

International Perspectives on
Early Childhood Education and Development 38

Cecilia Wallerstedt
Eva Brooks
Elin Eriksen Ødegaard
Niklas Pramling *Editors*

Methodology for Research with Early Childhood Education and Care Professionals

Example Studies and Theoretical
Elaboration

OPEN ACCESS

 Springer

International Perspectives on Early Childhood Education and Development

Volume 38

Series Editors

Marilyn Fleer, Monash University, Frankston, Australia

Ingrid Pramling Samuelsson, Gothenburg University, Göteborg, Sweden

Editorial Board Members

Jane Bone, Monash University, Frankston, Australia

Anne Edwards, University of Oxford, Oxford, UK

Mariane Hedegaard, University of Copenhagen, Copenhagen, Denmark

Eva Johansson, University of Stavanger, Stavanger, Norway

Rebeca Mejía Arauz, ITESO, Jalisco, Mexico

Cecilia Wallerstedt, Gothenburg University, Göteborg, Sweden

Liang Li , Monash University, Frankston, Australia

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

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

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

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

Please contact Astrid Noordermeer at Astrid.Noordermeer@springer.com to submit a book proposal for the series.

Cecilia Wallerstedt • Eva Brooks
Elin Eriksen Ødegaard • Niklas Pramling
Editors

Methodology for Research with Early Childhood Education and Care Professionals

Example Studies and Theoretical Elaboration

 Springer

Editors

Cecilia Wallerstedt
Department of Education, Communication
& Learning
University of Gothenburg
Gothenburg, Sweden

Eva Brooks 
Department of Culture and Learning
Aalborg University
Aalborg, Denmark

Elin Eriksen Ødegaard
KINDKNOW
Western Norway University of Applied
Sciences
Bergen, Norway

Niklas Pramling
Department of Education, Communication
& Learning
University of Gothenburg
Gothenburg, Sweden



This work was supported by The Swedish Institute for Educational Research

Skolfi 2016/112

ISSN 2468-8746

ISSN 2468-8754 (electronic)

International Perspectives on Early Childhood Education and Development

ISBN 978-3-031-14582-7

ISBN 978-3-031-14583-4 (eBook)

<https://doi.org/10.1007/978-3-031-14583-4>

© The Editor(s) (if applicable) and The Author(s) 2023. This book is an open access publication.

Open Access This book is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this book are included in the book's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the book's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Acknowledgment

The research presented herein and the editorial work have been built in part upon funds received from the Swedish Institute for Educational Research (Skolfi 2016/112) and on funds from the Research Council Norway (project nos. 275575 and 326797), which are gratefully acknowledged.

Contents

Part I Introduction

- 1 Enabling Knowledge Development Relevant for ECEC 3**
Cecilia Wallerstedt and Malin Nilsen

Part II Example Studies

- 2 A Retrospective View on Researchers’
and Preschool Teachers’ Collaboration:
The Case of Developing Children’s Learning in Preschool. 21**
Ingrid Pramling Samuelsson
- 3 Exploring Mixed Roles and Goals in Collaborative Research:
The Example of Toddler Mathematics Education 33**
Camilla Björklund and Hanna Palmér
- 4 Managing the Tension Between the Known
and the Unknown in Knowledge-Building: The Example
of the Play-Responsive Early Childhood Education
and Care (PRECEC) Project 45**
Cecilia Wallerstedt
- 5 Success of and Barriers to Workshop Methodology:
Experiences from Exploration and Pedagogical
Innovation Laboratories (EX-PED-LAB). 57**
Elin Eriksen Ødegaard, Marion Oen, and Johanna Birkeland
- 6 Opening Up New Spaces for Action: Challenges of Participatory
Action Research for Preschool Practice Transformation in an
Introductory Unit for Immigrant Children 83**
Annika Åkerblom

7	Integrating Digital Technologies in Teaching and Learning Through Participation: Case Studies from the Xlab – Design, Learning, Innovation Laboratory	99
	Eva Brooks, Anders Kalsgaard Møller, and Maja Højslet Schurer	
8	Interprofessional Dialogue and the Importance of Contextualising Children’s Participation: A Collaboration Between Different Disciplines Around New Technology	121
	Pernilla Lagerlöf	
9	Mutuality in Collaboration: A Development Project for Teaching in Multilingual ECEC	133
	Anne Kultti	
 Part III Theoretical and Conceptual Discussions and Tools		
10	The Importance of De-reifying Language in Research with Early Childhood Education and Care Professionals: A Critical Feature of Workshop Methodology	145
	Niklas Pramling and Louise Peterson	
11	Responding to Wicked Tensions and Problems in Practices-Developing Research	153
	Elin Eriksen Ødegaard	
12	Terminological and Conceptual Meta-commentaries on Practices-Developing Research	171
	Niklas Pramling and Cecilia Wallerstedt	

About the Authors

Annika Åkerblom, PhD, is a researcher and Associate Professor of Early Childhood Education at the University of Gothenburg, Sweden. Her research centers around early childhood critical didactics and preschool children's understanding of science, the relationship between language and meaning-making, multilingualism, and translanguaging. Her research also includes working with participatory methods and cooperation with children and preschool educators, and with intercultural education. Dr. Åkerblom has published on the role of language and languaging in pedagogical processes, on the reception of migrant children in Swedish preschool, and the development of translanguaging spaces in preschool.

Johanna Birkeland has extensive experience in the kindergarten field as a kindergarten teacher and manager, and in the academic field as a teacher at Western Norway University of Applied Sciences (HVL), teaching pedagogy in the kindergarten teacher education program. In her doctoral thesis, she focused on observations in kindergarten teachers' education and profession. Today, Birkeland is a postdoctoral fellow at HVL, KINDknow – the Kindergarten Knowledge Centre for Systemic Research on Diversity and Sustainable Futures – serving as the leader of WP 9: The competent Kindergarten – systemic knowledge creation and dissemination. She is also co-leading, with Elin Eriksen Ødegaard, sustainable design in kindergarten sector through “Exploration and Pedagogical Innovation Laboratory” [EX-PED-LAB]. She conducts research in the areas of early childhood education, and her research in partnership with kindergartens is central.

Camilla Björklund is Professor of Education at the University of Gothenburg, Sweden. She has extensive experience of practice-oriented research in collaboration with teachers. The focus of her research is mostly mathematics learning in early childhood and teaching involving children aged 1–8 years. Essential to her research designs is a starting point in children's perspectives and how to challenge their ways of understanding some learning object. Her research is thereby directed at developing teaching practice that facilitates children's developing understanding of mathematics as to be meaningful to the individual child.

Eva Brooks is Professor of IT-based Design, Learning, and Innovation in the Department of Culture and Learning, Aalborg University, Denmark. Her research has a design focus on participation, social interaction, and the use and development of digital technology, and their implications for play and learning. Her research also includes an innovation dimension, whereby she applies a design-oriented approach to co-creative processes with children. She has been involved in several research projects concerning children's participation, play, and learning in state-of-the-art technology settings. Currently, her research also has a focus on teachers' professional digital competence, grounded in creative workshops where the learning is participative, collaborative, and peer-oriented.

Maja Højslet Schürer is a PhD fellow in the Department of Culture and Learning, Aalborg University, Denmark. She is part of the Capacity Building and Evaluation (CABE) research group. Her PhD study consists of two parts, the first focusing on involving children in research and the second examining children's perspectives on the transition from preschool to primary school. She previously worked for 13 years as an early childhood educator in a diverse range of school and prior-to-school settings.

Anders Kalsgaard Møller is an assistant professor in the Department of Culture and Learning, Aalborg University, Denmark. He is part of the IT Learning and Design (ILD) research group. He obtained his PhD degree with the dissertation titled "Evaluating 3D Positioned Sound in Multimodal Scenarios" from Aalborg University's Department of Electronic Systems. For the past 3 years, he has been associated with the Xlab laboratory, where his focus has been on user research methods in relation to the development of health technology, VR, learning, and computational thinking.

Anne Kultti holds a PhD in education and is an associate professor at the University of Gothenburg, Sweden. Her research involves equal opportunities for children's learning and development in early childhood education (ECE), and focuses on ECE as a learning environment for multilingual children, communication and participation in preschool activities, teaching, and collaboration between home and ECE. Her research uses a sociocultural perspective on learning and development as its theoretical framework.

Pernilla Lagerlöf works as a senior lecturer in the Department of Education, Communication and Learning at the University of Gothenburg, Sweden. She also has a background as a preschool teacher. Her PhD thesis (2016) was written within the international project Musical Interaction Relying On Reflection (MIROR; EU FP7-ICT, 2010-2013), with a focus on technology-transformed music learning in childhood. She was also involved in the research project Play-based didactics: Developing early childhood didactics theory in collaboration between researchers and preschool teachers (Skolfi 2016/112), resulting in the theorization referred to as play-responsive teaching. Lagerlöf has a research interest in the education of

preschool children, including art and music, and how teachers can help and support children in developing these abilities.

Malin Nilsen is a senior lecturer in the Department of Education, Communication and Learning, University of Gothenburg, Sweden. Her research focuses on language, communication, and learning in connection with children's activities involving digital technologies, including touchscreens and apps.

Marion Oen is a public PhD candidate, employed at the City of Bergen and enrolled in the research program Bildung and Pedagogical Practices at Western Norway University of Applied Sciences (HVL). She has broad experience working in and with kindergartens in the local area, as both a kindergarten teacher and an advisor. Her research interests are directed at partnership research, pedagogical practices in multicultural kindergartens, and children's play. She conducts her research in association with KINDknow – the Kindergarten Knowledge Centre for Systemic Research on Diversity and Sustainable Futures: Conditions for children as explorers.

Elin Eriksen Ødegaard, PhD, is a professor and the director of KINDknow – the Kindergarten Knowledge Centre for Systemic Research on Diversity and Sustainable Futures – at Western Norway University of Applied Sciences. She is co-leading, with Johanna Birkeland, the Sustainable design in kindergarten sector through “Exploration and Pedagogical Innovation Laboratory” [EX-PED-LAB]. She is also the project leader of NORCHILD – Norwegian Research School for Early Childhood Education. She is working with partnership research for professional development in efforts to understand and support conditions for institutional pedagogical practice. Her research interest embraces cultural historical ideas, global and local perspectives, teachers' pedagogies, and changing practices for sustainable futures and children's movement, play, and exploration

Hanna Palmér is Professor of Mathematics Education at Linnaeus University, Sweden. Her research is most often conducted in collaboration with teachers with a focus on mathematics teaching and learning in preschool, preschool class, and primary school. Of special interest is problem solving and digital technology in the teaching and learning of mathematics, as well as the professional identity development of mathematics teachers from all grades.

Louise Peterson is a senior lecturer in the Department of Education, Communication and Learning, University of Gothenburg, Sweden. Her research interest includes people's use of digital technologies in different activities, and how learning takes place and can be understood in boundaries between institutional and non-institutional settings. Louise is particularly interested in the ways in which digital technologies and social media are integrated into children's everyday activities, such as their play. She primarily conducts interdisciplinary studies of people's interaction and communication in online environments, as well as of children's social face-to-face activities.

Niklas Pramling is Professor of Education at the University of Gothenburg, Sweden, and the director of two national research schools for preschool teachers (funded by the Swedish Research Council). He conducts communications research in early childhood education and care settings and beyond.

Ingrid Pramling Samuelsson is Senior Professor of Early Childhood Education in the Department of Education, Communication and Learning at the University of Gothenburg, Sweden. She also holds a UNESCO Chair in Early Childhood Education since 2008, and served as the world president of the World Organization for Early Childhood Education (OMEP) for 6 years. Her main interest in research is preschool children's learning and development, and the preconditions for this in preschool. Based on empirical studies, together with preschool teachers she has developed an approach to ECE called Developmental Pedagogy, which is not only goal-directed but also integrates play and learning. This approach means that children's own perspectives become central to both research and the pedagogical approach. In recent years, she has been involved both nationally and internationally in sustainability involving young children.

Cecilia Wallerstedt is a senior lecturer and Professor of Education in the Department of Education, Communication and Learning at the University of Gothenburg, Sweden. She is also the head of the department. Her research interest concerns knowledge, teaching, and learning in music, and the interaction between teachers and children/pupils. She has conducted practice-based research in several projects in preschool as well as primary and secondary school.

Part I
Introduction

Chapter 1

Enabling Knowledge Development Relevant for ECEC



Cecilia Wallerstedt and Malin Nilsen

Abstract In this first chapter of the volume (Wallerstedt, Brooks, Ødegaard & Pramling, this volume), we will introduce the themes and chapters included. Eight examples of research projects will be given, and even if many denotations are used in the different chapters to describe the methods used, they are all aimed at improving preschool practice and take on social problems in a broader sense. We will discuss how *development projects* or *studies*, *research projects and innovation*, *inquiry-based research* and *professional development programmes*, and *action research approach* relate to praxis-related methodology and its key references. A central aspect is that the focus is on problems that are experienced in preschool, even if the process of formulating these problems differs. Sometimes it is the preschool that initiates contact with academia, while other times it is the researchers who consider it important to collaborate with preschools. Regardless, they are all collaboration projects in which participants from preschools and participants from academia (i.e. researchers) work together, but often in a more explorative way, compared to other studies within the development and praxis-related research tradition.

Introduction

In 2020, at the same time as the COVID-19 pandemic started, a group of Scandinavian Early Childhood Education and Care (ECEC) researchers began conducting regular video seminars. In our discussions, a common interest emerged: the ambition to conduct research in close collaboration with ECEC personnel. This was hard to achieve at the time, due to the pandemic, but it gave us time to reflect. The methodological tradition we could all relate to is based on two overlapping approaches: *praxis-related research* and *developmental research*. We could see that we partly

C. Wallerstedt (✉) · M. Nilsen
Department of Education, Communication and Learning, University of Gothenburg,
Gothenburg, Sweden
e-mail: cecilia.wallerstedt@gu.se

© The Author(s) 2023
C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood
Education and Care Professionals*, International Perspectives on Early
Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_1

deviated from the established knowledge and norms in the field since our focus differed from that of the majority of research in the field, being on ECEC (i.e. preschool), while in educational research the term *practice* typically alludes to other forms of education – and specifically school. We found that there is a significant difference in relation to ECEC research that has to be considered and further examined. This will have a substantial impact on the concepts that are used in this tradition.

With this volume (Wallerstedt et al., this volume), we aim to fill this gap in the methodological literature. We have collected experiences from Scandinavian research in ECEC to identify critical areas of consideration when conducting projects in collaboration between teachers and researchers. In this first chapter, we will introduce some key references in the development and praxis-related methodology. Thereafter, we will introduce the challenges and ‘lessons learned’ that will be described in the chapters of this volume’s second section. Eight examples of research projects are provided. We can see that many denotations are used in the different chapters to describe the methods used, for instance, *development projects* or *studies* (Kultti, this volume, Chap. 9; Pramling Samuelsson, this volume, Chap. 2), *research and innovation project* (Lagerlöf, this volume, Chap. 8), *inquiry-based research* and *professional development programme* (Ødegaard et al., this volume, Chap. 5), and *action research approach* (Brooks et al., this volume, Chap. 7). Despite these differences, they all fit the criteria of praxis-related research by focusing on problems that are experienced in preschool, even if the process of formulating these problems differs. Sometimes it is the preschool that initiates contact with academia (e.g. Kultti, this volume, Chap. 9; Wallerstedt, this volume, Chap. 4), while other times it is the researchers who consider it important to collaborate with preschools (e.g. Pramling Samuelsson, this volume, Chap. 2; Björklund & Palmér, this volume, Chap. 3). While all the described projects aim to improve preschool practice, they also take on social problems in a broader sense (e.g. Åkerblom, this volume, Chap. 6; Brooks et al., this volume, Chap. 7). They are all collaborative projects in which participants from preschools and participants from academia (i.e., researchers) work together, but often in a more explorative way, compared to other studies within the development and praxis-related research tradition. In the third and final section of the volume, three chapters summarise and meta-comment on the presented examples (as presented in Part II of the volume), on both theoretical and pragmatic levels.

Aiming for a Better Society: Two Related Research Approaches

Mattsson and Kemmis (2007) describe praxis-related research as being characterised by a focus on ‘overcoming human suffering, injustice and oppression’ (p. 187). There is a strong ideological basis that can be traced to philosophers like Aristotle

and his idea of putting ‘knowledge into practice’ and Marx, who wanted a change to society that could only become reality with the broad participation of different actors and through collective agency. Lewin, who is said to have been the first action researcher back in the 1940s, claimed that ‘research that produces nothing but books will not suffice’ (1946, p. 35, cited in Mattsson & Kemmis, 2007, p. 187). Hence, not only does praxis-related research aim to make a scientific contribution, its quality should also be measured in terms of its impact on practice (preschools, schools, or other professional domains). This change will be realised through a close collaboration between those responsible for the scientific contribution (researchers) and those responsible for the practice in focus for development (teachers). As Mattsson and Kemmis describe: ‘Researchers and practitioners may be thought of as acting on different fields, but each may try to enter the other’s province of meaning. Where the fields overlap, there is an element of uncertainty about what is to be understood and to be done from two different perspectives’ (p. 188) (see also Pramling & Peterson, this volume, Chap. 10). It is in the communicative space of this uncertainty where praxis-related research can result in both new scientific knowledge and the development of practices. An interactive process is a signature of this kind of research. Another typical aspect is that the researcher may take on the role of a ‘pedagogue or facilitator, inventing and shaping research methods by which co-researchers and ordinary people can come to participate in the research activity’ (ibid.). Praxis-related research is an umbrella term for many kinds of research methods that have these aspects in common, of which action-based research is only one example.

The other approach that serves as a foundation for our research tradition, development research (van den Akker, 1999), is also characterised by a will for change, but, compared to the discourse articulated in praxis-related research, the change to be addressed often lies on a more practical level. One salient motive of development researchers is a wish to avoid the problems of ‘traditional’ research, that is, that the research results in descriptive knowledge that does not lead to solutions to practical problems. The ambition with development research is instead to contribute useful results. Note that in the literature this is often described as a question of either/or (descriptive knowledge vs. useful results) rather than of both/and. Another motive is the desire to recognise the complexity of educational ‘reality’, so that all its dimensions are embraced already in the research phase, not to be laid aside until results are to be applied in classrooms. Development research, typically conducted in collaboration with teachers or other practitioners, consists of a cyclic or spiral design, and its outcomes are formulated as ‘design principles’. Ideally, the research presents a thick description of the process, the context, and the theoretical propositions. This is what creates ecological validity and enables the reader to estimate possible transfer from the conducted project to other situations. Generalisation in development research cannot be based on statistical techniques, but must instead be dependent on what van den Akker calls “analytical” forms of generalization’ (p. 12).

Conceptual Confusions when Doing Research in Collaboration with (Pre)school Personnel

In 2020, the editorial board of the journal *Pedagogisk forskning i Sverige* (English: pedagogical research in Sweden) invited Nordic scholars to debate what could be described as an ongoing paradigm shift in educational research. The new dominating tendency, according to the editors, is *practice-near research*. This term is not commonly used internationally, but in our interpretation it is analogous to praxis-related and development research, as described above. We consider the debate to be of great interest for more general methodological discussions, including the work rendered in the present volume, since what all the authors deal with is research conducted in close collaboration with the personnel of preschools (note that we avoid using the term ‘practitioners’, as this could be interpreted as their standing in contrast to researchers. Researchers are also practitioners, just within a different practice, namely, academia).

Two contributors to the Nordic debate, Serder and Malmström (2020), depict a background for practice-near research from a Swedish perspective. They highlight three alternative denominations: *praxis-near research* (focusing on knowledge formation that takes place in schools, but teachers’ involvement is not necessarily central); *practice-near research* (the dominant term in Swedish policy documents since 2010, emphasising teachers’ participation in research projects); and *practice-developing research*. The last term was introduced in a report by the Swedish Government (SOU, 2018, p. 19) as an alternative term, denoting the developing aim of research (cf. development research). The results of this kind of research should be of direct use in school practices.

Yet another term is suggested in the debate by Nilholm (2020), who raises criticism regarding two aspects embedded in the evolution of ‘practice-near’ research. The first is that it follows the line of effectiveness, a trend that has come to dominate the public debate about school. A risk with this view is that research will focus only on a limited scope, namely, the incentive to contribute to pupils’ knowledge achievements. He claims that researchers should instead broaden their interest to include the school’s overarching function in society and thus refer to ‘task-relevant research’ rather than ‘practice-near research’. The second criticism Nilholm raises is the separation of theory and practice that is maintained by the term. This point has also been a matter of concern for the authors of this volume. Claiming that research is ‘near’ practice indicates that theory is typically developed in academia with no connection to practice and that practice is conducted without theory (Nilholm, 2020). Nilholm points to the fact that research is a form of practice as well. Mattsson and Kemmis draw a similar conclusion: ‘As practising scientists know, knowledge *of* a field includes more than knowledge *about* the objects of the field. Knowledge of the field includes knowledge of the craft of science’ (p. 22). Hence, carrying out research is as practical as teaching – it is a craft.

It is not only the separation of theory from practice that is problematic; so is the potential *conflict* between educational research and educational practice.

This relationship has been discussed since education became an academic field of study (Biesta, 2007). Already in the 1800s, some academics argued for a clear line of demarcation between practice and research so that teachers would not be overwhelmed. This has been a persistent question, since it has been assumed that there is a gap between the two. Usually, this gap is dealt with in a *descriptive* manner (how it is) or a *normative* manner (how it should be).

Biesta (2007) criticises the fact that the word *research* is often used indiscriminately, especially so when it comes to outcomes of research, as it is often taken for granted that knowledge is the product of all educational research and more specifically the kind of knowledge that could be used in educational practices. Biesta (2007) also highlights the issue that knowledge might be used in different ways regarding the gap between research and educational practice, referring to Dutch studies that were performed in the 1980s. In these studies, researchers demonstrated that there are mainly two ways that research can inform practice – as one of two positions: playing (1) a *technical role*, instrumental knowledge, what works, and ‘do this and this will happen’, or (2) a *cultural role*, providing different interpretations and understandings of educational practice, to help practitioners get new perspectives by changing their way of looking at their practice, which can change their ways of understanding problems and improve their practice.

Biesta’s distinction clarifies that it is not only the technical role that is useful for educational practice, even though this is the most common way of doing research while the cultural role often goes unnoticed. He states that if researchers open for the cultural role, many perceived problems, and the gap would dissolve. He asks whether educational research can in fact produce technical knowledge, since although it presupposes that there are causal links between activities and outcomes, this is not the case. Biesta’s (2007) final point is that, while bridging the gap is generally a good thing, it can also blur the distinction between researchers and practitioners and obscure the fact that the two bring different expertise to the field. He highlights the importance that the two roles be clearly defined so that researcher and practitioner can keep their critical distance. Otherwise, for example, issues may arise when researchers need to present critical or negative results.

Returning to Nilholm (2020) and his suggested term – *task-relevant research* – this can also help solve another potential conflict, between *basic science*, which he refers to as ‘curiosity research’, and the educational counterpart to *clinical research* in medicine. He writes that both kinds of research need to be task-relevant. Every educational researcher must deal with the political framework of the educational system, in one way or another.

To summarise the discussion so far, we can see that whatever term is used, there is a methodological approach that is characterised by (i) a focus on problems that are experienced in schools, (ii) an aim to improve school practice (or improving society in a broader sense), and (iii) what are referred to as the practitioners of schools (teachers, principals, or other actors) which are involved in the research process to some extent. We can also see that there are recurring problems to deal with when applying this research methodology. The first concerns the usefulness of the research and the balance between an ambition to develop practice and to

contribute basic scientific knowledge. The second problem is related to the first and concerns the question of who can produce knowledge: is it only the researchers (working with theory), or is the knowledge that is elaborated in practice likewise valid (practice is also theory)? We will return to these issues in the last part of this chapter, but first we will take a closer look at the different contributions by the authors of this volume.

