skolbakgrund i grundskolans senare årskurser.* Göteborg 2023

483 EMELIE STAVHOLM *Teacher professional learning in response to contemporary challenges in early childhood education and care.* Göteborg 2024

484 TANYA K OSBORNE: *Unicorns in Moderation*
Gender and Epistemology on Stack Overflow.
Göteborg 2024

485 DIMITRIOS PAPAPOPOULOS: *Individualising*
processes in adult education: The case of Swedish for
immigrants (SFI). Göteborg 2024

486 ANNA-LENA BORG: *Trygga och otrygga platser*
En etnografisk studie om våld och utsatthet bland barn i
fritidshem. Göteborg 2024

487 PETER JOHANNESSON: *Lärares lärande i*
gränslandet mellan skolans och vetenskapens praktiker.
Aktionsforskning som socialt lärande.
Göteborg 2024

Editors: Christel Larsson, Pia Williams and Olof
Franck

488 LEA ELDSTÅHL-AHRENS: *Learning to argue*
in primary school: A sociocultural study of group discussions.
with argumentative tasks. Göteborg 2024

489 YI DING: *The Self in the School Context:*
Mathematics Self-concept and Self-efficacy in PISA.
Göteborg 2024

490 CLARA PALM: *Skrivundervisning i svenska som*
andraspråk inom vuxenutbildning. Göteborg 2024

491 PANTEA RINNEMAA: *Reading and learning*
from civics textbooks: exploring challenges and opportunities
from students' and teachers' perspective. Göteborg 2024

492 ALENA SEREDKO: *Doing knowledge@scale:*
Sociomaterial Practices and Professional Learning of Software
Developers on Stack Overflow. Göteborg 2024

493 SOLVEIG E.S. HAUSKEN-SUTTER:
Interdisciplinary research and youth sport injury.
Developing methodological insights. Göteborg 2024

494 MARINA KARLSSON: *The Quality Dialogue. An*
activity theoretical study on systematic quality work in a
municipal preschool administration. Göteborg 2024

495 ANNA L.V. LUNDBERG: *Att lära om statisk och*
dynamisk proportionalitet – En studie av den didaktiska
transpositionen av svenska matematikuppgifter med
proportionalitet. Göteborg 2024

496 HADIL ELSAYED: *Health Promotion in Swedish*
schools: Navigating Institutional, Social and Professional
Landscapes. Göteborg 2024

497 NATALIE DAVET: *Generationsmötets*
ambivalenser. Kritiska perspektiv på ålder, tid och rum.
Göteborg 2024

498 SOFIJE SHENGJERGJI: *Play-Responsive Teaching.*
Navigating Semiotic Repertoires and Digital Technologies in
Early Childhood Education and Care. Göteborg 2025

This thesis focuses on teaching in Early Childhood Education Care (ECEC) and how it can be responsive to bi-/multilingual children's semiotic repertoires and support their participation in activities involving digital technologies. It is grounded in PRECEC theory and draws on the literature and principles of design-based research. The empirical data comprises video recordings of digital storytelling activities in which bi-multilingual teachers and children use tablets and a story-making application to co-construct stories. The findings reveal that translanguaging practices—encompassing multiple languages and semiotic modes—enhance participation while challenging deficit-oriented perspectives. Children's agency emerges as a dynamic process, shaped by interactions with peers, teachers, and cultural tools. Furthermore, the dynamic interplay of scaffolding and triggering questions supports children's plot development, narrative coherence, and imagination, underscoring the importance of teachers' capacity to attune to and be responsive to children's understanding, abilities, and their ongoing learning processes. This thesis is relevant to teachers, students, researchers, and policymakers in the field of ECEC.



Sofije Shengjergji with an M.Sc. in Educational Research, researches ECEC teaching, multilingualism, and the use of digital tools in preschool.