When the Practice Referred to Is Preschool: Reflections from the Chapters

When discussing teachers' involvement in research, we clearly see that examples often concern how teachers participate in the design and implementation of interventions. Given the discourse of effectivity (cf. Nilholm, 2020), these interventions often deal with specific teaching problems, for example, how to teach about subject *x*, in order to make the pupil grasp the content of *y* (e.g. Jitendra, 2005), that is, to find the best – or rather, most effective – way of teaching. When we involve preschool teachers in our studies, we have a different kind of task to consider and relate to (cf. Nilholm, 2020). Curricula for ECEC in the Scandinavian countries, as seen in the examples in this volume, are not divided into subjects but are of a more thematic character. For example, the Swedish curriculum does not present goals to be achieved by children in preschool, and the institutional task is not to conduct evaluations of children's knowledge achievements. When the praxis-related research approach emerged in the Scandinavian countries, as described in the chapter by Pramling Samuelsson (this volume, Chap. 2), there was no curriculum at all yet. The examples of projects in this volume largely address problems that are of a broad character. This also likely affects what the teachers' role in the projects comes to be. There are often no clearly defined interventions to be designed; the developments to be tried out are more like new approaches, not necessarily specified tasks or teaching procedures. If there are more specified interventions, such as those reported in Björklund and Palmér's (this volume, Chap. 3) chapter on a project involving children's learning in mathematics, there is still a strong focus on an openness to the children's perspectives and initiatives in the procedures. Pramling Samuelsson's (this volume, Chap. 2) project aimed to determine whether a metacognitive approach to children's learning supported children's sensemaking in preschool. Another example is Kultti's (this volume, Chap. 9) project, which aimed to decrease differences in young children's living conditions. In the project, participants wanted to create knowledge about teaching and learning, as well as home-preschool collaboration, in multilingual preschool contexts. This project, as well as Åkerblom's (this volume, Chap. 6) action research project aimed at exploring the conditions for ECE in a migrating world, has clear connotations to typically praxis-related aims (Mattsson & Kemmis, 2007) that strive for an equal society. Åkerblom (this volume, Chap. 6) describes that there are migration processes and linguistic diversity that

characterise our time and societies. Brooks et al. (this volume, Chap. 7) address another contemporary societal challenge, namely, how educators can make sense of present complex demands that they enhance their digital competence to improve the technological integration in their everyday educational activities.

What we find stands out in the projects reported here, which are all conducted with preschools, is that theoretical interests, typical of basic science, are often salient. This does not exclude an interest in the development of practice, articulated at the same time. We can see it, for example, in Björklund and Palmér's (this volume, Chap. 3) study when they explicitly state both a theoretically and empirically grounded interest in how children develop numerical skills. Another example can be found in Wallerstedt's chapter (this volume, Chap. 4), which describes a project aiming to develop, through empirical and theoretical work, a *didaktik* for preschool, that is, a theory. One could say that what the collaboration with teachers in the projects often concerns is a common interest in children's learning, development, and well-being, rather than simply teaching and working methods for preschool.

Even if we can see interesting and fruitful models of collaborative work throughout the projects presented in the next section, there will be obstacles that we can learn from. We can also conclude that the long-standing question of what kind of knowledge about school practices is recognised and who is legitimised to produce it (the theory-practice divide) is still alive, even in our projects (see also the discussions in Part III by Pramling & Peterson, this volume, Chap. 10, and by Pramling & Wallerstedt, this volume, Chap. 12). It is worth noting that there are more actors to be found in this battle, not least the tech industry today, as will be illustrated in Lagerlöf's chapter (this volume, Chap. 8).

The Challenges of Collaboration Projects

There are many potential benefits of realising collaboration projects in ECEC, such as the prospect of creating mutually beneficial conditions for the involved partners to develop a deeper understanding and greater knowledge around a specific area of ECEC. Nevertheless, there are also many challenges that can stand in the way of the successful implementation, execution, and completion of a project. Some of these challenges can possibly be avoided in the planning phase by creating spaces for communication and dialogue between the partners in the project, while other challenges cannot be predicted and require researchers and teachers to be flexible and creative.

Based on the collective experiences described in the chapters of this volume, several challenges are addressed: (i) agenda-setting and expectation management, (ii) mutual trust and shared understanding, (iii) organisational challenges, and (iv) managing the unpredictable. Many of these challenges are echoes of what has previously been voiced in the literature on collaborative projects, but note that all examples presented here are grounded in ECEC settings.

Agenda-Setting and Expectation Management

A common issue in collaboration projects is when researchers and teachers, either partly or entirely, have different goals and agendas in the project and, as a result, have different expectations of what they will achieve with the project (Serder & Malmström, 2020). In the project described by Wallerstedt (this volume, Chap. 4), the researchers' aim was to generate and share knowledge about a new form of play-responsive *didaktik* in the context of ECEC. The expressed ambition of the teachers was to attend lectures and conferences, to receive a newsletter, and to be part of a network. Similarly, in Björklund and Palmér (this volume, Chap. 3), the researchers' goal was to gain knowledge on structures and discourses and to change practice when it came to toddlers' numerical skills, while the teachers expressed that they expected to develop mathematical methods which, when applied, would facilitate their daily practice. In the project described by Lagerlöf (this volume, Chap. 8), the issue of different expectations and agendas grows even more complicated as commercial actors become involved. This can be explained by the fact that researchers and companies often have contradictory views on children as research objects and different perspectives on learning, but also that the aim of most corporations is to make a profit, which collides with researchers' intentions to generate impartial knowledge. Having divergent perspectives on goals and potential outcomes can lead to frustration and dissatisfaction among participants. To develop a fruitful collaboration project, there is a need to create arenas for joint agenda-setting, where researchers and teachers (and potentially other actors) can express their expectations for the project.

Mutual Trust and Shared Understanding

Something that has proven to be notoriously challenging is the building of mutual trust in collaboration projects. Although this is an arduous and time-consuming task, it is crucial to let this process take time (Olsson & Brunner Cederlund, 2020). As stated by Kultti (this volume, Chap. 9), to build trust, researchers and teachers need to be engaged in dialogue. It is tempting to assume that there will automatically be a communicative exchange between these two parties simply because they come together in a collaboration project, but this is not always the case (Prøitz, 2020). In the chapters of this volume, two potential pitfalls when it comes to developing mutual trust and shared understanding in a collaboration project will be revealed.

Firstly, when partners lack necessary *knowledge about each other's everyday work*, it can be a struggle for them to communicate. Research and preschool are very different practices, and it is difficult to understand the needs of a practice if one is not part of it (Blossing, 2020). For example, teachers do not always understand the mechanisms, purposes, and limitations of the scientific process, which can lead

to inflated expectations of what researchers can accomplish in terms of problem-solving. There can, for instance, be expectations from teachers that researchers will deliver ‘the truth’ or provide solutions to complex problems (Hultman, 2021; cf. Pramling & Peterson, this volume, Chap. 10). Likewise, researchers who are not adequately familiar with the objectives of ECEC and the working conditions of early childhood professionals risk focusing on issues that are not significant for practice or not scientifically significant. While it is not possible to eliminate such knowledge gaps, they can be reduced if both parties are willing to share and listen to each other.

Secondly, *communication barriers* between researchers and teachers can cause communication problems, which could lead to difficulties in building trust (Hermansson & Ahlborg, 2020). These two groups therefore need to develop a common, professional language (Rönnerman, 2020), which can help them communicate to find common theoretical ground in projects and, by extension, to coordinate their perspectives in order to establish sufficient intersubjectivity. This is said to be enabled by creating a ‘third space’, referred to as a non-hierarchical, communicative space where researchers and teachers can engage in dialogue (Passy et al., 2018; Prøitz, 2020). However, it can be questioned whether such a space is theoretically possible. Participants in a dialogue always bring in different experiences and have different knowledge, which undoubtedly creates hierarchical structures to some extent. In their text, Ødegaard, Oen, and Birkeland (this volume, Chap. 5) describe how communicative spaces were created for collective reflection on the epistemological base of a project. Similarly, in the action research project described by Åkerblom (this volume, Chap. 6), the researchers and educators had partially conflicting perspectives on multilingual children’s Swedish language development. In their discussions, the educators implied that they viewed children’s language as lacking since they were not fluent in Swedish. Meanwhile, the researchers would not accept this point of view as valid as multilingualism, from their theoretical point of view, was seen as an asset rather than a deficit. With an intention to bridge this divide, the researchers initiated a dialogic space where they discussed monolingual norms, and one researcher joined in the daily work at the preschool. The measures described above turned out to be successful, in the sense that they were instrumental in building the much-needed mutual trust between the researchers and educators that was decisive for them to communicate openly in the project (Åkerblom, this volume, Chap. 6).

As building trust is significant, it is vital to let this process take time, which can be a problem since most research projects are funded for only a limited time. Therefore, the time aspect needs to be addressed in the project’s initial planning stage. It should not be taken for granted that researchers and teachers will be able to establish sufficient intersubjectivity; instead, they must have a proper chance to engage in continuous dialogue. It is therefore important to create opportunities for them to establish a shared understanding of the project and its objectives. It is also important to plan for network-building at an early stage, to ensure that the knowledge and relationships that develop during the project will outlast the time frame of the funded project. In line with Rönnerman (2020), we argue that it is important for

universities to support research groups in forming lasting networks in which the practitioners – in this case, researchers and teachers – can establish trust and create a shared language.

Organisational Challenges

As the chapters of this volume clearly show, organisational challenges are common when conducting a collaboration project. Several of the chapters deal with issues concerning insufficient project leadership, distribution of responsibility, and unclear definition of roles when researchers and teachers collaborate in projects. Leadership backing has proven to be an important factor. Blossing (2020) goes as far as to say that all practice-based research necessitates the participation of local leaders for the project to be relevant for educational practice. Leadership support is not only important for the researcher who is conducting the study; for teachers, it is crucial that they receive appropriate practical and motivational support to be able to participate to their full capacity. Kultti (this volume, Chap. 9) describes a development project that lasted 6 years, in which preschool teachers and preschool directors from six municipalities participated in continuing professional development aimed at improving conditions for children's well-being and learning. She shows that long-lasting and consistent leadership support was decisive for teachers' persistence in staying in the project, while insufficient support negatively affected preschool partners' interest in remaining in it. During the project's time frame, it became increasingly clear not only that well-defined, internal leadership in the project was essential but also that the need to formalise middle-management positions in the form of at least one appointed coordinator per municipality was crucial for the project's development and for facilitating shared understanding through dialogue. Kultti (this volume, Chap. 9) adds that it is not enough to encourage the appointment of such positions; they usually have to be formalised in order to be realised.

In several chapters, the authors discuss the definition of roles in collaboration projects and how it can sometimes be unclear what is expected from the partners in a project if this is not explicitly addressed. It is not uncommon to see asymmetric collaborations in which the researchers' and teachers' roles are regarded as fixed, with the researcher as the agent of inquiry and the teachers as the objects for analysis (Björklund & Palmér, this volume, Chap. 3). As stated by Lagerlöf (this volume, Chap. 8), when teachers are not allowed to be part of the research design process, important knowledge can be missed. In the chapter by Björklund and Palmér (this volume, Chap. 3), they discuss how researchers and teachers took on interchanging roles in their project, as both 'insiders' and 'outsiders', and that both perspectives were significant for the development of their project. Like Wallerstedt (this volume, Chap. 4), they also discuss the concept of co-learning agreements (Wagner, 1997), in which researchers and teachers are seen as equally important and responsible when it comes to initiating changes and sharing new knowledge in their respective arenas. However, as pointed out by Wallerstedt (this volume, Chap. 4), even with the best intentions, this is often more easily said than done.

Managing the Unpredictable

Another challenge that is salient in the chapters is the unpredictable process of conducting collaboration projects. Such projects are characteristically ‘unpredictable, mutable, contingent, serendipitous, complex, and challenging’ (Walton et al., 2015, p. 45), and there will always be aspects that researchers and teachers cannot plan for. Ultimately, a collaboration project *is* what emerges between the participants.

In the study presented in the chapter by Åkerblom (this volume, Chap. 6), it was the researchers’ intention to include children’s parents as participants to develop the relationship between them and the preschool teachers. However, quite early in the project, it became clear that the parents were not as invested as the researchers and teachers had hoped. This often had to do with parents’ unpredictable living and working conditions, as several of them were asylum seekers. These unstable circumstances made it very difficult for the researchers to create conditions for parental involvement. Furthermore, many parents were more interested in issues of direct importance in their everyday life, such as the preschool’s opening hours, than in educational development.

In their chapter, Ødegaard et al. (this volume, Chap. 5) describe how their project took an unexpected turn in connection to the COVID-19 pandemic. Shortly after the first workshop, the pandemic broke out, and all preschools in Norway were swiftly closed; and when they were opened again, parents were no longer allowed inside. These events created a need to develop digital solutions to enable parents to be involved in the project, and the planned physical workshops with participants were replaced with digital meetings. Thereby, because of the participants’ digital engagement, digital learning became a positive and unpredictable side effect of the project.

To conclude, the unpredictability of collaboration projects can in fact offer researchers and teachers new perspectives on their respective practices and serve as an important and useful eye-opener. It can also generate a more complete understanding of participant perspectives, which supports validity (Walton et al., 2015). Therefore, a conclusion drawn in this volume is that, instead of fearing the unpredictable, researchers should embrace the messiness of projects. This also has important implications for how research applications within this field need to be evaluated and carried out – there needs to be an openness in relation to the pre-described working plan.

Looking Forward: Future Questions for Praxis-Related Research

To further emphasise the importance of this volume, we want to widen the perspective and reflect on the praxis-related research trend in educational science from a political angle. Blossing (2020) comments on the Swedish government’s efforts to support sustainable models for collaboration in research, educational practice, and teacher education, between academia and schools. He does not see that the models

elaborated so far have resulted in equal conditions, as teachers' and school leaders' possibilities to participate in research are still restricted. He concludes that the main outcome of the efforts are merely that researchers have gotten yet another source of funding. It is obvious that possibilities for funding largely set the research agenda. In their chapter, Björklund and Palmér (this volume, Chap. 3) point out the different possibilities for funding that have been offered in Sweden recently. Lagerlöf (this volume, Chap. 8) also highlights this, writing about experiences from a research and development project funded by the EU, in this case also involving commercial companies dealing in educational technologies. When these funding agencies call for applications, they expect research characterised by usefulness, and this sets the research agenda. It also gives the agencies power to define what usefulness is. These definitions may be fundamentally different from what educational researchers would formulate.

Along with public funding agencies' tendency to offer incitements for collaborative research projects in which teachers take part, there is also an identified need for what is called *activist professionalism* (Skattebol & Arthur, 2014; Groundwater-Smith & Sachs, 2002). Skattebol and Arthur (2014) sketch a line of argument, grounded in an Australian context, that ECE has received growing recognition and is regarded as increasingly important. This has caused a development whereby ECE has been incorporated into a logic characterised by market-based principles and demands for efficiency. Professionals in this domain have been forced into a position in which they are 'resigned' and 'more likely to be attracted to pre-packaged curriculum' rather than to take 'the leadership to develop their own contextually responsive curriculum' (p. 351). Hong and Rowell (2019), writing from an American perspective, take it one step further. They see a problem with 'civic illiteracy', that is, when citizens lack the capacity to take part in their own communities, which is a necessary precondition for a democratic society. A typical logic of reasoning for civic illiterates is that 'only the anointed experts of the ruling elite know how to address specific social problems' (p. 125). Hence, it could be argued that there exists a problem on two related levels – people in general do not take part in the democratic society, as they have the right to do, and teachers in particular do not take part in the development of what should be their own domain of professionalism. This is due to an expectation that there is some other party, higher up in the hierarchy, who will – and is able to – come up with solutions to societal problems. Hong and Rowell (2019) point to action research, which is one of the research methods discussed in this volume, as a possible answer and way forward for the current situation:

We argue that in education, a domain at the very heart of democratic possibility, action research and practitioner research are valuable tools for helping restore civic literacy. We suggest that these tools are essential in pushing back against the efforts to maintain a knowledge monopoly in education that revolves around the interest of corporations and forester uninformed citizens. (p. 126)

Hong and Rowell (2019) also elaborate on another problem that concerns the divide between researchers and teachers. Researchers may find teachers to be dismissive of scientific results. Hong and Rowell find several potential reasons for this. One is that

when a teaching method is elaborated in one context, it may be inapplicable in another, and teachers may find the research results irrelevant. What is understood as scientific quality – that is, presenting results based on a randomised controlled design – can risk running counter to the will to produce practice-relevant results, according to teachers. Another thing that Hong and Rowell point out is that teachers may also find research hard to read, being too abstract, and sometimes do not even have time for this kind of further education. In sum, teachers become technical operators who should ‘[follow] what-works knowledge produced by academics whether or not it can be translated into their workplaces’ (p. 132).

Considering the experience and insights reported in the chapters of the present volume, we do not share this somewhat negative picture. In comparison, it seems as if the Scandinavian countries have come a bit further than some other parts of the world have in bridging the gap between teachers and researchers in collaboration. This is also seen in the many initiatives for research schools dedicated to teachers in the Scandinavian countries, where teachers in preschool and school share their time between preschool/school and partaking in a research education (PhD). There is a political aim to give teachers agency in knowledge formation in their own practice, but the question is whether this creates possibilities for a teacher to act as an *entrepreneurial teacher professional* or *activist professional* (Groundwater-Smith & Sachs, 2002). The former entails a chance to climb in the hierarchy, without changing it, while the latter means resolving the divide between those who have influence and those who do not. Even if we do not fully recognise the descriptions by Skattebol and Arthur (2014) and Hong and Rowell (2019), we agree that they highlight important aspects of assigning relevance to praxis-related research that is grounded in the fundaments of a democratic society.

When considering the points in the chapters of this volume, we have seen that different agendas for participating in projects often exist and that it takes time to negotiate aims. We have also highlighted the need to make it possible for these kinds of collaborations to live on for longer periods, often beyond what is covered by the funding agencies. Here, we see a challenge for the universities. Hermansson and Ahnborg (2020) mention this challenge in terms of a ‘balance of incitement’. One of the main tasks of universities, along with research and education, is to inform and collaborate with the surrounding society about knowledge, also referred to as the *third mission*. The university should be useful to society. This, Hermansson and Ahnborg (2020) argue, could be problematic from a researcher’s perspective, when the benefits of collaboration cannot be counted in funding. From the perspective of schools in Sweden, collaborating with universities can be more clearly demanding, as they are required by school law to build their work on a scientific ground. How do they realise this requirement? A straightforward way is to maintain collaboration with universities. For researchers, a prominent ambition, along with the possibility to get funding, is to be published. To produce publishable results, they often have to formulate questions of the type ‘what is going on here’. For a school principal, it is often more interesting to get answers to a question like ‘what works here’. Hence, researchers are driven by the requirements of getting funding and schools by the Education Act. Researchers need to be published, while schools need answers to

everyday problems, so there may be many different incitements to balance between when establishing collaborations.

To sum up, with this volume we want to point out two challenges for academia. The first concerns what we just have touched upon, namely, the need to make visible the third mission of universities (i.e. collaboration with the surrounding society). Providing researchers with opportunities to engage in this task is necessary to maintain the kinds of collaborations with preschools and schools that are needed for building the important trust we have identified, both in previous research and in the chapters in this volume. The third mission needs to be given more status within universities. The second challenge concerns universities' responsibilities for preschool teacher education. This must include the fostering of a profession that develops a view of themselves as potential knowledge producers. As Groundwater-Smith and Sachs (2002) claim, '[i]nitial teacher education has to be more than an instrumental preparation for enacting government policies in the schools as required by the audit society' (p. 353). Hong and Rowell (2019) warn that teacher education tends to transmit a view to students that knowledge is something that is produced by academic researchers and so to speak belongs to the university rather than to teachers. Hong and Rowell maintain the importance of university courses that give students their own research experiences.

Finally, we want to highlight a challenge that we see as the next step in the development of this field of methodology: recognising children as actors in research. According to the *Convention on the Rights of the Child* (UN, 1989), children have the right to an education and cultural participation and to express themselves freely. We argue that these rights are also highly relevant for collaborations between researchers and preschools. This is of particular importance in areas where children and parents do not master the majority language and risk being excluded from research. It is of utmost importance that *all* voices be heard – not only the loudest ones.

References

- Biesta, G. (2007). Bridging the gap between educational research and educational practice: The need for critical distance. *Educational Research and Evaluation*, 13(3), 295–301.
- Blossing, U. (2020). Samverkansprocessens problematik i den praktikinära forskningen. *Pedagogisk forskning i Sverige*, 25(4), 95–99.
- Groundwater-Smith, S., & Sachs, J. (2002). The activist professional and the reinstatement of trust. *Cambridge Journal of Education*, 32(3), 341–358.
- Hermansson, K., & Ahnborg, M. H. (2020). Praktikinära forskning i samverkan–hur ska det gå till? *Pedagogisk forskning i Sverige*, 25(4), 83–86.
- Hong, E., & Rowell, L. (2019). Challenging knowledge monopoly in education in the US through democratizing knowledge production and dissemination. *Educational Action Research*, 27(1), 125–143.
- Hultman, G. (2021). Kunskapsbildning eller praktikinära forskning? *Pedagogisk forskning i Sverige*, 26(2–3), 116–121.

- Jitendra, A. K. (2005). How design experiments can inform teaching and learning: Teacher-researchers as collaborators in Educational Research. *Learning Disabilities Research & Practice*, 20(4), 213–217.
- Mattsson, M., & Kemmis, S. (2007). Praxis-related research: serving two masters? *Pedagogy, Culture and Society*, 15(2), 185–214.
- Nilholm, C. (2020). Praktiknära eller uppdragsrelevant forskning? *Pedagogisk forskning i Sverige*, 25(2–3), 157–159.
- Olsson, L., & Brunner Cederlund, A. B. (2020). Det tredje rummet som mötesplats. *Pedagogisk forskning i Sverige*, 25(4), 87–89.
- Passy, R., Georgeson, J., & Gompertz, B. (2018). Building learning partnerships between schools and universities: An example from south-west England. *Journal of Education for Teaching*, 44(5), 539–555.
- Prøitz, T. (2020). Praksisnær forskning og partnerskap i et tredje rom. *Pedagogisk forskning i Sverige*, 25(4), 79–82.
- Rönnerman, K. (2020). Praktiknära forskning – en evig fråga? *Pedagogisk forskning i Sverige*, 25(4), 100–103.
- Serder, M., & Malmström, M. (2020). Vad talar vi om när vi talar om praktiknära forskning? *Pedagogisk forskning i Sverige*, 25(1), 106–109.
- Skattebol, J., & Arthur, L. M. (2014). Collaborative practitioner research: Opening a third space for local knowledge production. *Asia Pacific Journal of Education*, 34(3), 351–365.
- SOU 2018:19. Utredningen om praktiknära skolforskning i samverkan. (2018). *Forska tillsammans: Samverkan för lärande och förbättring*. Norstedts juridik.
- UN. (1989). *Convention on the Rights of the Child* (Treaty no. 27531. United Nations Treaty Series, 1577, pp. 3–178).
- van den Akker, J. (1999). Principles and methods of development research. In J. van den Akker, R. M. Branch, K. Gustafson, N. Nieveen, & T. Plomp (Eds.), *Design approaches and tools in education and training* (pp. 1–14). Springer.
- Wagner, J. (1997). The unavoidable intervention of educational research: A framework for reconsidering researcher-practitioner cooperation. *Educational Researcher*, 26(7), 13–22.
- Walton, R., Zraly, M., & Mugengana, J. P. (2015). Values and validity: Navigating messiness in a community-based research project in Rwanda. *Technical Communication Quarterly*, 24(1), 45–69.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Part II

Example Studies

Chapter 2

A Retrospective View on Researchers' and Preschool Teachers' Collaboration: The Case of Developing Children's Learning in Preschool



Ingrid Pramling Samuelsson

Abstract This chapter reports on research that is foundational to much of the work carried out by the members of the network responsible for this volume (Wallerstedt, Brooks, Ødegaard & Pramling, this volume). The aim of the two studies I will discuss here was to determine whether a metacognitive approach to children's learning supported children's sensemaking in preschool. Four preschools were followed, of which two received feedback on their metacognitive dialogues with children from the researcher and two were followed with no feedback, serving as the comparison group. A replication with more groups and teachers was later conducted, with similar results. The development approach consisted of teachers and researchers meeting regularly to jointly discuss the approach to teaching and the content to work with. The content was based on earlier research on how children make sense of different phenomena and content areas. The researchers visited the participating preschools and video-recorded when the teachers carried out activities with children. Afterwards, the recordings were discussed with the teachers. The participants also met once a month to discuss central questions. What development research means in this case will be discussed, as will what contributions the studies made to research (theory) and the development of pedagogy (preschool). There is also a parallel process between teachers and children that will be highlighted. Perhaps one can see this kind of developmental study as the first step towards praxis-oriented research.

Keywords Metacognition · Children's learning · Preschool · Pedagogy

I. Pramling Samuelsson (✉)

Department of Education, Communication and Learning, University of Gothenburg, Gothenburg, Sweden

e-mail: ingrid.pramling@ped.gu.se

© The Author(s) 2023

C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38, https://doi.org/10.1007/978-3-031-14583-4_2

Introduction

Professional life stories with 29 pioneers within early childhood education and care (ECEC), active during the second half of the twentieth century, have been rendered by Singer and Wong (2021). Their study includes researchers who have been part of the expansion of ECEC, both as a practice for children and as an academic field. Most of these researchers do not have an academic background but have life experience that has led them to the field of ECEC. I am one of these pioneers, not socialised into the mainstream of research – which previously has mainly involved psychological studies with tests and large samples. The paradigm shift in research during the same time was that theories pointed out the importance of context in learning and development, resulting in the emergence of studies in ECEC and not only on individual children. Earlier child development is the academic discipline that has served as the foundation for ECEC (Pramling & Pramling Samuelsson, 2011).

The present chapter can be viewed as telling the story of educational pioneer work in research in which researchers and teachers collaborate in knowledge-building. More specifically, this chapter is based on research on children's subjective perspectives on their own learning, which brought with it questions about developing, through pedagogy, children's understanding of the world around them. The story that is told is also one of how teachers have participated in developing a new approach to pedagogy – later called Development Pedagogy – in early years education, based on empirical studies (Pramling Samuelsson & Asplund Carlsson, 2008). Investigating children's perspectives on learning, this chapter is based on two main studies, conducted in the 1980s and 1990s, respectively. It takes its starting point in a doctoral thesis focusing on metacognition in young children's learning, since it was here that the idea of a preschool pedagogy was born (Pramling, 1983). The reason for beginning to think of a new approach to work in preschool was that the results showed that teachers' and children's ideas of what children learned were not at all in conformity. In the interviews with children, metacognition played a central role in making different content areas visible. Metacognition can be described as 'making learning an object of learning' (NSIN Research Matters, 2001, p. 6), which implies getting children to think, talk, and reflect on learning. Learning about children's subjective world, metacommunication (i.e. communicating about how one communicates, e.g. what is meant by what is said), and metacognition became central. In the study, teachers' work with specific content also showed that their intention with the teaching was different from what the children perceived it was all about. These results led to reflective questions, such as whether and how a metacognitive approach could be developed to support children's learning in early years education, which we wanted to try out in the two following studies in which methodology would be the focus.

The thesis, as mentioned above, was that teachers take a great deal for granted about children's learning, which they should not do if they want to influence the children's understanding of the world around them. The two pedagogical studies, intended to develop children's learning and teachers' role in this, were then carried

out together with teachers. They will be described in the next section, followed by a discussion of the methodological design and how the teachers were involved in the research. The chapter will conclude with a discussion of the implications of the results but will also illuminate a number of identified challenges and tensions involved with conducting this research.

Background

The background of this chapter is a dissertation called *The Child's Conception of Learning* (Pramling, 1983), reporting on a study inspired by Piaget's work, in which children's ideas about their own learning were traced and described in terms of qualitatively different conceptions –related to both *what* they learnt and *how* they perceived that learning comes about. The doctoral thesis described children's development of an understanding of learning, in three qualitatively different categories regarding *what* they learn and three categories regarding *how* they learn: *what*, learning as doing, as knowing, and as understanding, and *how*, as doing, as growing older, and as having experiences. In the same study, the themes worked with in preschool were observed, and the children were interviewed, which showed that the teachers had the intention to teach them about time, for example, while the children experienced it as having learnt to make clocks. The teachers' intention involved knowledge *of* or *about* something, while the children interpreted the activities as learning *to do* something, which was related to their understanding of what it means to learn (their conception of learning). Their ideas about learning came through in whatever question they were asked. For instance, in response to the question 'What would you do to find out about how far it is to the moon?', four categories of conceptions appeared: (1) the child discusses building a space shuttle and going there themselves (one has to do something to find out), (2) they mention asking an astronaut (someone who has been there), (3) they discuss asking their family or teacher (someone may know even though they have not been there), and (4) they say they would find this out via media (in a book or at the computer). Against this background, the metacognitive aspect of getting children to reflect on their own learning became a key factor in bringing the research to the next study.

The theoretical perspective behind the study discussed above, which also came to guide subsequent studies, is phenomenography (Marton, 1981). Marton and Booth (1997) describe phenomenography as the empirical study of the qualitatively different ways in which people experience and understand various aspects of the world around them. From this perspective, learners' subjective perspectives become important, as it is the case both that children make sense of something based on their earlier experience and that what they learn may result in their changing perspective. The word *phenomenon*, from the Greek, means 'what appears', in the sense that it is always someone who 'sees' something. In other words, there is a reciprocity between the object (a world and the things in it) and the subject (the human). A phenomenon can, for instance, be learning or specific content worked with in

preschool. The *child's perspective* becomes central in this kind of research, a notion that is different from a *child perspective* (see, e.g. Sommer et al., 2010, for this distinction, or paragraphs 3 and 12 in the UN Convention on the Rights of the Child, 1989).

Within phenomenography, the ontological view is that subject and object are not separate but rather incorporated in an internal relationship with each other. When the child incorporates the world, the world becomes part of the child. On the one hand, the child's understanding of the world becomes part of their personality; thus, knowledge is deeply personal. On the other hand, a non-dualistic perspective builds on the premise that there are not two different worlds – one real objective world, separated from the subjective mental world. There is only one existing world, which people experience in different ways and which is subjective and objective at the same time (Pramling, 1994). From this premise, knowledge becomes a way to experience different phenomena and aspects of the surrounding world, and learning becomes a question of changing conception (meaning) about something or expanding the child's views to new dimensions. Since we have seen that ways of thinking and talking about learning influenced children's understanding of various other phenomena, our question became *If we could manage to develop children's ideas about their learning, might they learn better?* The results of the two following studies, focusing here on the methodology, showed that it was not enough to get children to reflect on their own learning; the same kinds of metacognitive reflections have to be used in all content areas that are worked with.

Two Development Studies

The next step in the research programme involved getting teachers to work in a metacognitive way with the intention of raising the children's awareness of their own learning, in the study *Learning to Learn* (hereafter called Study I; fully reported in Pramling, 1990). It is in this process that the cooperation between teachers and researchers is put on the stage, since it could not have been done without the teachers working in practice. In other words, we grew interested in more didactical/pedagogical questions, such as *how to improve children's learning in preschool*. As metacognition was a key factor, we focused on this with two intervention preschools. There, metacognition was related to (1) learning, (2) structure, and (3) content. The pedagogical approach consisted of alternating between these three levels, with learning being the most general one. The structural level is less general as fundamental structures can be found in different contents (e.g. an ecological cycle, cause-effect), and finally, the third level is the content, which is the least general. In teaching, the kind of pedagogy used means to alternate between these three levels. The results from Study I show that it is a question not only of making children more aware about their own learning but also of using a pedagogy in which the metacognitive dialogues are recurrently used in communication with children about the content (or learning objects) teachers want them to develop an understand. Children

from the intervention groups grasped the message in two books and understood the ecological cycle they had seen a presentation on at the Museum of Natural History, on a much more advanced level than children from the comparison groups. In other words, they had learnt to learn (i.e. generative learning), meaning that they could make better sense of new experiences.

Study II, which can be seen as a replication of Study I but extended in time and the number of children and teachers, was called *The Foundations of Knowing: Testing of a Phenomenographic Effort to Develop Children's Ways of Understanding the Surrounding World* (Pramling, 1994). What was different in this study was that teachers read research literature on young children's conceptions of literacy, mathematics, nature, culture, etc., which means that earlier research on *children's conceptions of various content became the curriculum* for the project. This provided teachers with knowledge about what it could look like when children developed an understanding of, for example, dividing something, number conception, symbols, and reading. Apart from this, it was similar to Study I, building on interviewing children and learning about metacognition. The results in this study also showed a more advanced understanding in the experimental groups of solving different tasks and talking about various content areas, as well as a better ability to retell and make sense of a story read to them, as compared to the children in the comparison groups.

Based on these empirical studies, a preschool approach called *Developmental Pedagogy* now began to emerge (Pramling, 1996a, b; Pramling & Pramling Samuelsson, 2011), which means that *key factors from the research approach are transferred into a pedagogy*. The *first* principle of this approach is that the child's subjective world serves as both the starting point for intervention and shaping their learning about the world around them. From this follows the *second* principle that communicating and metacommunicating with children become central. This communication is intended to lead to the children talking, thinking, and reflecting. The *third* principle is that identified qualitatively different ways of conceptualising something are made visible to children in order to make them aware that there are many different ways to think about something in the group and that while these conceptions are different they are not simply wrong or right – it is not a misunderstanding but rather an understanding on children's premises. Experiencing variation in ways of thinking can influence children to change their conception. Variation becomes important for making something visible to children; the simplest variation can make contrasts visible. The metacognitive dialogues have a central place in the development of preschool pedagogy.

Design and Method

The studies discussed above were carried out long before (in the second half of the 1980s and at the beginning of the 1990s, respectively) praxis was involved and appreciated in research studies. Both studies involved traditional aspects, such as having intervention groups, with whom the researchers worked, and comparison

groups. In a study by Bjørnstad and Pramling Samuelsson (2012) on toddlers in ECEC, it became obvious that Nordic research was different from research from most other countries, being carried out in small-scale, qualitative approaches in ECEC together with teachers. Working with teachers in research had its breakthrough in the Nordic context quite early and in ECEC long before it came into practice in school education. In Study I, four groups of 5- to 6-year-olds were followed for 6 months. In two of these groups, there was an intervention, while in the other two, the researcher followed their work the whole time, but only said she was interested in what work was going on and thus did not intervene at all, except in the case of one certain content that all four were asked to work with. This theme, about 'the shop', was worked with for 2–3 weeks (see Pramling, 1990, for a full report, also 1991). In Study II, six groups of 5- to 6-year-olds were followed for 1 or 2 years (depending on whether they were six or five when the study began); all children were involved in the intervention, and the comparison groups consisted of six preschools located in the same area as the one that was followed, where the children became involved in the same kind of evaluation tasks only at the end of the study. Working with comparison groups in this way helps clarify the results and thus the consequences of an intervention.

What, then, was similar and what was different in the design of these two studies, besides the comparison groups? In the intervention groups, teachers received feedback on their work from the researcher following their activities and were continuously observed. These teachers also received information and texts about the theoretical perspective and previous research in this area of knowledge. Study I lasted 6 months and Study II 2 years. Study I was carried out in middle-class areas, with four teachers with similar competence and length of experience as preschool teachers. Study II was carried out in low-, middle-, and upper-class areas, with teachers with between 2 and 26 years of practice in preschool. In both studies, however, the question we were trying to answer was whether metacognitive dialogues could contribute to learning. In the first study, we hypothesised that developing children's conceptions of learning would lead to better learning. We realised that this was not the case, however; rather, these kinds of metacognitive dialogues have to be related to all kinds of content that are worked on. Focusing on content in preschool as was done in these studies was unusual at the time and, in fact, is not even today an obvious aspect of ECEC (Björklund & Pramling Samuelsson, 2020).

The Work with the Teachers in Practice

The teachers, with whom the researchers worked, discussed things and jointly planned the work they would carry out with the children and received feedback from the researchers on what they did in the preschool. In this way, the teachers were involved in the research process. They became a group who supported each other when meeting with the researchers once a month and discussed different aspects such as metacognition, different content areas, and what the current research

showed about children's learning in various content areas. One could say that, for the teachers, the competence development was like an in-service competence, with dialogues both among themselves and with the researchers. They also gave each other advice and ideas related to the various themes they planned to work with. They also shared what they felt they had not succeeded at, such as making some children interested in a specific topic or being able to make an excursion they had planned, and asked for help in replacing this with something else. They often mentioned that they had *difficulty asking the right question to get the children engaged*. Some of the teachers used a device to record themselves, for instance, when they had circle time with the whole group of children, and then jointly listened to the recording, sometimes laughing about their own actions, which became clear to them when they began listening more carefully to what each child had said. One could claim that the teachers themselves, together with the researchers, used a metacognitive approach when reflecting on and sharing their experiences from praxis.

One very important aspect of the process was *developing competence in interviewing children* (Doverborg & Pramling Samuelsson, 1985/2012) and *analysing children's understanding* of the various contents worked with in preschool. The interview was inspired by the Piagetian clinical interview, although it is criticised today not only for deceiving children but also because children try to determine what the adult who is interviewing them wants to hear (Pramling, 2015). This is why it is so important for the teacher and child to manage to establish *intersubjectivity* and enable space for each child to express himself/herself and to follow up on the children's expressions so they feel that the adult is truly interested in and curious about what they have to say. This also led to seeing teaching as a continuous process, which also had consequences for how to structure the time in ECEC. Previously, the teacher had planned what they saw as the children's learning and was active with them during this time and then enabled them to freely play and do what they wished. If a communicative dialogue was now to be in the centre, the teacher would need to be active with smaller groups all day long, even during play.

The ability to conduct interviews with children is a key competence for becoming able to use metacognitive dialogues to get children to talk, think, and reflect. It is at the crossroads between asking open-ended questions and knowing, as a teacher, what to make children aware of that the competence of the teacher is located. If a question is open, this gives children space to present their ideas rather than simply answering a question that the teacher already knows the answer to (Thulin, 2011). It is here, in children's own perspectives, that the subjective world of the child becomes visible – which gives the teacher access to the understanding of each child and how it may have developed. In many later research projects, we have often gone back to having teachers conduct interviews with children, to record and analyse them, not to make them skilled at interviewing children per se but to help them become skilled at communicating with them. This means that the researchers had an intention to develop children's understanding in communication of the various topics they worked with, which entailed that they needed to become skilled at asking children questions, catching their ideas, and challenging them in communication. Just like the teachers had the intention to influence the children's learning (based on

a curriculum), researchers had their intention based on theory and previous research. Many studies have shown how limited the dialogues are in preschool (see, e.g. Siraj-Blachford, 2007; Jonsson, 2013), and in this kind of pedagogy, communication is a key source. Interviewing or having a dialogue with children is much more difficult than interviewing adults, as one has to be able to both interpret what the child's expressions mean and adopt one's own communication in response to this.

The observations in the preschools were also video-recorded, and the teachers always knew what days we would come to follow their work. In Study I, only one researcher conducted all the data collection, while in Study II there were also two doctoral students involved. They worked as assistants, making observations in the classrooms and conducting interviews with children.

The teachers were also interviewed at the end of the project. The experience they expressed was double, both referring to a demand to do what they experienced as the 'right' things in practice, at the same time as they felt chosen and privileged at having been asked to participate in these research projects – not least as there was not much research being conducted in practice at the time. Illustrating that it was quite unusual to have researchers and practitioners working together, SVT (Swedish public service television) made a programme at one of the preschools. When the children at that preschool had seen the programme, one child said 'Now I know why you ask so many questions, Kristina'. Being a much more active teacher, expected to make the *learning objects visible* for the children in communication and negotiation together with them but without being an instructor, was a challenge for the teachers, and they succeeded to different degrees.

In Study I, the evaluation took place like this: Children participated in tasks that they had not done before. In two of the tasks, an external researcher read two different books and conducted the interviews; in the third task, all children were invited to the Museum of Natural History where an employee gave a small 'lesson', showing an ecological cycle: a fieldfare (*Turdus pilaris*), a dead fieldfare, animal faeces, green leaves, brown leaves, a worm, and lying on the floor. The next day, the same researcher who had done the tasks with the book interviewed all the children. All interviews with the children were transcribed verbatim and were held at the end of various tasks. In Study II an external researcher interviewed all children, asking questions related to different content areas they had been working on, like early mathematics, literacy, environment, and social science. All these interviews were also transcribed verbatim. In many of the tasks in both evaluations, the children also made drawings at the same time as they talked or were given photos to look at, in order to make the topic of the conversations more concrete. The message the teachers received from the researchers was that they should try out the ideas involving using metacognition related to the content they wanted to develop knowledge about among the children, by taking in the children's perspectives in dialogues.

The Researchers' Intentions and Challenges

This kind of development study was challenging in different ways for all who participated, not least the researchers. Being involved in the whole process of development is common in action research, to which this approach is both similar and different. Pramling and Pramling Samuelsson (2013) write that, while both traditional action research and the type presented in this chapter take place in cooperation between teachers and researchers, in traditional action research the problem worked with is generated from the teachers, whereas the research presented here has the goal of developing children's understanding of various phenomena, not as a fixed goal but as a direction for development, and:

the researcher and the teacher have already agreed on what to try to develop in children in terms of the teacher directing their attention to certain objects of learning or specific content areas, while action research has a kind of approach where the learners themselves decide what to learn. In a way, practice is at the centre of action research, while research is at the centre of our approach. In other words, our research has a theoretical framework, while action research is concerned with problem solving in practice. (Pramling Samuelsson & Pramling, 2013, p. 10)

This means that we do not cooperate on equal terms. The preschool teachers do not own their own participation but will rather develop their practice in line with the ideas developed by the researchers – based on both earlier studies and a specific view of learning. This partly entails a collision course with their earlier way of acting as preschool teachers. By this time, participation involves arranging different activities to involve the children in and then taking for granted that they will learn from this. And they do, but not always in terms of making sense of a message.

Another way to compare the two approaches is that we see the teacher's learning as a result of learning about their pupils' sensemaking, while the teacher's learning and development as such form the key aim of action research. Pramling Samuelsson and Pramling (2013, p. 11) continue: 'This also implies that research and the development of practice are two separate actions in our approach, that is, we "put on the stage" and "orchestrate" what we want to generate knowledge about, but research methods and work with teachers differ, while development and research are indistinguishable in action research'.

Our challenges can be described as trying to get teachers to become aware of the pedagogy we were trying to develop and the content worked with in terms of children's understanding. This can be seen as parallel to what we want preschool teachers to work towards with their pupils. This was a challenge, since the pedagogy as such was in the process of being developed. Another challenge was to determine whether the content worked with what could be relevant for children to make sense of, as there were no clear end points but only a direction towards understanding. So, just like we consider teaching in ECEC a question of 'pointing something out to someone' (Doverborg et al., 2013, p. 8), we as researchers have to try to point something out to teachers that they can make sense of.

Discussion and Conclusions

There is a larger challenge when it comes to researchers and teachers cooperating in a development study, today often labelled *praxis-oriented research*. Considering that these projects are more than 30 years old at the time of this writing, when they were conducted, Swedish preschool did not have a national curriculum, like most other countries, and the view of preschool pedagogy was different. Traditionally, preschool was based on child development, which means that the focus was on the child's development as a person and on more general skills, rather than on learning specific content areas. This implies that the development was considered the foundation for learning, while we turn this around and say that children develop when they learn (cf. Vygotsky, 1978, on cultural development) – or, learning and development are two sides of the same phenomenon (Pramling Samuelsson, 2020). Learning as a notion in guidelines for preschool had only appeared in texts (Socialstyrelsen, 1987), a notion that many preschool teachers related to school rather than preschool. One could say that the pedagogy used in the development study broke with tradition in many ways, not least in seeing children's perspectives as correct from their perspectives and experiences as the result of learning but also in focusing on communication rather than children's concrete activities merely as the foundation for their development. This means that it was not only a question of the teachers taking part in a development project; *they also had to challenge their own ways of thinking about their role as teachers and about children's learning*, besides overcoming the notion that the researchers were not the experts, knowing exactly what they should, but rather functioned as an interested dialogue partner based on theoretical concepts and earlier research. At the same time as the teachers felt special due to having been asked to work with a researcher in their daily practice, most of them developed an astonishing competence from being involved in the research, as becoming skilled at attending to children's perspectives and engaging them in challenging metacognitive dialogues are not easy tasks with young children. Some of the teachers ultimately enrolled in preschool teacher education at the university.

Looking more closely at the methodology used in the development studies, in a way, there were three parallel processes going on: (1) The researcher worked in a metacognitive way by metacommunicating about the teachers' work with children – just as the intention was to inspire teachers to work with children in practice. (2) The intention of the methodology dealt with children's perceptions, which changed the teachers' role from planning activities to considering what they wanted the children to understand from the activities they organised – involving children's perspectives as an expression of their views, but also of the meaning they have developed in their learning. And (3) teachers needed to discuss their work with researchers and other preschool teachers who struggled with the same questions – and not least about their own role in children's learning. All these aspects together constituted a challenge for the teachers, who truly needed each other to put them into practice. But they also had to be prepared for criticism from researchers and colleagues – which means that the atmosphere in the group had to be accepting and show progress. It may also be

interesting to think about the cooperation with the children: since we as researchers spent extensive time weekly in the groups, we got to know the children and they got to know us!

Finally, although this research approach was the first in Sweden in which preschool teachers were invited to cooperate with researchers in ECEC, it has now become mainstream in the country since the government launched funding for development, learning, and research, not least to develop long-standing cooperation between academia and preschools and schools (although there is still also more traditional research money to apply for). But it may be typically Swedish/Nordic to use researchers to cooperate in developing practice, at the same time as they can publish scientific articles and books.

References

- Björklund, C., & Pramling Samuelsson, I. (Eds.). (2020). *Innehålllets didaktik i förskolan*. Liber.
- Björnstad, E., & Pramling Samuelsson, I. (2012). *Hva betyr livet i barnehagen for barn under tre år? – En forskningsoversikt*. Høgskolen i Oslo og Akershus.
- Doverborg, E., & Pramling Samuelsson, I. (2012). *Att förstå barns tankar – Kommunikationens betydelse* (4. omarbetade uppl). Liber Utbildningsförlag.
- Doverborg, E., Pramling, N., & Pramling Samuelsson, I. (2013). *Att undervisa barn i förskolan* [Teaching children in preschool]. Liber.
- Jonsson, A. (2013). *Att skapa läroplan för de yngsta barnen i förskolan: Barns perspektiv och nuets didaktik* [Creating curriculum for the youngest children in preschool: Children's perspectives and didactics of the present moment]. Acta Universitatis Gothoburgensis.
- Marton, F. (1981). Phenomenography: Describing conceptions of the world around us. *Instructional Science*, 10, 177–200.
- Marton, F., & Booth, S. (1997). *Learning and awareness*. Routledge.
- NSIN Research Matters. (2001). Learning about learning enhances performance. *NSIN Research Matters* (13).
- Pramling, I. (1983). *The child's conception of learning*. Acta Universitatis Gothoburgensis.
- Pramling, I. (1990). *Learning to learn. A study of Swedish preschool children*. Springer.
- Pramling, I. (1991). Learning about "the shop": An approach to learning in preschool. *Early Childhood Research Quarterly*, 6, 151–166.
- Pramling, I. (1994). *Kunnandets grunder. Prövning av en fenomenografisk ansats till att utveckla barns förståelse för sin omvärld* [The foundations of knowing. Test of a phenomenographic effort to develop children's ways of understanding the surrounding world]. Acta Universitatis Gothoburgensis.
- Pramling, I. (1996a). Phenomenography and practice. In G. Dall'Alba & B. Hasselgren (Eds.), *Reflections on phenomenography. Toward a methodology?* (pp. 83–101). Acta Universitatis Gothoburgensis.
- Pramling, I. (1996b). Understanding and empowering the child as a learner. In D. Olson & N. Torrance (Eds.), *Handbook of education and human development: New models of learning, teaching and schooling* (pp. 565–589). Basil Blackwell.
- Pramling, N. (2015). Positioning children in research and implications for our images of their competence. In M. Fleer & N. Pramling (Eds.), *A cultural historical study of children learning science*. Springer.
- Pramling, N., & Pramling Samuelsson, I. (Eds.). (2011). *Educational encounters: Nordic studies in early childhood didactics*. Springer.

- Pramling Samuelsson, I. (2020). Barndom och pedagogik – omsorg, uppfostran och lärande i förskolan. In U. P. Lundgren, R. Säljö, & C. Liberg (Eds.), *Lärande Skola Bildning. Grundbok för lärare* (pp. 171–201). Natur & Kultur.
- Pramling Samuelsson, I., & Asplund Carlsson, M. (2008). The playing learning child: Towards a pedagogy of early childhood. *Scandinavian Journal of Educational Research*, 52(6), 623–641.
- Pramling Samuelsson, I., & Pramling, N. (2013). Orchestrating and studying children's and teachers' learning: Reflections on developmental research approaches. *Education Inquiry*, 4(3), 519–536.
- Singer, E., & Wong, S. (2021). Early childhood theories, ideals and social-political movements, an oral history study of pioneers in the second half of the twentieth century. *Early Child Development and Care*. <https://doi.org/10.1080/03004430.2020.1850445>
- Siraj-Blatchford, I. (2007). Creativity, communication and collaboration: The identification of pedagogic progression in sustained shared thinking. *Asia-Pacific Journal of Research in Early Childhood Education*, 1(2), 3–23.
- Socialstyrelsen. (1987). *Pedagogiskt program för förskolan*. Allmänna förlaget.
- Sommer, D., Pramling Samuelsson, I., & Hundeide, K. (2010). *Child perspectives and children's perspectives in theory and practice*. Springer.
- Thulin, S. (2011). *Lärares tal och barns nyfikenhet: kommunikationen om naturvetenskapliga innehåll i förskolan*. Acta Universitatis Gothoburgensis.
- UN Convention of the Right of the Child. (1989). UNICEF.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner & E. Souberman, Eds.). Harvard University Press.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 3

Exploring Mixed Roles and Goals in Collaborative Research: The Example of Toddler Mathematics Education



Camilla Björklund and Hanna Palmér

Abstract This chapter focuses on the methodological possibilities and challenges arising from the mixed roles and aims between researchers and teachers in a research project aimed at developing educational practices with toddlers. The project was conducted in close collaboration between researchers and preschool teachers in Sweden for three semesters using an iterative design of meetings every 2 weeks to evaluate, develop, and plan teaching activities for toddlers. The key questions concerned deepening the knowledge, both theoretically and empirically, of how children develop numerical skills and how this development can be facilitated in early childhood education. Due to the specific context in which the research and development were undertaken, methodologies previously used in research on early mathematics had to be further developed. During the close collaboration in carrying out the project, unanticipated methodological challenges involving the mixed roles and goals of the collaborators did arise but turned out to enrich the knowledge for all participants. The challenges concerned both the common goal to learn more about early mathematical learning and the diverse approaches with which preschool teachers and researchers entered the project.

Introduction

Preschool is the first step in the education system in the Swedish context, and the Education Act (SFS 2010:800) states that every child in education should participate in teaching that offers them opportunities to develop and learn basic skills and values. This also concerns the youngest children enrolled in education (starting with

C. Björklund (✉)
University of Gothenburg, Gothenburg, Sweden
e-mail: camilla.bjorklund@ped.gu.se

H. Palmér
Linnaeus University, Växjö, Sweden

1-year-olds) and the content of mathematical knowledge and skills. However, unlike what is common in steering documents for education in several other countries, neither the Education Act nor the Swedish National Agency for Education offers information on *how* this teaching is to be conducted. Thus, the Swedish governing document presents the goals for the education but little guidance in how to design the teaching.

The question of *how* to teach mathematics with toddlers (children under the age of 3) concerns both the field of mathematics education research and the teaching practices in preschools with young children. The teaching is to be based on scientific knowledge and empirical good practice, which means that researchers and teachers should join forces in a commitment to develop high-quality education. Thus, *how* to conduct mathematics teaching for 1-year-olds is both a theoretical and an empirical question that needs to be investigated in preschool, in collaboration between researchers and teachers.

Taking a Children's Perspective

There is an abundance of research on young children's numerical understanding and development of arithmetic skills. Most research takes a cognitive perspective (e.g. Carpenter et al., 1982; Fuson, 1992; Baroody & Purpura, 2017), describing mental processes of constructing knowledge as putting pieces of knowledge together into schemas (see Steffe, 2004). This research, based on cognitive theories, often describes what children are and are not able to do in a consecutive order of advancing skills; that is, the focus is on *development*. But, while the interest in these studies is not generally in how to facilitate the learning of numerical understanding and arithmetic skills, this is a highly essential question for early childhood education. To indulge in these pedagogical questions, we suggest a change in the theoretical perspective to rather take a phenomenological approach, in which the departure point is how the world (e.g. numbers and arithmetic principles) appears to a child. This approach is also more familiar to preschool teachers, who on a daily basis meet children who experience mathematical phenomena in sometimes very different ways than adults do. For preschool teachers, being sensitive to the child's perspective and way of understanding is more practicable than trying to 'read' what cognitive processes lie behind a child's acts and utterances. Furthermore, taking a children's perspective – that is, how they make sense of something (Sommer et al., 2010) – as a guiding star is also powerful for developing theoretical knowledge of how to teach mathematics to young learners, as how children make sense of something directs attention to how the teaching can help the child broaden his or her way of experiencing the learning objects, that is, what numbers mean and what is possible to do with them. This was the basic approach in the project that is the empirical example in this chapter, a development and research project conducted in preschools with toddlers, aiming to empirically investigate *what* constitutes toddlers' learning

of numbers and emergent arithmetic skills and *how* early childhood education can facilitate this learning.

Theoretical and Empirical Interest in Toddlers' Learning

The project, carried out by 2 researchers, 3 preschool teachers, and 27 toddlers, was funded by an agency¹ that particularly emphasises collaborative research between teachers and researchers with the purpose of developing educational practices. This meant that teachers and researchers came together already in the project's planning stage, before funding was received, to formulate research questions and outline the project's design. Once the project was launched, the collaboration continued for 3 years in an iterative process of recurring meetings every 2 weeks. At these meetings, activities were planned, conducted activities were evaluated, and possible learning outcomes and shortcomings were discussed, as were different interpretations of toddlers' acts and utterances. These discussions resulted in revisions to teaching acts and activities, new ideas for how to conduct or develop an activity, and plans for what would be particularly focused on until the next meeting. The teachers documented their activities in videos and uploaded them onto a secure common server that enabled the researchers and teachers to see what was enacted in the preschools. These documentations thus generated data not only for the concurrent development of activities but also for further analyses of children's learning over a prolonged period of time. Figure 3.1 shows an overview of the project and the different modules.

The project built on collaboration in which teachers and researchers added their competencies to the collective knowledge. In Year 1 preparations were made for the study, such as ethical clearance application and pertinent consent forms for the participating children's legal guardians. This first year also included a thorough piloting of the assessment tool that was to be used to follow the children's learning. Activities were also conducted to deepen the collective understanding of the theoretical underpinnings for teaching (in this case, variation theory of learning; Marton, 2015) and how these might be implemented in teaching activities.

The assessment tool was designed as play-based conversation, framed as a story about a cat who invites friends to a birthday party. This frame was chosen because it was hopefully a familiar setting to the toddlers, in which dividing and sharing, playing games, and creating sets of items would be natural occurrences and inspire the children to take part in conversations about the cat and the events that occurred. In this setting, the teachers invited the children to play the narrative together with them by participating in a variety of tasks with numerical content, in a naturalistic preschool setting. The tasks embedded in the narrative were developed at five levels of difficulty, whereby the teachers were to follow a manuscript but at the same time

¹Swedish Institute for Educational Research. Grant no. 2018-00014.

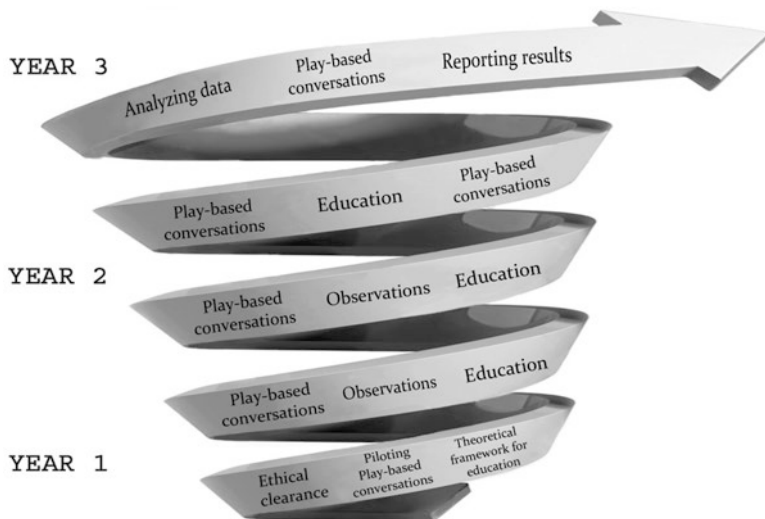


Fig. 3.1 Overview of the project, the iterative collaboration process, and the different modules

be sensitive to the toddlers' responses. The second semester and the beginning of the second year of the project followed a similar design, with play-based conversations conducted by the teachers at approximately 6-month intervals.

One observation each in the second and the third semester was also conducted by the researchers visiting the preschools, to capture instances of children's spontaneous engagement in preschool activities. Together, the observations and play-based conversations were significant for the general outline of the teaching activities enacted by the teachers for three semesters, with recurring meetings to evaluate and revise the teaching. The teachers' experiences strongly influenced the development of the activities concerning communicative approaches (i.e. how to attract the children's interest) and making use of available resources, while the researchers' analytical approach to the acts and implementation of theory helped in both evaluating the potential of an activity and further developing practices on a scientific basis. The third year of the project was more focused on scientific analysis and reporting of project results, but even in this process, the teachers were invited to participate, for example, in presenting the project at conferences and in different fora for communication (e.g. publications and feedback to their co-workers at the preschools as well as to parents).

The project showed high potential for developing theories on early numerical learning and how learning may be facilitated in preschool education with toddlers, on a scientific basis. The large amount of data generated and the longitudinal design enabled for thorough analyses of learning both within and between children and within and between the designed teaching. Results show, for example, the potential for teaching and learning in preschool when taking one's starting point in games, songs, and book reading and thus in the interests shown among children within the

preschool context (see Björklund & Palmér, 2022; Palmér & Björklund, 2022). A crucial aspect was to alter these common activities, based on both theoretical underpinnings and pedagogical competencies in action, in order to afford the children experiences and explorations that facilitated their learning.

Key Features for Generating Valid and Reliable Results

One important key for generating scientifically solid results was measuring the toddlers' learning progress (did the teaching have the intended effects?). To accomplish this, we needed to generate valid data on the toddlers' knowledge, even though verbal skills among them were limited. This in turn required a new way of thinking about knowledge and skills in mathematics. To generate valid data, the tasks in the play-based conversation (see above) were designed on the theoretical principles of variation theory of learning (see Marton, 2015). The tasks were to simultaneously adhere to the children's experiences and their different ways of understanding (Björklund & Palmér, 2021). The children were invited to participate in these tasks with numerical content, and based on their actions, we could explore their ways of understanding basic features of numbers and what content the teaching should emphasise. However, to orchestrate such an investigation, we found it critical to involve the teachers in conducting these play-based conversations, as it was not reasonable to believe that an outside researcher, who did not know the toddlers, would be able to interact and communicate with them in a way that gave them the best conditions for demonstrating their knowledge. Toddlers' expressions are sometimes highly subtle and demand exclusive knowledge of the individual child's ways of expressing him/herself. Thus, the design of the tasks and having the teachers conduct the play-based conversations increased the internal and ecological validity in favour of external validity.

Another central issue in the project was to study teaching activities and what aspects of them facilitated learning, thus focusing on principles that seemed to guide successful teaching. Based on observations, in collaboration we redesigned common preschool activities based on both theoretically and empirically discovered principles. This part of the study required close collaboration, including different competencies, in which the teachers' knowledge of the conditions for teaching and the available artefacts and resources, and not least their pedagogical skills in conducting the designed activities with sensitivity to the children's needs and responses in the situation at hand, were indispensable. One feature of redesigning the common preschool activities was stretching their potential as means for teaching about number meaning. From this followed the necessity to adapt the content addressed in the activity to the aspects of numbers that a particular child had not yet discerned. Adapting activities in accordance with each child's preconditions in order to help them learn to their fullest potential is in line with the Education Act (SFS 2010:800) and the United Nations Convention on the Rights of the Child (UN, 1989) and is thus a foundational approach in early childhood education and care. For instance,

playing a memory game with dots on cards to make pairs of was found to be very differently challenging to different children, and in their teaching acts, the teachers had to decide what kind of pairs (similar or different patterns) and number of dots (1–3 or 1–4 dots in total) would be appropriate in order to present the child with a challenge that would extend their experience of numbers while retaining their interest in the game (reminiscent of Vygotsky's Zone of Proximal Development). This could only to a limited extent be planned beforehand based on theoretical principles and observations; instead, the outcome of the interaction and playing the game in the particular situation was taken as the basis for didactical decisions. Due to the closeness to the preschool setting and familiar activities, the internal and ecological validity increased, again in favour of external validity.

As described above, the project's outcome and success in many ways depended on the close collaboration and contribution of the project members' different competencies. Below we will elaborate on the methodological challenges that emerged in the project, which involved both the common goal to learn more about early mathematical learning and the diverse approaches with which the preschool teachers and researchers entered the project.

The Challenges of Collaboration

Collaboration between researchers and teachers is not a new phenomenon. There have been many projects, often within the frame of action research, in which questions relevant to both researchers and teachers have been researched and practices respectively concerning the two groups have been developed. Many teachers have also been involved in courses, academic programmes, and in-service training in which research results and methods have been embodied. Even so, collaboration between researchers and teachers in joint projects has recently become more common. This has been especially evident in Sweden, where government enterprises are encouraging developmental projects in collaboration between researchers and teachers, in which the competencies and questions of both parties are attended to (see, e.g. commissioned by the Swedish government: Instructions for the Swedish Institute for Educational Research, SFS 2014:1578, and the national ULF project, Committee on Education, Dir. 2017:27).

Joint Project But Diverse Goals

Research is a different activity to teaching, which consequently means that a teacher's competencies do not necessarily help in research on toddlers, in the same way as a researcher's competencies do not necessarily help in teaching toddlers. Thus, in collaborative projects we have to bear in mind that participants are both insiders and outsiders (McKenney & Reeves, 2019) in the joint project, even though the project

goals may be shared on some levels. That said, we argue that both perspectives are necessary.

In projects aimed at contributing both theoretically and empirically to a certain field of knowledge, it is possible to distinguish diverse goals of teachers and researchers. For example, the researchers' aim is often primarily to gain deeper knowledge of underlying structures and discourses in the teaching and learning process, while teachers may primarily seek methods and means to ease their daily practice in relation to current conditions, curricula, and specific (local) contextual factors that influence what is seen as possible to develop and do. Or, the researchers aim to change practice through new knowledge, while the teachers aim to implement and adapt new knowledge to existing conditions. All these aims are highly relevant for developing educational knowledge but are foregrounded to different extents. A typical example from the project presented here is the rare opportunity to teach a group with only a few children at a time in a preschool practice that is often understaffed and where available spaces are limited, while the scientific study of principles for teaching a specific content might require limiting the number of possible interactions to enable systematic and valid analyses. In our case, the support for the project by the head of the preschool was found to be crucial, enabling both time and space for the teaching activities. This was also enabled by economic compensation for stand-in personnel, included in the project budget already in the application for funding.

Collaboration between researchers and teachers provides opportunities to bring to the fore both outsider and insider perspectives (McKenney & Reeves, 2019), which contributed to our understanding of the contributions of different perspectives in our project as well. In an ideal setting, researchers learn from practitioners, e.g. through adaptations of interventions that meet teachers' goals in ways different to those conceived by their designers, and vice versa. Another reason for cooperation is that, without the involvement of teachers, it is difficult to gain clear insight into potential curriculum implementation problems and to generate measures to reduce these problems. New interventions, however imaginative their design, require a continuous anticipation of implementation issues, involving not only 'social' reasons for withholding commitment to a joint project but also 'technical' benefits for improving the innovations' fitness for survival in real-life contexts (Van den Akker, 2010). Van den Akker thus holds that the professional development of *all* participants is key to optimising curricular interventions. He further observes a change in research concerning how to perceive teachers' role in educational science, whereby the emphasis was previously on 'fidelity' but is now turning to teachers having agency in their implementation of an innovation in their teaching practice. This may be done through active engagement in the planning and evaluation of enacted teaching.

Different Approaches But Interchanging Roles

One way of describing collaborative projects is that the participants have different roles, with, for instance, the researcher serving as the outsider to the teaching practice but providing a community (field of research) in which the research and questions originating from the teachers' (insiders') lived experiences can be shared and common issues addressed.

Wagner (1997) highlights two issues that have been raised in reflections on collaborative research and development in educational science: first, the difficulty in generating knowledge useful for educational practice if one does not collaborate with teachers and, second, the asymmetry of power and knowledge that might arise between researchers and teachers. Wagner proposes a typology of social organisation within which individuals participate in a co-oriented social activity that puts the asymmetry in perspective. Wagner also outlines that symmetry does not necessarily have to be a primary goal in the collaboration; the need for symmetry depends on the focus of the research and particularly on the research question and the structure of inquiry.

In an asymmetric collaboration, according to Wagner (1997), the different perspectives of the participants (researcher and teacher) are accepted, and the different kinds of expertise they bring to the research are valued but *are not expected to be shared* or mediated between participants. In many educational research projects, we can see asymmetrical collaboration whereby the researcher is often the agent of inquiry and the teachers' work is the object of analysis and development. But they are engaged in *jointly defined work*, which means that the partners acknowledge and value each other's skills and knowledge. In this relationship, both researchers and teachers are the agents of inquiry, while the object of inquiry is still the members of the educational practice. A third kind of collaboration, according to Wagner (1997), is characterised by *co-learning agreements*. This collaboration draws on knowledge that is generated through research in which both researchers and teachers are equally responsible for initiating changes. The latter collaboration, with teachers engaged in investigating their own practice, seems to induce development in discourse and educational changes to a higher degree than does the asymmetrical collaboration in which the researchers are the ones with agency of inquiry and the (pre)school is made the object of inquiry. Now, the kind of collaboration that is established is also related to what kind of knowledge the research will be able to contribute; that is, what type of research questions and research designs are applicable.

Jaworski (2003) presents a framework for understanding so-called co-learning in research that includes researchers exploring from the outside and/or teachers exploring from the inside and, ultimately, the value of these practices influencing each other for improved teaching. Researchers and teachers are both participants in processes of education and systems of education. Both are engaged in action and reflection, and by working together, each might learn something about the world of the other as well as his or her own world and its connections to different institutions. Nevertheless, in our experience, the dimensions 'insider' and 'outsider' are not

dichotomies or outermost poles that propose some form of dualism, as each participant enters a project with a subjective understanding of its goals, roles, and approaches. This means that what is learnt is not the same – of the same form or at the same level – for all.

In different kinds of collaborative studies, teachers and researchers have different approaches to the project and to the roles their collaboration entails. If participants in a project expect themselves to have more or less power than the collaboration type entails, they might face difficulties. The close collaboration that takes its departure in the conducted practices in our project (documented in video recordings for all participants to share) offers help in avoiding several problems concerning implementing research results or new knowledge in preschool settings, bridging potential stereotyped roles (such as insider/outsider). Namely, there is no need for a ‘translation’ of new knowledge to be adapted by teachers, since the research starts in their practices and ends in developing the same practices (see also Pramling et al., 2019). Nevertheless, the learning of one participant is dependent on the participation and learning of the other, while both are engaged in a common activity for mutual benefit. In this process, establishing intersubjectivity and coordinating perspectives by explicating and clarifying expectations and what one means are necessary components of the collaboration (see Pramling & Peterson, 2023, Chap. 10).

In our project the aim was set to investigate *how to facilitate learning*, as a common ground for engagement, which is heavily practice-oriented and relevant for developing teaching both in the preschool teachers’ daily work and in educational science. As described above, the data generation and teaching activities could not have been conducted in another kind of collaboration than what Wagner and Jaworski frame as co-learning, but we also discovered that the kind of collaboration changed during the project. In some parts, not least when reporting the study, we indeed had a jointly defined work type of collaboration in which the educational work conducted by the preschool teachers was analysed in detail. Participating in these parts of the project required a great deal of courage from the teachers. They volunteered to take part in changing what was known (their teaching practices) and at the same time offered their acts to be objects of analysis. In such cases the collaboration, building on trust and commitment, is put to the test and will easily break if roles, goals, and expectations are not known and agreed upon by all participants.

What we see in the studies we are involved in is that the collaboration and participants’ roles often change over the life of the project, which is not discussed in the literature mentioned above. The teachers participated in the research, in both teaching interventions and more systematic investigations of skills and ways of understanding numbers among the toddlers. That is, activities that were necessary for obtaining valid data from very young informants demand specific skills that traditionally belong to researchers’ pool of competencies. Thus, in the project, the preschool teachers’ pedagogical skills needed to be mixed with the skills of a researcher. The ambivalence in roles and expected competencies changed over the time of the project, with different skills needing to be foregrounded at different points. This demands a cognisance of the purpose of a certain activity, but also of what the individual teacher may contribute in competence to the common goals.

One typical example of this is the observation of a child not seeming to respond at all to the activity he or she is invited to participate in. From the researchers' perspective, this could be interpreted as a failure as the activity did not attract the intended attention to a certain learning object. The teachers, on the other hand, with their experiences of the children, reassured us that this was a common reaction to encountering a larger number range or unknown mathematical aspects. Some children responded hesitantly to all new encounters and needed to experience a new phenomenon several times before engaging wholeheartedly in an activity, which was a well-known behaviour to the teachers and did not indicate to them that the activity was inappropriately designed per se. Also, when a default in response observed by a teacher was raised as troublesome since the child acted in a non-typical way, a researcher-guided systematic observation of what the specific activity afforded this particular child the opportunity to discern (and not discern) brought to the fore new insights into how to further develop the teaching practices.

Conclusions

Collaboration is not an easy endeavour, as the story of the project used as an example in this chapter as well as so many other projects testify. But we choose to see the challenges we have faced as the greatest opportunity to reflect on our own preconceptions, expectations, and shortcomings. We have learnt many things from this, about educational practice, about implementing new ideas and changing old ones, about doing research, and not least about the necessity for different but complementary competencies for developing new knowledge that will make a difference for *both* educational science and early childhood education. Such a learning process takes time, and to our great fortune, we had the opportunity to use a longitudinal project design, which enabled us to explore the roles, expectations, and competencies we were working with. In this sense, we accomplished what Wagner (1997) described as a co-learning agreement: During the collaboration we changed the participating teachers' practices (teaching) and the researchers' ways of conducting their practices (research). But it is not yet known whether this will be sustained and develop further now that the collaboration has ended.

References

- Baroody, A., & Purpura, D. (2017). Early number and operations: Whole numbers. In J. Cai (Ed.), *Compendium for research in mathematics education* (pp. 308–354). National Council of Teachers of Mathematics.
- Björklund, C., & Palmér, H. (2021). Designing a tool for exploring toddlers' number knowledge in preschool. In Y. Liljekvist, L. B. Boistrup, J. Häggström, L. Mattsson, O. Olande, & H. Palmér (Eds.), *Proceedings of MADIF 12 the twelfth research seminar of the Swedish society for research in mathematics education.*, Växjö, Sweden, January 14–15, 2020 (pp. 1–10).

- Björklund, C., & Palmér, H. (2022). Teaching toddlers the meaning of numbers – Connecting modes of mathematical representations in book reading. *Educational Studies in Mathematics*. <https://doi.org/10.1007/s10649-022-10147-3>
- Carpenter, T. P., Moser, J. M., & Romberg, T. A. (Eds.). (1982). *Addition and subtraction: A cognitive perspective*. Lawrence Erlbaum.
- Committee on Education. (2017). *Kommittédirektiv. Ökad samverkan kring praktisknära forskning för stärkt vetenskaplig grund i skolväsendet*. Dir. 2017:27. The Swedish Government.
- Education Act. (2010:800). Stockholm: Ministry of Education and Research.
- Fuson, K. (1992). Research on whole number addition and subtraction. In D. Grouws (Ed.), *Handbook of research on mathematics teaching and learning* (pp. 243–275). Macmillan Library Reference.
- Instructions for the Swedish Institute for Educational Research (SFS 2014:1578). Ministry of Education and Research.
- Jaworski, B. (2003). Research practice into/influencing mathematics teaching and learning development: Towards a theoretical framework based on co-learning partnerships. *Educational Studies in Mathematics*, 54, 249–282.
- Marton, F. (2015). *Necessary conditions of learning*. Routledge.
- McKenney, S., & Reeves, T. (2019). *Conducting educational design research* (2nd ed.). Routledge.
- Palmér, H., & Björklund, C. (2022). The teaching of numbers in common preschool activities – A delicate balancing act. *Early Childhood Education Journal*. <https://link.springer.com/article/10.1007/s10643-022-01354-x>
- Pramling, N., Wallerstedt, C., Lagerlöf, P., Björklund, C., Kultti, A., Palmér, H., Magnusson, M., Thulin, S., Jonsson, A., & Pramling Samuelsson, I. (2019). *Play-responsive teaching in early childhood education*. Springer. <https://link.springer.com/book/10.1007%2F978-3-030-15958-0>
- Sommer, D., Pramling Samuelsson, I., & Hundeide, K. (2010). *Child perspectives and children's perspectives in theory and practice*. Springer.
- Steffe, L. P. (2004). PSSM from a constructivist perspective. In D. H. Clements, J. Sarama, & A.-M. DiBiase (Eds.), *Engaging young children in mathematics: Standards for early childhood mathematics education*. Lawrence Erlbaum.
- UN. (1989, November 20). *Convention on the rights of the child*. United Nations. <https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>
- Van den Akker, J. (2010). Building bridges: How research may improve curriculum policies and classroom practices. In S. M. Stoney (Ed.), *Beyond Lisbon 2010: Perspectives from research and development for Education Policy in Europe. Volume 10 of CIDREE yearbook* (pp. 175–195). CIDREE, Consortium of Institutions for Development and Research in Education in Europe.
- Wagner, J. (1997). The unavoidable intervention of educational research: A framework for reconsidering researcher-practitioner cooperation. *Educational Researcher*, 26(7), 13–22.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 4

Managing the Tension Between the Known and the Unknown in Knowledge-Building: The Example of the Play-Responsive Early Childhood Education and Care (PRECEC) Project



Cecilia Wallerstedt

Abstract This project was aimed at taking on the challenge of developing a *didaktik* for preschool, through empirical and theoretical work. The design was built on teachers' own video observations of play activities in preschool, where they themselves were participants. Teachers, their principals, and researchers met regularly at the university to collaboratively discuss the video recordings. On these occasions the researchers also provided further education on theoretical concepts useful for analysing play activities in preschool, such as metacommunication and intersubjectivity. The outcome was the theorisation of Play-Responsive Early Childhood Education and Care (PRECEC), consisting of a coherent conceptualisation of teaching, as a responsive activity, and play, as something participants signal to each other through shifts between communicating and acting as is and as if. A challenge we discuss in this chapter is how to deal with the 'unknown' in a practice-based research project, i.e. not only reproducing knowledge (further education) but also, critically and at the same time, developing new knowledge (research).

Keywords Play-responsive teaching · Field access · Play · Further education · Teachers' agency

C. Wallerstedt (✉)
Department of Education, Communication and Learning, University of Gothenburg,
Gothenburg, Sweden
e-mail: cecilia.wallerstedt@gu.se

© The Author(s) 2023
C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_4

Introduction

In an often-cited article on what is commonly referred to as researcher-practitioner cooperation in educational research, Wagner (1997) points out that two critical arguments have been raised in the field. The first is that when teachers are not involved in the research process, it is hard to generate findings that are useful for practitioners. Phrased in other terms, the research will lack pragmatic validity (Nuthall, 2004). The second critical argument Wagner (1997) highlights is that there exist asymmetries of power in educational research. According to this reasoning, the practitioners (i.e. the teachers, in Wagner's view) therefore become the 'oppressed', and it is the oppressor (i.e. the researcher) who has the right to define the problems of investigation. The critique summarised in these two arguments has resulted in a development in the educational research field towards more collaborative projects and greater parity between researchers in academia and teachers in schools or pre-schools. A benefit of this kind of new research, mentioned in the literature, is that it may help to reduce the so-called theory-practice divide, due to its emphasis on action and research (Bevins & Price, 2014). In this chapter, an example of one such research project will be presented and discussed. The aim of the particular project was to take on the challenge of developing a *didaktik* for preschool, through empirical and theoretical work. It started in late 2015 as a pilot project and then received funding for 2016–2019 from the Swedish Institute for Educational Research.¹ Participants initially included 11 researchers from 3 universities, as well as principals and preschool teachers from 7 preschool units. The *didaktik* that the project resulted in is referred to as Play-Responsive Early Childhood Education and Care, hereafter PRECEC (Pramling et al., 2019). The issues to be investigated in this chapter are how collaborative this collaborative project actually was and what its different aims were. These issues will be scrutinised by looking back at (i) the initial phase of the project, when field access was negotiated; (ii) the realisation phase, when the cooperation was elaborated; and (iii) the project's outcomes. The purpose is to contribute critical reflections in relation to the now well-established form of collaborative research in which representatives from academia and schools/pre-schools carry out projects together and to the methodological research within the field.

Field Access: From Whose Perspective?

For obvious reasons, educational institutions are often in focus in educational research, and in this anthology (Wallerstedt et al., 2023), the institution in question is Early Childhood Education and Care (ECEC) (in Sweden often referred to simply

¹The research built upon here was funded by the Swedish Institute for Educational Research (Skolfi 2016/112), which is gratefully acknowledged.

as preschool). The main actors in this kind of research are preschool teachers. Richard and Bélanger (2018) have conducted a study in which they scrutinise the reasoning that underpins teachers' decision to take part in research projects or refuse to do so. Reviewing the literature on what is usually conceptualised as 'field access', they identify some factors of importance. In the first place, it is crucial to establish a relationship between the researchers and other participants that is characterised by a sense of trust. Trust is a necessary condition for several reasons. One that Richard and Bélanger point out is that, as teaching practices can sometimes be private in nature, teachers taking part in a study can have the sense they are being evaluated. This can be a reason why teachers refuse to participate, and therefore trust among participants is important. It has also been shown to be crucial that teachers have an interest in the subject of research. Lacking such interest, or already having a heavy workload, are possible reasons for declining invitations to take part in research projects.

In order to reflect on how the project leading to the theory of PRECEC started, I will go through the very first emails between the preschool principal and one of the researchers at the university. In these few messages, the different perspectives on the emerging aim of the project are revealed:

August 23, 2015: Email from preschool principal to researcher

There are a number of us preschool principals in the district who have Developmental Pedagogy as a common ground for our work. Most of the time, we feel somewhat lonely, and we're jealous looking at other networks that Reggio preschools are part of. Is there any possibility that the university could help set up a network for us? We're willing to contribute so that it can become a reality. (my translation)

Two things are important in this email. First, the initiative for the collaboration comes from the preschools. However, the driving force here is the preschools' administration rather than the teachers. This fact has both its strength and weaknesses. One could assume that the preschool principals' support for the project is a guarantee that the issue of workload is taken care of. The principal writing the email above explicitly says that they (the leadership) are willing to contribute in necessary ways. That she turns to the university with her question is also a sign of some basic sense of trust. However, what we do not know is how widespread and anchored the interest in the focus of the suggested collaboration, in this case Developmental Pedagogy (Pramling Samuelsson & Asplund Carlsson, 2008), is among the teachers. One aspect that Richard and Bélanger (2018) point out in their study is that the school administration sometimes plays an authoritarian role, forcing teachers to participate without considering their views. Without saying that this was the case here, it is important to note that collaboration with preschools (or schools) arguably needs to be viewed in a differentiated way – several actors are involved, teachers as well as principals (and sometimes others), and each of them can have their own specific agenda and motives.

The second aspect of interest in this first email, in relation to 'field access', is that it can be regarded as a two-way process. Discussing research, this is typically referred to as researchers getting access to the field of practice; but here, it could be

interpreted as the practitioners seeking access to the field of academia. Richard and Bélanger (2018) have found that teachers see participation in projects as an opportunity to interact with the research community. Even if the initial question from the principal does not concern a research project, it is clear that she has positive expectations of the university as a possible partner in a collaboration. In the first response from the researcher, the different motives for collaboration become visible:

August 25, 2015: Email from researcher to preschool principal

The group I met yesterday was very excited, but they think we should start on a small scale with fewer preschools. See attachment, how we reason; and if you think this could be a way to start, that would be nice. We'll just call you partner preschools as a start. If we do it this way, we feel that both of us will win. We have a common problem that we want to solve. (my translation)

In the attached letter, it was stated:

In recent years, theoretical frameworks for understanding how to facilitate children's learning in preschool, in the form of Developmental Pedagogy (Pramling Samuelsson & Asplund Carlsson, 2008) and Variation Theory (Magnusson, 2013; Thulin, 2011), have been developed. Teaching as a concept has also been theorised in relation to the context of preschool, a concept that has not previously been common in relation to preschool (Doverborg et al., 2013; see also, Pramling Samuelsson & Pramling, 2011). This theorisation is still undergoing formation. Organising in terms of themework in preschool has been elaborated (e.g. Doverborg et al., 2020), while play as a ground for children's learning in preschool has rather receded into the background. Play now needs to become a figure in further research and theorising. The goal of the project (and network) planned here is to generate and share new knowledge about how a *didaktik* for preschool can be developed in a way that does not exclude play. Wherein play consists, and how play comes into play in activities in preschool where teachers intend to develop children's understanding and abilities, we do not presently know enough about. One may imagine that teachers contribute to children's play and learning through entering as participants in ongoing play, through relating to children's play and contributing to further developing it, or through establishing new frames of play for children to act within. Identifying different ways in which play is treated in relation to learning, and particularly with a *didaktik* interest, what is made into content, and how this is done in these activities need to be investigated. It is also possible to see play and learning as a potential field of tension – however, what tensions come into play needs to be studied in actual settings. (my translation)

It can be noted here that what is formulated by the researchers in the attachment is a tentative research idea. This was before the actual research application had been written and, of course, before the project was carried out. Today we can see that we have changed our view from treating play as something that one can base teaching on to seeing teaching as responsive to play (Pramling, et al., 2019). Two days later the preschool principal responds, in this email declaring her interest in their becoming a partner preschool, as suggested by the researcher; but at the same time, she clarifies her view of what it means and what she hopes to gain:

August 27, 2015: Email from preschool principal to researcher

Over the last 2 years we've been working with formulating an overall idea and have developed a working and developmental organisation, connection to theory, and systematic quality management. Our next step, this year, is to assign a preschool teacher at each preschool with the task of leading the process there. Together with us, they will deepen our work with

theory and systematic quality management. [...] What we need right now, for us and the process leaders, is increased knowledge in Developmental Pedagogy. The next step could absolutely be what you describe – play-based *didaktik*. [...] What we want from a network, from our perspective, we who work with Developmental Pedagogy, is a newsletter about new research, lectures, and an annual conference, possibilities for exchange with other preschool principals, and workshops where preschool teachers have discussions with personnel from other preschools. (my translation)

In this exchange of messages, the different agendas for collaboration emerge. They can be explained in light of what Bevins and Price (2014) write in their study on collaborations between academics and teachers: teachers work within an environment that is regulated by certain goals and policies. For example, preschools have the Education Act and a curriculum to follow. This creates a strong culture of accountability requirements. We can see this in the principal's emphasis on systematic quality management, which is typically the principal's remit. The university, Bevins and Price (2014) write, is typically less structured. Researchers can, to a greater extent, choose what work they carry out. As Bevins and Price state, 'teachers may play an important role in contributing to the development of knowledge rather than being relegated to consumers of generated knowledge' (p. 271). An interpretation of this statement could be that it is the researchers who relegate teachers to a subordinate position, but it is noteworthy that it could be the other way around, with the teachers putting themselves in a position as consumers of knowledge. In this case, the researcher argued that 'we have a common problem that we want to solve', but here 'we' is a rhetorical statement. It is the researchers who have decided what this common problem is. Even if the principal recognises the problem, which can be seen when she writes 'the next step could absolutely be what you describe', she still persists that it is a newsletter, lectures, and an annual conference that they are asking for.

The Swedish Institute for Educational Research, which came to be the funding agency for this project, has as one of its requirements that the challenges that a project addresses need to be grounded in the questions of the teachers. In the application for our project, we argued that this was the case, but reflecting on these initial emails, it becomes clear that the very first turns in the communication consisted of different wishes: one that was interested in searching for the unknown (how play and learning can be integrated in teaching) and one that concerned searching for clarifications of what was already known – spreading the established knowledge about Developmental Pedagogy. However the latter arguably does not constitute a research problem, and based on this initial communication, a common research interest was gradually established between the partners. In the following emails, we will find that they come to a kind of agreement:

August 28, 2015: Email from researcher to preschool principal

We have come to understand that teachers generally don't understand how play is connected to learning, and this is what we want to investigate further, both to understand and to develop Developmental Pedagogy so that this becomes clear. To be able to do this, we need help from those who work in practice, to be able to get better at showing what it is. [...] We want to work something out together with you, not that we have the answers – instead, that's what we're searching for together. (my translation)

September 3, 2015: Email from preschool principal to researcher

We agree with what you write, and we find play-based *didaktik* very interesting and exciting. What we struggle with in practice is to get the teaching – the aims – integrated in play [...]. Can we meet up to talk more about what this can mean for both of us? Looking forward to an exciting collaboration! (my translation)

The first meeting between the researchers and preschool teachers took place in December 2015 at the university. Before this first meeting, the teachers had video-recorded play episodes from their preschools – recorded by the teachers themselves, at the initiative of the researchers. At the meeting, the teachers and researchers discussed the recordings, and the principals met with one of the researchers for their own discussion. The first meeting turned out well, and thereafter these meetings were held about six times a year, in various forms, for 3 years. In the second year, the project also received funding and came to include more preschools from another region in Sweden.

An Academia-Preschool Cooperation: Of What Kind?

It could be argued that all educational research in schools involves cooperation of some kind between researchers and teachers, whether implicit or explicit (Wagner, 1997). The cooperation can be categorised as extractive, clinical partnership, or co-learning agreement (see also Björklund & Palmér, this volume, Chap. 3). What differs between these types is mainly who the agent of inquiry is and what the object of inquiry is. In an extractive cooperation, the researchers use the school setting for ‘extracting knowledge’, and it is not necessary that the participating teachers understand the purpose of the research. In a clinical partnership, a shared understanding of purpose is worth striving for, since practitioners are engaged in inquiry, even if the researcher is the agent of it. The practitioners can assist the researcher, but are still the ones who are being studied. In a co-learning agreement, the form of work is more interactive, and the asymmetries are reduced. The teachers and researchers work together and engage in both action and reflection. It could be argued that reflection is also an action, but this is the term Wagner uses to describe the different types of contributions. Wagner stresses that these forms of cooperation are not categorically positive or negative; rather, it depends on the aim of the research. But in a co-learning agreement, both teachers and researchers can be regarded as change agents, active in different institutions, which ensures change initiatives in separate arenas. This means that teachers share their new knowledge with their colleagues, as do the researchers in the research community.

Zipin and Hattam (2009) argue, based on a discussion of action-based research, that it is important to scrutinise the partial perspectives of the distinct participants, especially one’s own. Wagner’s (1997) categories can be useful in this, given our role as researchers in the PRECEC project. It is tempting to say that our cooperation was a co-learning agreement. But even if we framed it, in Wagner’s words, as ‘a shared research enterprise’ in which ‘both are engaged in action and reflection’

(p. 16), this can be questioned. As mentioned, the design we followed entailed meeting at the university, where we watched and analysed video recordings that the preschool teachers had brought. The meetings also came to include lectures by the researchers, which served as starting points for the next rounds of video recordings. For example, one lecture was given about narrative play, and we ended that session by asking the teachers to bring recordings of such play scenarios to the next meeting. The lecture topics were chosen based on the researchers' knowledge from previous studies in preschool. They were also planned in response to what came up in the discussions with the teachers. But when did the actual analysis take place, if we consider analysis from a researcher's perspective? To conduct an Interaction Analysis (Derry et al., 2010; Jordan & Henderson, 1995), which was the main method of analytical work we applied in the studies, careful transcripts on a turn-by-turn basis are required; and these transcripts were made later, by the researchers. The teachers left the recordings with the researchers, and in this sense our roles were clearly separated. The cooperation might better be described as a clinical partnership, in which 'efforts are made by both practitioners and researchers to develop a shared understanding of their separate but complementary enterprises' (p. 15).

Returning to the need for trust, previously discussed in relation to field access, it is important to also consider it when reflecting on how the cooperation turned out. In a literature review by Vescio et al. (2008) on professional learning communities, they state that 'successful collaborative efforts include strategies that "open" practice in ways which encourage sharing, reflecting and taking risks necessary to change' (p. 84). Even if what is discussed in the present chapter is a research project, the meetings at the university functioned as a professional learning community, where teachers showed their work to each other and shared their thoughts on it. In the collaboration, a sense of trust is a necessary condition for the teachers to open up. In this project this meant showing themselves to be players, taking part in children's activities in preschool that were open-ended in nature. Of particular interest in the study were situations in which the teachers did not have control over the situation, that is, a distinct plan for what should happen. This was a precondition for searching for the unknown, both in concrete terms (what would happen in the open-ended play) and metaphorically (trying to find a new way of considering the teacher's role in preschool, that is, the desired empirical data that we could analyse to generate research results). Video-recording oneself in situations of these kinds, and showing it to colleagues, researchers, and even principals, can be seen as taking a risk. Because the teachers had the courage to do this, the project could be seen successful in this regard. After a year had passed, in a reflection note, a teacher in the project wrote the following:

It's very helpful to see yourself and other teachers on film. To see how we integrate with the children becomes so clear. It's a very useful tool for us to make our practice visible. We should prioritise using this media even more to document and analyse our practice. You don't need that many films to enable a good dialogue around what, how, and why. But it's also hard to see yourself! It's been good that we've had the same tasks to study, so that we don't video-record just anything. It's been easier to watch others' data. There's been a kind of pressure that we should produce something, and there hasn't always been time for it. When you lack time for planning, the results will easily fail. (my translation)

This note can tell us something about the teacher's experience. She appreciated working with video as a method, even though she felt it was hard to watch herself. The collegial conversations, and the observations being structured around specific themes, were helpful.

In order to create an environment of trust, one could turn to Bevins and Price's (2014) model of successful collaborations. They find that both task support and team support are needed. Task support means that participants have enough time to engage in the project and a fair workload. Again, this was facilitated in the PRECEC project by the principals' active involvement. Team support concerns the group dynamic, mutuality, and cohesion. It could be argued that, in this project, this was mainly the researchers' responsibility. Actions taken to create this mutuality included live-in seminars, where the teachers as well as the researchers presented tentative findings. The researchers presented analysis and conclusions, and the teachers presented how they had changed their everyday work with the children in preschool. Giving voice to 'both sides' was a way of acknowledging the developments resulting from the project in the different fields of research and preschool practice. This also offered an opportunity to articulate one's own perspective and receive feedback. It should be noted that this also required a sense of trust in the researchers. Had we conducted an analysis that made sense to the teachers, did they recognise their own work? Did we succeed in presenting pragmatically valid results? The teachers became our referees in this respect. Richard and Bélanger (2018) find that one obstacle teachers experience in applying knowledge from research is that the specific language used is unfamiliar to them. That the project went on for a longer time may have helped in building a common vocabulary for communicating about what was happening in the analysed play scenarios.

Outcomes of the Project

We have claimed that one of the project's outcomes was the theorisation of PRECEC (Pramling, et al., 2019), consisting of a coherent conceptualising of teaching, as a responsive activity, and play, as something participants signal to each other through shifts between communicating and acting as is and as if. This theorisation was grounded in different theoretical fields, such as psychology, communication studies, and education, but equally important is that it was grounded in the empirical analysis of activities taking place in preschool. This analysis was only possible thanks to the clinical partnership with teachers, actively supported by principals. In Bevins and Price's (2014) list of benefits of action research, one thing they mention is the possibility to reduce the so-called theory-practice divide (for a discussion of this somewhat problematic division, see Pramling & Wallerstedt, this volume, Chap. 12). Action research will support the development of theory specifically to inform practice (e.g. the practice of teaching in preschool), which is contextual. Elliot (2009) reflects on this matter from an epistemological point of view, arguing that it is time to abandon the view of scientists and practitioners (e.g. teachers) as being

separated by a tight boundary. The tradition of educational research, he points out, is grounded in *phronesis* – the kind of wisdom relevant to practical action, implying good judgement. *Phronesis* can be contrasted to *theoria*, which to Plato meant contemplation, speculation, and ‘looking at’. Educational theory must be practically valid and grounded in teachers’ shared ‘practical understanding’. From a post-modern view, this can be contested, as theory has come to be associated with essential and unchanging truth, according to Elliot. He claims that *phronesis* as a mode of practical reasoning can also capture the meaning of *theoria*. Three aspects of *theoria* in educational action research can be pointed out: (1) It is a process of reasoning that yields ‘universal knowledge’. (2) It constructs a clear and systematic view of its subject matter. And (3) it enables the prediction of future possibilities (p. 32). Elliot argues that research conducted in collaboration with practice, as discussed in this chapter, can be ‘of universal significance by throwing light on possibilities for action in other situations’ (p. 35). This is what he argues should be described as theory.

In line with Elliot’s argumentation, the result of our project is new theory. But it also resulted in a network, eagerly monitored by the principals (see the initial emails, above). The network has today grown into a platform for participating preschools all over the country. On the digital platform, recorded lectures are posted. Teachers present to each other at regular seminars, and there is an annual conference at which both teachers and researchers share new insights. However, the initial tension still remains. The teachers and principals ask for further education, and the researchers look for further possibilities to identify, investigate, and get funding for new topics of research. Hence, a collaborative project, with teachers and researchers working together, may always be followed by a division in motives, even if the overall goal is the same: a developed preschool teacher profession and a preschool that serves a sustainable future. This division should not necessarily be taken as sign of insufficient quality but perhaps even the opposite, collaborating without reducing differences (i.e. no homogenisation).

Conclusion

This chapter contains a number of critical reflections that can contribute to the methodological field of research conducted in close collaboration with schools and preschools. In sum, these are the following:

- Talking about researchers and practitioners, as is common in the field, is blunt terminology. ‘Practitioners’ often entail different professions, in this case preschool teachers and preschool principals.
- Field access should be regarded as a two-way process. While researchers may need access to the field of preschools, preschool teachers and principals also need access to academia.

- In order to create an environment of trust, one can turn to Bevins and Price's (2014) model of successful collaborations. They find that both task support and team support are needed. Task support means that participants have enough time to engage in the project and a fair workload. Again, this was facilitated in the PRECEC project by the principals' active involvement. Team support concerns group dynamic, mutuality, and cohesion. It could be argued that in this project, this was mainly the researchers' responsibility. Actions taken to create this mutuality included live-in seminars, where the teachers as well as the researchers presented tentative findings.

References

- Bevins, S., & Price, G. (2014). Collaboration between academics and teachers: A complex relationship. *Educational Action Research*, 22(2), 270–284.
- 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. *Journal of the Learning Sciences*, 19, 3–53.
- Doverborg, E., Pramling, N., & Pramling Samuelsson, I. (2013). *Att undervisa barn i förskolan* [Teaching children in preschool]. Liber.
- Doverborg, E., Pramling, N., & Pramling Samuelsson, I. (2020). *Att arbeta med tema i förskolan – en metodikbok* [Thematic work in preschool]. Liber.
- Elliot, J. (2009). Building educational theory through action research. In S. E. Noffke & B. Somekh (Eds.), *The Sage handbook of educational action research* (pp. 28–38). Sage.
- Jordan, B., & Henderson, A. (1995). Interaction analysis: Foundations and practice. *Journal of the Learning Sciences*, 4(1), 39–103.
- Magnusson, M. (2013). *Skylda med kunskap. En studie av hur barn urskiljer grafiska symboler i hem och förskola* [Signing with knowledge: A study of how children discern graphical symbols at home and in preschool] (Gothenburg studies in educational sciences, 344). Acta Universitatis Gothoburgensis.
- Nuthall, G. (2004). Relating classroom teaching to student learning: A critical analysis of why research has failed to bridge the theory-practice gap. *Harvard Educational Review*, 74(3), 273–306.
- Pramling Samuelsson, I., & Asplund Carlsson, M. (2008). The playing learning child: Towards a pedagogy of early childhood. *Scandinavian Journal of Educational Research*, 52(6), 623–641.
- Pramling Samuelsson, I., & Pramling, N. (2011). Didactics in early childhood education: Reflections on the volume. In N. Pramling & I. Pramling Samuelsson (Eds.), *Educational encounters: Nordic studies in early childhood didactics* (pp. 243–256). Springer.
- Pramling, N., Wallerstedt, C., Lagerlöf, P., Björklund, C., Kultti, A., Palmér, H., Magnusson, M., Thulin, S., Johansson, A., & Pramling Samuelsson, I. (2019). *Play-responsive teaching in early childhood education*. Springer.
- Richard, V., & Bélanger, M. (2018). Accepting research: Teachers' representations of participation in educational research projects. *International Journal of Educational Methodology*, 4(2), 61–73.
- Thulin, S. (2011). *Lärares tal och barns nyfikenhet. Kommunikation om naturvetenskapliga innehåll i förskolan* [Teacher talk and children's queries: Communication about natural science in early childhood education] (Gothenburg Studies in Educational Sciences, 309). Acta Universitatis Gothoburgensis.

- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, 24(1), 80–91.
- Wallerstedt, C., Brooks, E., Eriksen Ødegaard, E., & Pramling, N. (Eds.) (2023). *Methodology for research with early childhood education and care professionals*. Dordrecht, The Netherlands: Springer.
- Wagner, J. (1997). The unavoidable intervention of educational research: A framework for reconsidering researcher-practitioner cooperation. *Educational Researcher*, 26(7), 13–22.
- Zipin, L., & Hattam, R. (2009). Partnership action research for social justice: Politics, challenges and possibilities. In S. E. Noffke & B. Somekh (Eds.), *The Sage handbook of educational action research* (pp. 508–520). Sage.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 5

Success of and Barriers to Workshop Methodology: Experiences from Exploration and Pedagogical Innovation Laboratories (EX-PED-LAB)



Elin Eriksen Ødegaard, Marion Oen, and Johanna Birkeland

Abstract This chapter reports on the emerging findings during the first year of a design- and inquiry-based research project called *Kindergarten Teacher as a Researcher*. The project attempts to implement a design for collaboration and knowledge co-creation through a workshop methodology called *Exploration and Pedagogical Innovation Laboratories (EX-PED-LAB)*. The project was funded by the Research Council of Norway as a starting grant for the common initiative of the Agency for Kindergartens (Bergen City, Norway) and the KINDknow Research Centre [BARNkunne – Senter for barnehageforskning], located at Western Norway University of Applied Sciences (HVL). The goal of the workshop laboratory was twofold: (1) to support early childhood educational leaders and staff in enhancing the quality of kindergartens in close collaboration with researchers and (2) to research three areas of common interest: the play, exploration, and learning environment; collaboration with families; and leadership and governance. This chapter highlights a set of features for success, as well as takeaway points for the further development of the workshop methodology, tailored to future early childhood partnership research programmes. Drawing on the case of the EX-PED-LAB project, the chapter seeks to describe the features of the success of and barriers to collaborative explorative processes and knowledge-creating practices in *practices-developing research*. These insights will be beneficial for further investigations, consolidations, and refinements of the workshop methodology.

Keywords Knowledge creation · Partnership research · Cultural-historical · Collaborative exploration

E. E. Ødegaard (✉) · M. Oen · J. Birkeland
Kindergarten Knowledge Centre for Systemic Research on Diversity and Sustainable Futures (KINDknow), Western Norway University of Applied Sciences, Bergen, Norway
e-mail: elin.eriksen.odegaard@hvl.no

© The Author(s) 2023
C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_5

Introduction

This chapter explores what can be learnt from using workshops as a methodology for research on early childhood education and care (ECEC) professionals, specifically how this approach can inform the research domain of knowledge co-creation, involving practitioners and researchers in what we here propose be labelled *practices-developing research*. Knowledge is understood as closely linked to personal and collective inquiries through practice, meta-dialogues, imagination, exploration, new actions, and new discoveries. These knowledge processes are relational, something always in the making, and are shaped and reshaped over time as new demands and events are encountered. Knowledge is shaped in the making and remaking, in reflecting on the past, and in exploring future events.

The chapter presents the emerging findings during the first year of a design- and inquiry-based research developing a methodology in which the co-creation of knowledge was a central premise. In design research, knowledge is created through successive judgement and process evaluations whilst designing and building an artefact. The artefact in our project was a working model for practices development research. Design- and inquiry-based research blends empirical educational research with the theory-driven design of learning environments. The Design-Based Research Collective (2003) claims that a design approach helps us understand the relationships amongst educational theory, the designed artefact, and practice. Design is central in efforts to foster learning, create usable knowledge, and advance theories of learning and teaching in complex settings. It may also contribute to the growth of the human capacity for change.

Within this overall approach, we built a workshop methodology called *Exploration and Pedagogical Innovation Laboratories (EX-PED-LAB)* from earlier engagement in participatory research, drawing theoretical inspiration from relational ontologies and using transformative change as the aim (e.g. Ødegaard, 2020, 2021; Schei & Ødegaard, 2013).

Workshop as a word has become part of our everyday language and requires no further explanation, but as a methodological concept, it should be defined. According to Ørngreen and Levinsen (2017), workshop as a concept is weakly defined from an academic perspective, as its formats and uses have been developed within authentic contexts (workplaces, the arts, and politics). As such, our chapter will contribute to an in-depth description of a series of workshops as a practice and a research methodology.

The intent of our workshop laboratory was twofold: (1) to support early childhood educational leaders and staff in enhancing the quality of kindergartens in close collaboration with researchers and (2) to research three areas of common interest: the play, exploration, and learning environment; collaboration with families; and ECEC leadership and governance. The project involved participatory, co-creative, and ethnographic methods, creating opportunities for partners to explore, investigate, and develop practice innovation and knowledge together.

Following a design- and inquiry-based research model, it was important during the first year of the project to recognise limitations and find helpful insights for further refinement and improvement. Against this background, we outline the following questions:

1. *What are the enabling features of action that drive pedagogical innovations, and what are the barriers (tensions) to the workshop methodology in partnership research collaboration in the case of EX-PED-LAB?*
2. *What are the takeaway points for the further development of the workshop methodology, tailored to future developments of early childhood partnership research programmes?*

The chapter is structured as follows. We first outline the contextual and conceptual background of EX-PED-LAB, describing the main aspects and concepts of the workshop methodology. We briefly summarise previous research that depicts a relatively recent shift in the relationship between universities and society from knowledge translation (or utilisation) to knowledge production and innovation. We include an outline of the state of the art of workshop as a practice and as a field of research. Moreover, we provide examples to illustrate some of the enabling features of action, as well as some barriers. Finally, the chapter concludes with a number of takeaway points for further development that we anticipate will be helpful when expanding the project and can indicate areas for further research.

Case Context and Rationale

In the local setting of the city of Bergen, Norway, kindergarten teacher staff, the Bergen City management team, and a research team from KINDknow worked together, funded by the Research Council of Norway (2018), as a starting grant for the common initiative of the Agency for Kindergartens (Bergen City, Norway) and the KINDknow Research Centre (HVL).

The initiative followed a growing global trend of creating knowledge in vertical interdisciplinary research teams to address the complex and challenging problems that the ECEC sector faces, with a particular interest in local demands and possibilities. Key policy documents and research identify teachers' professional qualifications as one of the core issues in qualifying early childhood services and recommend investment in innovative in-service professional development as a key long-term strategy to promote ECEC quality (Organisation for Economic Co-operation and Development [OECD], 2012, 2018). Despite a good understanding of the value and purpose of research partnerships, a follow-up evaluation of *Competence for the Kindergarten of the Future* (Sivertsen et al., 2020) showed that, in practice, such collaboration is challenging. This trend of efforts to find solutions to help bridge the gap between what is considered practical versus academic knowledge has lasted several decades (Wagner, 1997) and has proven to be a difficult issue to solve (Bentley & Toth, 2020).

In Scandinavia, participative practices have been seen as powerful democratising elements that can also be used to involve citizens and influential groups in co-creating social innovation in areas such as governmentality (Ind & Coates, 2013). In the domains of public health, medicine, and education, collaboration in interdisciplinary teams is considered crucial for a deeper and more holistic approach to solving citizens' societal and individual problems (Archer, 2012; Bærheim et al., 2022).

The development of good quality in ECEC is a common concern for national and local governments, kindergarten staff, parents, and kindergarten researchers. The benefits of collaboration between researchers and teachers have been recognised politically, professionally, and internationally (Alvestad et al., 2019; Norwegian Directorate for Education and Training, 2018). In enhancing competencies and capabilities in the sector, the transformative power of collaborative exploration and the co-creation of knowledge are often described as altering the roles of citizens, users, and professionals in ways that support sustainable public value outcomes (OECD, 2018; Pestoff, 2019; Wals, 2010).

Although there is broad consensus that innovative approaches can potentially enhance teachers' learning through networking, research-based initiatives, coaching, mentoring, counselling, supervision, teamwork, collegiality, and co-learning (Wals, 2010), we know less about the processual details in partnerships involving kindergartens and universities (Urban et al., 2012). Workshop methodology, as a framing factor for collaborative learning and partnership research, is less documented (Ørngreen & Levinsen, 2017; Borgen & Ødegaard, 2021).

The overall aim of EX-PED-LAB was to go beyond the theory-practice divide in ECEC by recognising multiple forms of knowledge and going beyond the traditional professional learning paradigm, which is structured by top-down models. In such a model, knowledge is generated outside the local practice and is transmitted or translated to teachers with expectations of the implementation of a required programme or particular content. With EX-PED-LAB as a design- and inquiry-based project, we aimed to work in a three-part collaboration, providing opportunities for head teachers (the kindergartens' managers), pedagogical leaders (kindergarten teachers), and researchers (1) to mirror, negotiate, respond to, and follow up on each kindergarten involved and on the network of four kindergartens in order to identify topics for exploration and inquiry. It could be a problem, but it could also be an area of particular interest. The issues to explore in depth were negotiated in this three-part collaboration (2) to innovate, change, and theorise practices in a collaborative effort between the participants, as well as (3) to investigate the processes at the workshops and document in-between work tasks as visual, narrative observations of children and staff.

We addressed a mutual interest in collaborative learning and transformation within the partnership. First, we aimed to support early childhood educational leaders and staff in enhancing the quality of kindergartens through exploration, with the goal of achieving pedagogical innovation and change. Second, we aimed to support researchers in finding new problems and understandings of ECEC practices and conditions for exploration and pedagogical innovation, in addition to exploring research areas and topics of common interest.

The group of researchers involved were not new to collaborating with the ECEC field and had a mixed background. Some were ECEC teachers and knew the field from various positions, including their own practices as kindergarten teachers, heads, and teacher educators and, later, through a meta-perspective on the field through research training and ECEC research. Others had a variety of disciplinary backgrounds in research and teaching at the university, and some were experts with backgrounds in other sectors. The heads who were involved were all experienced as leaders, with further education in leadership and organisational learning.

The EX-PED-LAB idea was motivated by the above-mentioned need for new knowledge on how to conduct collaborative research in partnerships. As a starting point, we based our ideas on our own previous experiences from projects that were designed and carried out in negotiation with stakeholders in the field. The concept of a *participatory agentic space*, which represents the curricular space in which children can move and act in flux with the ecological frames of institutions, was already developed in the thesis *Narrative Meaning Making in Preschool* (Ødegaard, 2007) as an attempt to conceptualise the conditions for children's participation in everyday practices. A point made here was that, even if a space is made for participation, it will be a regulated space conditioned and controlled by the structures, rules, and regulations set by authorities and further conditioned by the participants, because every form of participation involves various levels of constraints and possibilities—societal, institutional, and personal (Hedegaard, 2008). How different participants use and exploit the space for participation will influence the extent to which, and how, they can be agentic. This concept is also relevant to practices-development research.

In the context of collaboration across sectors, Edwards (2005) has developed the concept of *relational agency* to conceptualise how successful partnerships are formed and maintained. Collaboration across sectors involves tension because of the differences amongst the sectors. This is a place where different practices with different histories, knowledge, and values meet (Edwards, 2010).

Under the leadership of Elin Eriksen Ødegaard, a project initiated and funded by the Directorate for Education and Training in six regions in Norway was carried out in the county of Hordaland in 2012 in collaboration with 11 kindergartens, 150 staff members, and 4 researchers from the research group *Kindergarten as an Arena for Cultural Formation* (e.g. Kyrkjebø et al., 2013; Schei & Ødegaard, 2013). For research purposes, we later followed up on some of these kindergartens. For instance, in 2016–2017 we followed up on a narrative inquiry of the use of musical artefacts in everyday practices (Shcei & Ødegaard, 2017) and in 2020–2021 on a case study of long-time transitions and transformation into cultures of collaborative exploration of the local and global culture (Ødegaard, 2020; Ødegaard, 2021). Some of the tasks developed in this project were further negotiated, improved, and tailored to this new group of collaborators, the ECEC agency of the city of Bergen, and the researchers from the KINDknow Research Centre.

Furthermore, the EX-PED-LAB workshop methodology built on narrative inquiry (Clandinin & Connelly, 1995; Dewey, 1938; Paley, 1995) and cultural-historical perspectives, such as pedagogical experiment (Hedegaard, 2008) and

dialogism (Bakhtin, 1981). Praxeological inspirations (Kemmis et al., 2014; Oliveira-Formosinho & Formosinho, 2012), as well as knowledge inspirations from transformative learning and organisational change (e.g. Senge et al., 2000; Wals, 2010), are designated inspirations built into the methodology. These were the researchers' methodological backgrounds for entering partnership research. Also important in the construction of the model were premises of participatory design and an anchoring in the national and local frameworks on ECEC, set out by the city parliament of Bergen and the Agency of Early Childhood Education, which selected four ECEC institutions to participate in the workshops. In the further operationalisation of the workshop content, the heads of the kindergartens (called head teachers) became negotiating partners in planning the workshops and in following up on their organisations. Therefore, EX-PED-LAB was established against the background of a long-term puzzle and inquiry into understanding the drivers of transformative understanding and for achieving innovation and change in the ECEC sector, with the ultimate aim of addressing the long-term, wicked problem (Bentley & Toth, 2020) of how to best support and provide good institutional lives for children through practices-development research.

Co-creation of Knowledge

Many of the key factors affecting competencies and capabilities in the ECEC sector are social and relational. In particular, the relational aspects of the processes when people work across disciplinary boundaries appear to require more attention (Ness & Riese, 2015, p. 29). However, as Ness and Riese (2015) state, looking at Bakhtin's (1984) dialogical principle, we can see that knowledge and meaning are created in the tension between different voices, and 'meaning making occurs when different voices, different world views or perspectives get in touch with one another' (p. 30). This was illustrated in a follow-up study of a kindergarten that was working on developing and refining its practices over the years. Starting out by working with local cultures and staff when confronted with an increasingly multicultural society, and holding meetings with families that could offer more diverse resources to the kindergarten's curriculum, the staff transitioned into increasingly new activities for exploration that actualised the local culture and heritage; this has added to our understanding of how kindergarten practice conditions the cultural formation of children, going from monocultural to multicultural entities (Ødegaard, 2020, 2021).

Drawing from these insights, the design of our EX-PED-LAB project was staged as a collaborative and co-creative knowledge process based on the definition of co-creation as follows:

... a process through which two or more public and private actors attempt to solve a shared problem, challenge, or task through a constructive exchange of different kinds of knowledge, resources, competences, and ideas that enhance the production of public value in terms of visions, plans, policies, strategies, regulatory frameworks, or services, either through a continuous improvement of outputs or outcomes or through innovative step-changes that

transform the understanding of the problem or task at hand and lead to new ways of solving it. (Torfing et al., 2019, p. 802)

From the start, the view of the co-creation of knowledge was an important pillar of the project. There were several reasons for this, as mentioned; initiatives and impairments are found in political documents and in premises set out by collaborating stakeholders, all of which stem from the epistemological viewpoint of the researchers. However, claiming success in innovation and transformation through the co-creation of a knowledge approach is a tricky business. If success means being certain that a particular intervention caused change, innovation, or learning, we need to look carefully at the case level. Generalising to other settings would be difficult. Thinking with the concept of participatory agentic space, we acknowledge that a certain workshop methodology and design will always meet a complex and entangled set of conditions for the agentic participatory space given (e.g. an institutional culture, a leadership style, a participant's knowledge view, conceptualisations of research, personal attitudes, values, intellectual and creative capacity, capability, and investment of time and energy in the project). What a design- and inquiry-based project, such as EX-PED-LAB, enables us to do is to create a participatory agentic space with opportunities for the co-creation of knowledge. From learning theory, we know that being involved with a variety of voices and being confronted with different worldviews are productive for learning and development, but despite all this theoretical knowledge, it is not commonly practised or well understood (Ind & Coates, 2013).

EX-PED-LAB provides an arena for co-creative practice, which means that ideas, data, and results are elicited, presented, mirrored, responded to, negotiated, changed, and redeveloped. This arena needs to stage possibilities for productive dialogues, which can be characterised by the fact that the parties open their minds to understanding one another. In order to create and organise such a staging, we need to draw on a broad and eclectic source material rather than adopt a narrow view. The concept of co-creation has a diverse heritage from psychotherapy, management science, innovation and open innovation, design, literary theory, and creativity practice (Ind & Coates, 2013). We can also find recent relevant explorative studies with the public health domain, where co-creation is a multi-dimensional construct starting out from the very start of a research design (Darlington & Masson, 2021, Daly-Smith, et al., 2020). Based on the findings of Darlington and Masson (2021), co-creation is a voluntary-based process of bottom-up collaboration informed by values of diversity, mutual trust, openness, autonomy, freedom, respect and shared expertise, responsibility, and decision-making. This research highlights that co-creation can result in out-of-the-box, new or improved tailored health-promoting practices and projects, which address a co-defined need, for the benefit of all members of the group.

From these various strands, we can locate ideas for practice work in the workshops and in the participants' in-between tasks. Ind and Coates (2013) suggest that, from participatory design, we can learn that involving end users leads to more relevant and usable services. They state that this implies researchers' willingness to

engage with participants and incorporate their suggestions for the benefit of users and the organisation. Participatory design, such as design- and inquiry-based thinking, can involve the development of prototypes as a means of testing user reactions. We consider EX-PED-LAB, in this first year of action, as such a prototype idea being tested.

From narrative inquiry, we learn that there are interesting interconnections amongst places, people, and communities (Caine et al., 2021). This implies that new ideas we can think with and act by have been significantly shaped by our histories and by the places and social contexts we have lived in and that this complexity needs to be considered when researching practice; the aim is to understand what goes on in institutions and the conditions for acting upon the practices.

From literary theory (Bakhtin, 1981), we learn that meaning is historically co-created and always responsive. This leaves an interpretation of what is going on as a two-way process. Whilst there is authorial (e.g. organisational management) intent in creating something, meaning emerges as the ideas are used and played out by the participants. The outcome of dialogues cannot be controlled. Face-to-face (digital or real-life) interactions and organisation-led interventions will always be unpredictable, even if a common focus is agreed upon. Human interaction and organisations' cultures and conditions work in a complex flux. However, the open-source movement (Ind & Coates, 2013) posits that starting with a gift produces more generous returns. Giving something to people that creates meaning or utility generates reciprocal, responsive actions and can strengthen the sense of community. People are then willing to share their personal experiences and opinions for the joy of participation. We also learn from narrative inquiry that once stories of failure and success are shared, this triggers more stories from more participants, especially when it comes to critical event narratives, which stick in our memory because strong emotions are involved (Mertova & Webster, 2020).

From collaborative innovation, we learn that breakthroughs come from *group genius*, not *lone genius*, even if the narrative is written to idolise one specific person. The Design-Based Research Collective (2003) demonstrates this idea, as also seen in the narrative created around Mikhail Bakhtin in the Bakhtin Circle (Clark & Holquist, 1984). Since the Renaissance, innovations have been dominantly generated by groups (Johnson, 2010; Laubé & Bruneau, 2012).

From cultural psychology, psychotherapy, and neuroscience, we learn that an answer or insight is not simply out there waiting; it needs to be discovered in a co-creation process with others. The discovery of *mirror neurons* in newborn babies suggests that at this point the sensory-motor system is already set to be coordinated with other experiences (Bråten, 2009) and will continue throughout one's life. This process of shared understanding can be positioned within the concept of intersubjectivity (Bråten, 2009; Linell, 2009).

To sum up, thus far, co-creation can be a force for participation and democratisation that creates meaning for participants and stakeholders. At the same time, it is an alternative research approach that explores and exploits the skills, creativity, and capability of all participants engaged. This is called the 'postmodern pattern of sensemaking', characterised by a 'transparent, open-ended flow of social

communication built around the negotiation and renegotiation of meanings that leads to a networked, evolving social world' (Ind & Coates, 2013, p. 92). The implication for EX-PED-LAB is that co-creation is viewed as a process that provides an opportunity for ongoing interaction in which participants are willing to share experiences with others within a sphere of trust. In return, participants can generate insights and knowledge.

Workshop Methodology: Background and Components

Workshops seem to have great potential for pedagogical innovation and partnership research in the direction of strengthening exploration and knowledge-building. An increased use of workshops as a qualitative research method within different research fields has been reported (Storvang et al., 2018). The term *workshop* is used in various contexts, often with respect to an arrangement in which a group of people learn, gain new knowledge, perform creative problem-solving, brainstorm, or innovate in relation to a domain-specific issue (Borgen & Ødegaard, 2021; Ørngreen & Levinsen, 2017). Tracing the origin of the word itself, we find that the term *workshop* was used as early as 1556 with the definition of 'a small establishment where manufacturing or handicrafts are carried out' (Merriam-Webster Incorporated, 2016).

Ørngreen and Levinsen (2017) found three levels of workshop knowledge from an analysis of a literature review: workshops as a means, workshops as a practice, and workshops as a research methodology. Existing research predominantly focuses on how to conduct workshops and less on workshops as a research methodology.

Workshops as a means refers to authentic workshops aimed at domain-specific issues. These are represented in a large body of literature in which a workshop is seen as a tool for achieving a goal. Two streams of research were identified. The first was literature on how to design, orchestrate, conduct, and facilitate workshops (e.g. cookbooks, frameworks, guidelines, and instructions). The second stream reported outcomes regarding participants' new competencies, practices, knowledge, or ideas as a result of participating in authentic workshops—in-service training, design processes, workplace development, or societal development.

Workshops as a practice focuses on examining the relationships between the workshop and its form and outcomes. This literature presented authentic workshop case studies, in which two key perspectives were identified: one examining the workshop as a format and the other participants' domain-specific outcomes. Workshops as a practice were also characterised by aspects of development (e.g. the participants created work processes, designs, or other things).

Workshops as a research methodology focus on studies using the workshop format as a research methodology. Here the workshops were authentic, as they aimed to meet the participants' expectations, and they were designed to accomplish a research purpose—to produce reliable and valid data on the domain in question.

These workshop types have a set of shared features (e.g. workshops were arranged events of a limited duration, targeted at participants sharing a common

domain). Workshops promote genuine participation and typically involve a small group size in order to afford everyone personal attention and the chance to be heard. This is important because active participation and influence are expected. Both organisers and participants expect an outcome from the workshop, which could entail new insights, suggestions, or (re)designs of a product, process, or innovation. A final shared focus of these three levels of workshop knowledge is that workshops are specifically designed to fulfil a predefined, but not predictable, aim (Ørngreen & Levinsen, 2017).

Using workshops as a means for learning is not new in early childhood teacher education and staff development; they are often seen in teaching the arts and other creative means. Workshops as research blended with participatory staff development methodology are not that common; still, there are examples and traditions to learn from. These can be found in practice-developmental and practice-transformative methodologies. Some examples of these historical threads that were selected by and inspired the EX-PED-LAB group in the development of the methodology are as follows:

1. Future workshops

Future workshops (FWs) were used as an active method in the 1950s, 1960s, and 1970s, inspired by the work of Austrian futurist Robert Jungk, who developed the basic form of the workshop for the purpose of enhancing democratic municipal decision-making. The FW method was further developed as a creative technique for societal groups to address real-life problems by discussing an unfavourable status quo and dreaming about a better future (Jungk & Muellert, 1987). By exchanging ideas and engaging in shared problem-solving, groups could find ways to reach their imagined future collectively. The FW method is a democratic and student-centred method based on at least three main phases: the critique phase, in which problems are identified and structured; the fantasy phase, in which desirable future situations are envisioned; and the implementation phase, in which the most promising ideas are chosen and an action plan made (Jungk & Muellert, 1987). A follow-up phase can also be added.

All these original features were selected as inspiration for the development of the EX-PED-LAB methodology, through the inclusion of imagination and dream society perspectives as components of the workshops.

2. Praxeological and change-laboratory approaches

Praxeological education in pre-service and in-service education draws inspiration from Freire (Vandenbroeck, 2020), mainly carried out as a collaboration *with* people in context rather than *to* people (Boal, 1994; Kemmis et al., 2014; Oliveira-Formosinho & Formosinho, 2012; Paavola et al., 2004; Pascal & Bertram, 2012; Winterbottom & Mazzocco, 2014). In such a participatory approach, choice and collaborative practice with the community and staff in context are crucial. This pedagogy is grounded in real-world situations and is carried out by teachers in collaboration with the community at large, which will have a direct and passionate investment in what is occurring in the kindergarten (Pascal & Bertram, 2012).

Furthermore, it is done in the staff communities with an understanding of the domain of practice development and education as being conditional on interactions and relationships. Action and interaction drive the work in educational practices and reveal how participants can change their approaches to working with young children and their families.

Organisations are products of how their members think and interact, so they maintain both structures and cultural codes (Senge et al., 2000, p. 19). Kemmis et al. (2014) propose a practice architecture in which educational practice follows a social ontology that analyses a social phenomenon as a praxis involving change and is composed of practices. Education is seen as a complex ecology of practices and the sites where it transpires and where practices intersect and develop, and its transformation is a matter of reconfiguring practices. Practice ecologies consider the conditions under which they take place. Kemmis et al. (2014) propose analytic categories, such as sayings, doings, and relatings. Sayings, doings, and relatings shape kindergartens' practice architecture. Change and the development of pedagogical practices will involve changing this practice architecture. For participants, this will mean '[asking] critical questions of their practice and [acting] on these answers to re-form and transform practices in a cycle of critical reflection, planning, action and critique' (Kemmis et al., 2014, p. 179).

This ecological approach has inspired EX-PED-LAB to consider partner representation from a variety of stakeholders in a systemic way of thinking, and we pick up the component of the arrangement of a series of workshops with cyclic content. For the data generated, we ensure that we collect and create data on the levels of sayings, doings, and relatings.

3. Inquiry-based approaches and working with stories

According to John Dewey, inquiry is a process that begins with doubt and ends with knowledge and a set of beliefs that are so concrete that they can be acted upon, either overtly or in one's imagination (Dewey, 1938, pp. 202–8). In EX-PED-LAB, this heritage from Dewey is obvious. A driver is a continuous puzzle in which participants wonder, ask questions, explore, and seek answers in order to understand more when engaging in inquiry (Schei & Ødegaard, 2017), and Dewey adds the need to eliminate the initial doubt. Play and exploration workshops are often associated with early childhood educational approaches; however, play and exploration are also actualised in adults' collaboration in educational settings.

Experiences are best articulated and understood in narrative languages, so EX-PED-LAB uses thinking and tools from the narrative inquiry methodology (e.g. Caine et al., 2021; Clandinin, 2013; Dewey, 1910; Kurtz, 2014; Schei & Ødegaard, 2017). Narrative inquiry also problematises what counts as knowledge in research, which is considered relevant for EX-PED-LAB as a research methodology.

4. Play design for imagination and innovation

Gudiksen and Skovbjerg (2020) frame play design as a field of practice that cannot exclusively apply to a specific age or sector; rather, it can help one learn skills and build competencies to improve by acquiring a sense of detail for creating and

orchestrating prompts and triggers for play activities. Play activities can be used as vehicles for exploration and can be included in innovation processes.

Giving play a space in workshops was relevant in the EX-PED-LAB methodology in many ways, as we integrated curiosity triggers and imagination tasks and encouraged the exploration of practices for surprises and special interesting discoveries. The observations highlighted by the staff at the workshops reflected the key elements of play (humour, imagination, playfulness, disruption, and motive orientation), and by bringing children's play to the forefront of attention, the staff revealed a special ability to observe play and think with a playful mode.

5. The pedagogical experiment

Hedegaard (2008) places the pedagogical experiment within a cultural-historical tradition and its long history of using natural experiments as an intervention in everyday practice, with references to research by Vygotsky et al. (Hedegaard, 2008). The educational experiment covers elements of both paradigms of traditional experiment and action research, but according to Hedegaard there are significant differences between the respective methodologies of the educational experiment, the traditional experiment, and action research. The traditional experiment is interested in the effect of an independent variable on a dependent variable. Such studies are investigated by changing the independent variable in a predetermined way, as we can see today in quasi-experimental studies and randomised controlled trials. When it comes to the educational experiment and action research, there is a difference in the use of a theoretical premise. The pedagogical experiment is planned in relation to a theoretical system and not simply from agendas of practice.

EX-PED-LAB includes components of the pedagogical experiment tailored to local questions and motivations for entering pedagogical experiments. EX-PED-LAB follows Hedegaard's argument: theory is an important premise from the start; even if theory can be developed, it changes and is mended during the process.

These inspirations can be summed up in Fig. 5.1. The structuring components are visualised as follows:

Figure 5.1 illustrates how the acquisition of data as well as practices-development research was performed through a series of workshops. The series was based on an understanding of workshops as a transformative praxis in nine interrelated components. The structural components must not be read chronologically as they often occurred simultaneously, and some of them repeatedly; they should instead be read as a circle of fluctuating processes.

The selected components involve sharing dilemmas and disturbances of practices, as well as sharing recognition and hope, reflexivity, and critical assessment and dreams and imagination. Explorative processes should be collaborative. They also include identifying the focus for the planning of action. The research contains studies and explorations and could also include systematic experiments and testing. These processes include dialogues and the documentation of data creation/collection and knowledge acquisition. With new actions, new experiments, new sharing, and reintegration, we anticipate building competencies, capabilities, and new knowledge. As outlined in the sections above, the workshops were inspired by collaborative,



Fig. 5.1 Shared exploration and pedagogical innovation circle

dialogical, inquiry-based, and network approaches that enable shared exploration as a crucial driver of transformative processes and pedagogical innovations.

EX-PED-LAB: The First Year of the Workshop Methodology

As pointed out in the introduction, a mutual agreement was established between the city of Bergen and KINDknow. Negotiations began in 2017 in the application phase of the project. Important to both parties was the mutual effort to find ways of working in order to strengthen the sector. Participants from kindergartens were selected through a process in which the city called for head teachers to apply and participate. After a large group interview involving kindergartens that had applied, four head teachers with their kindergartens were selected. These four continued in the project throughout the first intensive year. After the first period of planning and negotiating content, we began with the first workshop, held on 1 day in January 2020. In March 2020, Norwegian society closed due to the COVID-19 pandemic. Kindergartens were shut down until the end of April 2020, and when they opened,

strict COVID-19 regulations were enforced. Despite this demanding situation, the four head teachers participated in a series of workshops. The other participants were the director of the Agency for Kindergartens, two officials, and ten researchers from KINDknow.

We formed a project leader team to carry out a more specific project focusing on the kindergarten teacher as a researcher. This team consisted of three researchers and three members of the Agency for Kindergartens, including its director. This team managed and facilitated the project at the structural level and also picked up on themes and problems derived from early project negotiation and formulated choices of action items for the first collective workshop. At each kindergarten, a project group was established. Through negotiation, three thematic areas of common interest for collaboration in practices development research were established:

- The play, exploration, and learning environment.
- Collaboration with families.
- Leadership and governance.

At the first collective workshop, more tailored tasks were set by each collaborative team for each kindergarten after the initial tasks were presented. Eliciting responses from some of the teams at in-between activities, we condensed and synthesised different responses. Further elaboration or explanations followed, as necessary. By using explorative and dialogic developed tasks, the researchers or staff did not dominate the direction of the in-depth exploration and new practices. The aim was that this would enable mutual interaction, exploration, and inquiry, which is the type of dialogue that is essential when aiming for transformative processes for change and pedagogical innovations.

A total of four explorative workshops and four in-between tasks were carried out from January 2020 to January 2021. The participants consented to participate and to be audio-recorded. The workshops were structured based on answers to the questions formulated by the staff at initial dialogue meetings and on the tailored tasks of the head teachers, the pedagogical leaders. The kindergartens also included more staff in the tasks.

To address our research questions with rich, multi-level insights into the relationship between situated work practices and institutional logics, we used an embedded single-case study design (Yin, 2009). We purposively sampled multimodal data, which included audio recordings of the group discussions at three workshops; presentations at the workshops of the in-between work by the kindergarten teachers and principals (photos, narratives, and reflections); written reflection notes on the process, provided by the kindergarten teachers and principals; and the researchers' own notes as participating researchers.

The first phase of the analysis process was conducted during and in-between the workshops as a collaborative response between the kindergartens and researchers. The participants responded, reviewed other participants' contributions, and offered feedback on and new interpretations of the material. This served to improve the quality at the kindergartens by exploring new practices. At the same time, these processes ensured that the collected data material was reviewed and further

collaboratively explored and that it pointed to an understanding of the kindergarten teacher as a co-researcher; it also provided a space for all participants to contribute to the analysis process and to succeed in pedagogical innovations.

The second phase of the analysis process was performed at the end of the workshop series. The researchers on the project leader team went through the verbatim-transcribed audio recordings, the presentations, the reflection notes, and their own notes. Based on this, they intuitively reflected together on the content of the material based on their previous experiences. These two stages of analysis contributed to the relevant data to be presented and provided a way to look at the material both internally and externally as collected and finished data material. For the purpose of this chapter, the results are presented as a summary, with a few empirical examples.

Emergent Findings: Enabling Features of and Barriers to EX-PED-LAB

The workshop design created rich opportunities for collaborative investigation through common engagement, in which questions were derived from events, activities, and projects involving staff's and children's investigation in the in-between activities. We found that a participatory agentic space was created, and it also established an institutional anchoring of the project at each kindergarten and at the research centre at the university. The co-creation of knowledge design was an important pillar of the project from the start, both as an idea and as practice.

As the participants stated their interests before being asked to participate in the project, the project team already had information on the history of projects at the participating kindergartens, as well as their competencies, capabilities, and specific initial interests in developing areas. This background information came to be important in the tailored planning of the workshops. Even if the main thematic areas were agreed upon before the workshops, these were broad themes, and at the workshop time was spent digging more deeply in search of puzzles, problems, dilemmas, and challenges to work on at the participating kindergartens.

The head teachers were highly motivated, as they had already applied and agreed to take part in the project on behalf of their respective kindergartens. Despite the COVID-19 pandemic and its challenges, the kindergarten leaders participated in the workshops and found ways to carry out the intermediate work at the kindergartens together with staff. Engagement and flexibility were also demonstrated by the project leader group and the researchers.

The joint efforts of different stakeholders in the project group to prioritise planning, presence, and follow-ups and to face challenges and find solutions together were enablers for the success of the project. For example, the researchers and the staff at one of the kindergartens shared a common interest in understanding *exploration* and finding ways to develop the practice of being explorative with children. The staff took the initiative to find suitable literature for all staff to read

and discuss and also started working systematically, writing stories from practices. The narrative approach is what both the researchers and the staff are most familiar with, and narratives of how they were explorative with the children served as reflective tools for metacommunication. They worked with a focus on formative development and bodily awareness. At the same time, some of these stories became research data.

Another enabler was the fact that the content and tasks involved imagination and creativity. All kindergartens conducted some sort of experimentation. One of the workshops also encouraged work with the dream kindergarten, a task in which the kindergartens beforehand were given the opportunity to work with the staff, the children, or their families and come up with ideas as to what a dream kindergarten could be. This was also presented as an opportunity to listen to the children's voices through drawing and to elicit their imagination of the best kindergarten experience. From this task, one of the kindergartens discovered that the children's imaginations did not involve the use of toys and materials in the expected ways. Its staff decided to conduct an experiment that removed toys and material that are traditional at kindergartens and study what happened with the opportunity to play and found that open-ended material was of particular interest to the children both inside and outside the kindergarten. This discovery was also documented through a photo and story series at another kindergarten, in which a large box was used to hold the children's interest for weeks of continued, engaged play. One of the teachers said, 'Actually, all we need is a box and some surprising stuff in it'. The researchers followed this lead of thought by arranging for more dialogue about their experiences with nurturing play and conducting a lecture on the topic of open-ended material and the opportunities for play and exploration from theoretical stances. The concept of creativity arose as a new lead to follow. The kindergartens working with valuing and experimenting with open-ended play reported engagement from parents who became involved. One of the kindergartens further developed a workshop as a makerspace there. The idea of a makerspace fuelled the theorising of children's play, exploration, curiosity, and opportunities to construct and make things. It also encouraged staff involvement in the makerspace. The experiment with an open-ended playscape and a makerspace resulted in the creation of the most popular space at the kindergarten for both children and staff to be engaged. Through this project, we could clearly identify how researchers and staff worked in processes that, over time, included observations, experiments, planning, new ideas, and theorising.

In preparation for the second round of workshops, one of the kindergartens chose to investigate the outdoor playground as an arena for play and learning. They mapped activities and the relationship between staff and teachers and presented their results at the workshops. The prepared material was made available beforehand on MS Teams, the digital platform used for sharing. One other kindergarten and two researchers were responsible for preparing feedback for the kindergarten. This resulted in a rich discussion of the meaning of certain words found to be dominant in the staff's observations and stories. A discrepancy between the most popular word used, *curiosity*, and what was found in the observations of the activities was

also revealed. At the workshop, the researchers' feedback was a theory-driven analysis of the data provided. This analysis led to further dialogues on understandings of play, impacts on kindergarten practice, and how to act in collaborative exploration with children. These observations and the stories were stored for later reuse in further, more systematic investigations of the observations as research data.

Although some of the initiatives in the project were not new to either the kindergartens or the researchers, the workshops served as new vehicles for digging deeply or refining some activities already used at the kindergartens in previous projects and attempts. An example of this was that all the kindergartens used narrative approaches in various ways. One of them was working specifically to develop its collaborative practices with the families, wanting to involve parents more in the content part of its practices and to change the way it used digital boards. It encouraged the use of dialogical board conversations instead of information boards to create a more balanced dialogue between the kindergarten staff and the families. Another example was a kindergarten that had started working with *spotting strengths* in its staff. For the duration of the project, they continued to do this, looking for competencies, special skills, and capabilities amongst the staff. The workshops enabled them to document the process and obtain feedback on their work, thus empowering the leadership strategy at that kindergarten and inspiring others. Another kindergarten used a tool provided by the research team to map all the visual material at its kindergarten and analyse the findings from an aesthetic perspective. This task led to reflexivity, new discoveries, and new practices, as the kindergarten became aware of blind spots in its exhibition tradition.

As expected, several barriers were found. Despite good intentions, everyday life at the kindergartens was not always predictable, and tensions and challenges emerged. Key personnel became sick, and one of the kindergartens also lost key staff to new employment elsewhere. Keeping track of decisions and maintaining focus were other challenges. One learning point was highlighted by one of the head teachers: 'We should've stopped more often to check our common understanding to ensure that the whole team was included'.

There were tensions in the group when it came to understanding the open project approach and the participants' role in a co-creative design. All the researchers and all the kindergartens had previous experience from collaborating with different stakeholders. However, what was new here was the shared responsibility of the three parties—the agency, the head teachers and staff, and the researchers from KINDknow.

It was more or less challenging for the participants to find a way to take responsibility for engaging in action as active participants. Whilst some were self-governed and were rich in initiatives from the beginning, some had an unclear association with the main projects, whilst still others seemed to await instructions and desire a clearer design. One point of discussion in the evaluation of the project was whether there was a relationship between the investment of time and energy in the project and its perceived success. We could see that when the kindergartens came to the workshops with prepared problems, example materials, stories and observations,

and dialogues, more engagement occurred, easily generating responses and enabling reflections and new ideas.

There was also reflection on the extent to which the project should be democratised. Some of the staff said, 'Without the researchers' examples, we would have felt helpless' and 'I'm not sure I should say this, but it felt more interesting to get feedback from the researchers than the other kindergartens'. These quotes are interesting and show the need to further develop discussions about aspects of knowledge and knowledge creation in the further development of the project. In the moment, the uncertainty of the questions 'What are we doing?' and 'What kind of project are we participating in?' resulted in a reminder by the project leader team that a model of how to conduct collaborative investigations had to be developed and that there was a need to learn from one another during the process. Whether this is an adequate answer, or a critical point that offers new possibilities for model refinements, will be explored further.

Another example illustrates the recurring challenge of uncertainty regarding the kind of project we were working on. One of the head teachers said, 'It depends on what this EX-PED-LAB group is after', and one researcher replied, 'We cannot tell you what development means for you'. During this first year, it became obvious that the participants took part in the project with a different understanding of what research is, could be, and should be. These differences were not clear-cut through the lines of expertise. Amongst the researchers, there were different kinds of approaches to what could count as research data. Amongst the staff at the kindergartens, there were different levels of project uncertainty. Whilst some kindergartens continued exploiting opportunities without worrying, others struggled more with using the opportunities that the project provided them.

The kindergarten teachers articulated the challenges more explicitly, for instance, 'The demanding part of the project is translating my knowledge and the values we're obliged to act upon according to frameworks and local plans into practice with the kids in my department'. This was also articulated by the head teachers, for instance, 'It's a challenge to translate values and knowledge into a common practice. We depend on meetings for discussing things and planning, depend on whole days for planning and doing the systematic analysis. We can agree that we've reached a stage at which we're good at reflecting on practice, but that doesn't necessarily mean we're good at acting upon that reflection'. These lines reflected the core idea of the workshop methodology of EX-PED-LAB—not to stop at reflexivity but to work on the doings, to conduct experiments and refinements, to act upon problems, and to create cultures for practices-development research.

The analytical competence of the co-researcher is diverse. One of the kindergarten teachers addressed this issue in their own words: 'Analysing the data material is difficult. I'm not sure if I have the competence to do that. Is it expected that we should use theoretical concepts in doing it? This is difficult to do in practice at the kindergarten, when the whole staff is going to create meaning out of it'. This line calls for reflection on the need to understand the implications of interdisciplinary research, and does not mean that we are all the same; on the contrary, it means that we need to understand how best to exploit the expertise of the different participants.

These self-reflexive utterances put knowledge and analytic competence on the table for discussion. What counts as knowledge? What is academic analytic competence about? A trained researcher will have the expertise to conduct scientific and conceptual analyses, but when engaging in a practices-development research project, the researchers and their competencies must fit into the new context, which can be challenging for them. In dialogue processes these analytic competencies may be restrained by the researchers themselves, if they wish to avoid lecturing, or due to uncertainty as to whether the competencies will fit into the context at hand. Furthermore, how will they be received by the staff in the moment? These tensions were found implicitly in the researchers' dialogues and explicitly in the head teachers' utterances. Consequently, the workshop methodology requires more awareness of the dialogue in the co-creation process and the development of a genre of speech and a genre of doing (Ødegaard, 2021). Here, the genre of doing is the workshop methodology, but the genre of speech—what to say, when to say it, who speaks when, to whom we address the speech, and what kind of discourse we are intertwined with—will need to be further investigated.

Summary and Takeaway Points for Further Knowledge Generation and Transformative Practices

The overall aim of EX-PED-LAB was to innovate new solutions that would enrich practice in ways that were locally anchored and sustainable, in the sense that the methodology would be of both timely and of local and international relevance. At the same time, we aimed for new knowledge about the methodology for knowledge creation processes that may eventually lead to pedagogical creativity and innovation. The laboratory idea was based on the recognition of different types of knowledge (Caine et al., 2021; Ertsås & Irgens, 2012; Fler, 2013) and on the belief that complementary expertise would be negotiated and developed within collaborating teams (Silvius et al., 2012). One of the underpinning features of EX-PED-LAB was a valuing of ECEC by the existing leadership (city authorities) and the selected kindergartens, as well as the fact that the research ideas were of common interest, developed through a series of dialogue meetings with the research team. Anchored in systemic, dialogic (e.g. Clark & Holquist, 1984, Kemmis, et al., 2014), and pedagogical innovation (OECD, 2018) perspectives, our idea was that the participants would enrich the project through their various forms of expertise.

We found a multitude of indicators that the workshops were a driver of engagement and involvement in practices-development research, which is consistent with previous research (Ødegaard, 2021). By establishing an arena for increased systematic observations, sharing, collective reflection, planning, and acting for change, the project provided participants with the opportunity to contribute to real teamwork across levels and institutions, which led to the emergence of new pedagogical practices. The four participating kindergartens chose different ways of working, and the

researchers tailored their research approaches to the opportunities provided by the kindergartens. To different extents, all kindergartens agreed to create pedagogical cultures for exploration that were adapted to their starting point. We also found that increased awareness of the use of documentation as a basis for professional reflection contributes to emergent pedagogical innovation. The link between the two might be analytical competence; analytic ability might be stronger in intersectional collaboration, as seen at the workshops during feedback sessions and at further follow-ups when the voices of researchers, staff, and city representatives were heard.

Collaborative explorative processes and knowledge-creating practices in partnership research between researchers and practitioners and teachers challenge traditional research and practice perceptions, the dichotomy of theory and practice, and traditional research roles. This study shows that such a challenge is demanding and that it entails breaking common perceptions about teachers (and children) as research objects, as also found in previous research (Eriksson, 2018). In the case of EX-PED-LAB, the workshop methodology encouraged novel ideas, the refinement of ongoing ideas that made sense for the participants, collective reflection, and the development of change strategies.

We conclude that, for both the researchers and the staff at the kindergartens, the workshop model made it possible to explore professional processes through practices-development research. Furthermore, an important effect of positioning kindergarten teachers as co-researchers seems to be the influence of an exploratory mindset at the workshops regarding the staff's exploratory behaviour with the children.

The workshops provided communicative spaces (Rönnerman et al., 2015) in which talking, sharing experiences, and reflecting together in groups with kindergarten teachers beyond their own institution and researchers promoted the development of one's own kindergarten. We also identified barriers. It was challenging for the participants to juggle moving practices with a focus on practices-development research topics. We also had to consider that the timing of the project coincided with the first year of the pandemic; however, although this situation led to additional challenges, the crisis also pushed some of the changes. Even if there were interesting barriers and tensions to be further investigated and responded to, the recognition of different types of knowledge was essential to achieving equivalence in the collaborative exploration and investigation.

The research leader group had the important position of facilitating and administering practicality in the project. This is important in all projects, as the facilitation role grounds the project and holds it together. It is important to have people who take on this role, and the systemic leadership and interdisciplinarity in this team and amongst the participants, in general, proved to be crucial for the continuation of the collaboration as the global COVID-19 pandemic shook the grounds of practice in the ECEC sector. Systemic leadership and collective intersectoral collaboration seemed essential for succeeding in continuing to work on practices-development research under the new crisis conditions.

Governance of the ECEC sector was seen as an integral part of understanding kindergartens as being located in ecologies of practice (Kemmis et al., 2014).

Therefore, it seems that participatory involvement at the owner level, as realised in this project, was a crucial enabler of continuous organisational learning. We saw that some participants desired an immediate, clear understanding of everyone's roles and expectations and of what was required of them in terms of data contribution. Whilst this is understandable, we believe that a co-creative knowledge process cannot give a one-size-fits-all formula; rather, the collaboration process needs to be negotiated, tailored, and renegotiated and retailored. The understanding of kindergarten teachers as co-researchers involves introducing a new research role in which the participants' responsibility somehow shifts in ways that not only affect the teachers but also change the researchers' roles. The authorities' participation, as carried out in this project, requires a new understanding and the practice of a new role.

Drawing on the findings regarding the project's enablers and tensions, we end this chapter by providing five takeaway points for the further development of the EX-PED-LAB design, with the aim of achieving stronger systemic, vertical, and horizontal collaboration:

A design for the negotiation of responsibilities. For the researchers, the workshop methodology for partner research meant abandoning the idea of being solely a lecturer or an expert. The kindergartens, on the other hand, were not told what to do or how to perform a task. The workshop methodology implied that we defined, explored, analysed, and made choices through dialogues; decisions were made either in the project group, at the workshops, or at the kindergartens. Whilst decisions concerning the kindergartens were made by the head teachers (managers), those concerning the study were made by the researchers. This division of labour was perceived to be reasonable and necessary for following the mandates of the various positions, but this was not necessarily clear. We entered a muddy landscape, where we needed to negotiate and reason about whose responsibility a certain issue was. The city was the project owner, but the ideas and initiatives were strongly anchored in the KINDknow project and the established agreement. The centre itself was owned by the university, but strong interest and engagement in the centre were found in the city. This leaves us with the need to further sort out and understand the issues that were up for negotiation.

A design for a strong and inclusive leadership was experienced as an essential component of succeeding in developing practices. At kindergartens, leadership is to be carried out by both the head teachers and the pedagogical leaders in their work with children, parents, and colleagues. In EX-PED-LAB, both head teachers and pedagogical leaders participated in the workshops, and representatives from the municipal government as well as researchers from KINDknow also took part. The project management group consisted of two individuals from the city management and two from KINDknow. Different stakeholders in the project leader group could be crucial for enhancing leadership energy and partnership commitment and for securing understanding, implementation, and accomplishment. The project team was formed based on the value of differences in project teams, to ensure that the project was managed based on both vision and experiments and

that it was practical and feasible (Silvius et al., 2012). For the further development of such a project, one could consider representatives from more stakeholders in the management leader group; it could be considered, for instance, whether a head teacher and a pedagogical leader should be added to management. On the one hand, their voices could increase the strong ownership and leadership in the planning of the workshop sessions and tasks; on the other hand, their voices could lead to a discussion of how valuable working hours can best be spent.

A design for digital agility in the ECE sector. Digital learning came as an added value to the project, as it was implemented during COVID-19 restrictions in 2020 and 2021. The pandemic led to delays; it was a challenging time for all participants, but had a surprisingly small effect on the project management, as we carried on and found new ways to act in collaboration. Several planned physical workshops were replaced with digital collections. This gave both KINDknow and the kindergartens realistic and positive experiences with the digital organisation of professional development work. Nevertheless, to be able to continue working with strengthened digital agility, the sector must develop a common platform and receive support to learn how to use it, as needed. It is also necessary for kindergartens to have a stable and reliable Internet connection.

A design for multiple knowledge forms. A central learning point is that we need to more clearly address what counts as knowledge and what counts as analysis in this context of practices-development research. To enable practice-developmental processes, we discovered a dilemma regarding how to use expertise. Should we consider toning down the research expertise of conceptual knowledge as the dominant view of knowledge and analysis? As explorers and pedagogical innovators, we need to value, think about, and act upon varied expertise. Whether you are trained as a researcher and academic or as a professional teacher, you will have life experiences, and all staff members have life experiences and unique access to the practices they participate in. To a certain degree, everyone has conceptual knowledge; but when it comes to scientific concepts, the academically trained person will likely have developed scholarly knowledge of concepts and theories. When it comes to reflecting and acting upon life experiences and everyday practices, these experiences could be rich, and the wisdom associated with this kind of knowledge could also be more or less developed in individuals; this does not necessarily come with degrees and education. The value of the knowledge and wisdom must be articulated in such research approaches and is often best expressed in a narrative language. But at the same time, one should be aware of the risk of misinterpreting common-sense knowledge, old habits, and sayings as wisdom. Judgement based on gut feelings, perceptions, and intuition—whether it is called tacit knowledge, embodied knowledge, or narrative knowledge—has received attention in the philosophy of knowledge of many philosophers in history. Narrative knowledge could serve the purpose of making visible certain points, insights, and connections, whereas empirical knowledge makes connections based on factual knowledge visible. We will need conceptual (theoretical) knowledge in practices-development research for the purpose of

going beyond a common-sense analysis. Theoretical knowledge can be driven collectively and should be collaborative if it is to be transformative (Fleer, 2013).

A *Design for Personal Engagement and Stronger Ambitions for Pedagogical Innovations*. One central enabler of success found in this study was engagement and commitment; when a crisis, such as the pandemic, occurred, strong engagement created a willingness to continue the project and find new solutions. At the same time, we saw that the cultures at the kindergartens were characterised by *small* wishes and demands. Even though academic, material, and economic resources were available in the project, and many efforts were made in the process to encourage more visionary plans and plans that made use of available resources, the goals were easy to achieve. Although the pandemic strained the process, which might explain why the changes were minor, it is interesting to further explore whether this is a cultural trait of kindergartens. For further development, we will work towards an even higher awareness of play, imagination, and exploration as workshop activities to determine whether this could enhance more ideas and higher ambitions for development and transformation. Researchers, authorities, and practitioners all need to adjust their mindsets in order to solve problems creatively.

References

- Alvestad, M., Gjems, L., Myrvang, E., Berger Storli, J., Espedal Tungland, I. B., Lønning Velde, K., & Bjørnstad, E. (2019). *Kvalitet i barnehagen* (Report no. 85). Universitetet i Stavanger.
- Archer, M. S. (2012). *The reflexive imperative in late modernity*. Cambridge University Press.
- Bakhtin, M. M. (1981). *The Dialogic Imagination*. University of Texas Press.
- Bakhtin, M. M. (1984). *Problems of Dostoevsky's poetics*. University of Minnesota Press.
- Bentley, J., & Toth, M. (2020). *Exploring wicked problems – What they are and why they are important*. ArchWay Publishing.
- Braten. (2009). *The intersubjective mirror in infant learning and evolution of speech*. John Benjamins. <https://doi.org/10.1075/aicr.76>
- Boal, A. (1994). *The rainbow of desire*. Routledge.
- Borgen, J. S., & Ødegaard, E. E. (2021). Global paradoxes and provocations in education: Exploring sustainable futures for children and youth. In E. E. Ødegaard & J. S. Borgen (Eds.), *Childhood cultures in transformation – 30 years with UNCRC*. Brill-Sense Publication/Brill open.
- Bærheim, A., Ødegaard, E. E., & Ness, I. J. (2022). *Team reflexivity and the shared mind in inter-professional learning*. Policy Futures in Education.
- Caine, V., Clandinin, J. D., & Lessard, S. (2021). *Narrative inquiry – Philosophical roots*. Bloomsbury.
- Clandinin, D. J. (2013). *Engaging in narrative inquiry*. Left Coast Press.
- Clandinin, D. J., & Connelly, F. M. (1995). *Teachers' professional knowledge landscapes*. Teachers College Press.
- Clarck, K., & Holquist, M. (1984). *Mikhail Bakhtin*. Harvard University Press.
- Daly-Smith, Quarmby, T., Archbold, V. S. J., Corrigan, N., Wilson, D., Resaland, G. K., Bartholomew, J. B., Singh, A., Tjomsland, H. E., Sherar, L. B., Chalkley, A., Routen, A. C., Shickle, D., Bingham, D. D., Barber, S. E., van Sluijs, E., Fairclough, S. J., & McKenna, J. (2020). Using a multi-stakeholder experience-based design process to co-develop the

- Creating Active Schools Framework. *The International Journal of Behavioral Nutrition and Physical Activity*, 17(1), 13–13. <https://doi.org/10.1186/s12966-020-0917-z>
- Darlington, E., & Masson, J. (2021). What does co-creation mean? An attempt at definition informed by the perspectives of school health promoters in France. *Health Education Journal*, 80(6), 746–758. <https://doi.org/10.1177/00178969211013570>
- Design-Based Research Collective. (2003). An emerging paradigm for educational inquiry. *Educational Researcher*, 32(1), 5–8. <https://doi.org/10.3102/0013189X032001005>
- Dewey, J. (1910). *How we think: A restatement of the relation of reflective thinking to the educative process*. D.C. Heath & Co Publishers.
- Dewey, J. (1938). *Logic: The theory of inquiry*. Holt.
- Edwards, A. (2005). Relational agency: Learning to be a resourceful practitioner. *International Journal of Educational Research*, 43(3), 168–182.
- Edwards, A. (2010). *Being an expert practitioner: The relational turn in expertise*. Springer.
- Ertsås, T. I., & Irgens, E. J. (2012). Teoriens betydning for profesjonell yrkesutøvelse. In M. B. Postholm (Ed.), *Læreres læring og ledelse av profesjonsutvikling* (pp. 195–215). Tapir.
- Eriksson, I. (2018). Lärares medverkan i praktisknära forskning: Förutsättningar och hinder. *Utbildning & Lärande*, 12(1), 27–40.
- Fleer, M. (2013). Attunement of knowledge forms: The relational agency of researchers, policy writers, and early childhood educators. In J. Duncan & L. Conner (Eds.), *Research partnerships in early childhood education* (pp. 27–47). Palgrave Macmillan.
- Gudiksen, S., & Skovbjerg, H. M. (2020). *Framing play design a hands-on guide for designers, learners and innovators*. BIS Publisher.
- Hedegaard, M. (2008). The educational experiment. In M. Hedegaard & M. Fleer (Eds.), *Studying children: A cultural historical perspective* (pp. 181–201). Open University Press.
- Ind, N., & Coates, N. (2013). The meaning of co-creation. *European Business Review*, 25(1), 86–95. <https://doi.org/10.1108/09555341311287754>
- Johnson, S. (2010). *Where good ideas come from: The natural history of innovation*. Allen Lane.
- Jungk, R., & Muellert, N. (1987). *Future workshops. How to create desirable futures*. Institute for Social Inventions.
- Kemmis, S., Wilkerson, J., Edwards-Groves, C., Hardy, I., Grootenboer, P., & Bristol, L. (2014). *Changing practices, changing education*. Springer.
- Kurtz, C. F. (2014). *Working with stories in your community or organization: Participatory narrative inquiry*. Kurtz-Fernhout Publishing.
- Kyrkjebø, T., Haukaas Strøm, K., Solvang, K., & Eriksen Ødegaard, E. (2013). “Vi er jobbemenn vi” – om å oppdage små barns meningsskaping. In Artikkelsamling Barnehagen som lærings- og dannelsesarena. *Prosjektrapport fra Troms og Hordaland* (pp. 178–185). Utdanningsdirektoratet.
- Laubé, S., & Bruneau, O. (2012). Inquiry based science teaching and history of science. In P. Heering, Frank, & Timme (Eds.), *Innovative methods for science education: History of science, ICT and inquiry based science teaching* (pp. 13–29). ProQuest Ebook Central. <https://ebookcentral.proquest.com/lib/hogskbergen-ebooks/detail.action?docID=3033491>
- Linell, P. (2009). *Rethinking language, mind, and world dialogically: Interactional and contextual theories of human sense-making* (Advances in cultural psychology, Constructing human development). Information Age Publ.
- Merriam-Webster Incorporated. (2016). *Workshop*. In Merriam-Webster dictionary and thesaurus. Merriam-Webster Incorporated. <http://www.merriamwebster.com/dictionary/workshop>
- Mertova, P., & Webster, L. (2020). *Using narrative inquiry as a research method* (2nd ed.). Routledge.
- Ness, I. J., & Riese, H. (2015). Openness, curiosity and respect: Underlying conditions for developing innovative knowledge and ideas between disciplines. *Learning, Culture and Social Interaction*, 6, 29–39. <https://doi.org/10.1016/j.lcsi.2015.03.001>
- Norwegian Directorate for Education and Training. (2018). *Regional ordning med kompetanseutvikling i barnehagen*. The Norwegian Directorate for Education and Training.

- Ødegaard. (2007). *Meningsskaping i barnehagen: innhold og bruk av barns og voksnes samtalefortellinger [Narrative Meaning-making in Preschool]* (Vol. 255). Acta Universitatis Gothoburgensis.
- Ødegaard, E. E. (2020). Dialogical engagement and the co-creation of cultures of exploration. In M. Hedegaard & E. E. Ødegaard (Eds.), *Exploration and Cultural Formation* (pp. 83–104). Springer.
- Ødegaard, E. E. (2021). A pedagogy of collaborative exploration – A case study of the transition from a monocultural entity in national celebration rituals to a multilayered informed pedagogical practice. In M. Fleer, M. Hedegaard, E. E. Ødegaard, & H. V. Sørensen (Eds.), *Qualitative studies of exploration in childhood transitions: Cultures of play and learning* (pp. 41–67). Bloomsbury.
- Oliviera-Formosinho, J., & Formosinho, J. (2012). *Pedagogy-in participation: Childhood association educational perspective*. Porto Editora.
- Organisation for Economic Co-operation and Development. (2012). *Starting strong III: A quality toolbox for ECEC*. OECD.
- Organisation for Economic Co-operation and Development. (2018). What does innovation in pedagogy look like? *Teaching in Focus*, 21. <https://doi.org/10.1787/cca19081-en>
- Ørngreen, R., & Levinsen, K. T. (2017). Workshops as a research methodology. *Electronic Journal of E-Learning*, 15(1), 70–81.
- Paley, V. G. (1995). *Kwanza and me – A teacher's story*. Harvard University Press.
- Paavola, S., Lipponen, L., & Hakkarainen, K. (2004). Models of Innovative Knowledge Communities, and Three Metaphors of Learning. *Review of Educational Research*, 74, 557–576. <https://doi.org/10.3102/00346543074004557>
- Pascal, C., & Bertram, T. (2012). Praxis, ethics and power: Developing praxeology as a participatory paradigm for early childhood research. *European Early Childhood Education Research Journal*, 20(4), 477–492.
- Pestoff, V. (2019). *Co-production and public service management: Citizenship, governance and public service management*. Routledge.
- Research Council of Norway. (2018). *Evaluation of Norwegian education research. Report from the international expert committee. Final Report*. <https://www.forskningsradet.no/om-forskningsradet/publikasjoner/2018/evaluation-of-norwegian-education-research/>
- Rønnerman, K., Edwards-Groves, C., & Grootenboer, P. (2015). Opening up communicative spaces for discussion 'quality practices' in early childhood education through middle leadership. *Nordic Journal of Studies in Educational Policy*, 3. <https://doi.org/10.3402/nstep.v1.30098>
- Schei, T. B., & Ødegaard, E. E. (2013). "Se hva som skjer...". Veier til refleksjon praksis i barnehagen. In *Artikkelsamling Barnehagen som lærings- og dannelsesarena. Prosjektrapport fra Troms og Hordaland* (pp. 122–136). Utdanningsdirektoratet.
- Schei, T. B., & Ødegaard, E. E. (2017). Stories of style - Exploring teachers' self-staging with musical artefacts. In S. Garvis & N. Pramling (Eds.), *Exploring lived experiences: Narratives and early childhood* (pp. 59–69). Routledge.
- Senge, P. M., Lucas, T., Cambron-McCabe, N. H., Smith, B., Dutton, J., & Kleiner, A. (2000). Schools that learn. In *A fifth discipline fieldbook for educators, parents, and everyone who cares about education*. Nicholas Brealy Publishing.
- Silvius, G., Schipper, R., & Planko, J. (2012). *Sustainability in project management*. Routledge.
- Sivertsen, H., Ljunggren, B., Janninger, L., & Lorentzen, R. (2020). *Følgeevaluering av Kompetanse for fremtidens barnehage*. Delrapport 5. Trøndelag Forskning & Utvikling.
- Storvang, P., Mortensen, B., & Clarke, A. H. (2018). Using workshops in business research: A framework to diagnose, plan, facilitate and analyze workshops. In P. Freytag & L. Young (Eds.), *Collaborative research design. Working with business for meaningful findings* (pp. 155–174). Springer.

- Torring, J., Sørensen, E., & Røiseland, A. (2019). Transforming the public sector into an arena for co-creation: Barriers, drivers, benefits, and ways forward. *Administration & Society*, *51*, 795–996.
- Urban, M., Vandenbroeck, M., Van Laere, K., Lazzari, A., & Peeters, J. (2012). Towards competent systems in early childhood education and care. Implications for policy and practice. *European Journal of Education*, *47*(4), 508–526.
- Vandenbroeck, M. (2020). *Revisiting Paulo Freire's Pedagogy of the Oppressed* (Contesting early childhood). Taylor and Francis.
- Wagner, J. (1997). The unavoidable intervention of educational research: A framework for reconsidering researcher-practitioner cooperation. *Educational Researcher*, *26*(7), 13–22. <https://www.jstor.org/stable/1177125>
- Wals, A. E. J. (2010). Mirroring, Gestaltswitching and transformative social learning: Stepping stones for developing sustainability competence. *International Journal of Sustainability in Higher Education*, *11*(4), 380–390. <https://doi.org/10.1108/14676371011077595>
- Winterbottom, C., & Mazzocco, P. (2014). Reconstructing teacher education: A praxeological approach to pre-service teacher education. *European Early Childhood Education Research Journal*, *11*(4), 380–390. <https://doi.org/10.1080/1350293X.2014.975940>
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Sage.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 6

Opening Up New Spaces for Action: Challenges of Participatory Action Research for Preschool Practice Transformation in an Introductory Unit for Immigrant Children



Annika Åkerblom

Abstract The aim of this chapter is to reflect on and problematise some of the collective processes that emerged in a 3-year participatory project. The project, situated in a linguistically and culturally diverse neighbourhood of a major Swedish city, was carried out between 2017 and 2019. The overall aim was to, in collaboration with participants, explore the conditions for early childhood education in a migrating world by identifying the challenges facing preschool institutions. An additional aim was to develop preschool practice through reflection and action. The project started out in an introductory unit for immigrant children aged 3–5 years who spoke little or no Swedish upon entering the unit; then, as the project went on, the whole preschool was gradually included in actions carried out in collaboration. Some of the spaces for action that opened up for the children, educators, and preschool managers are addressed in the chapter. Challenges involved, among other things, differences in the possibility to take part in action research processes among families involved in asylum processes and what space for action the preschool educators were actually afforded in the project.

Keywords Preschool development · Multilingualism · Conditions · Challenges

A. Åkerblom (✉)
University of Gothenburg, Gothenburg, Sweden
e-mail: annika.akerblom@gu.se

© The Author(s) 2023
C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_6

Introduction

The starting point for this chapter is a participatory preschool practice development project carried out between January 2017 and December 2019. The project was funded by the Swedish Institute for Educational Research¹ and took place in a linguistically heterogeneous neighbourhood of a major Swedish city. The overall aim of the project was to, in collaboration with the participants, explore conditions for early childhood education (ECEC) in a migrating world by identifying the challenges facing this particular preschool institution. The unit where the project was initiated had been established already in the 1990s as part of a process of supporting and promoting the integration of children who had arrived in Sweden with their families as refugees. Still today, the introductory unit accepts children aged 3–5 years who do not speak Swedish, who are expected to move on to regular preschool groups after a year. At the time of writing, the separation of children in order to provide extra support is not common in preschools in Sweden; however, this has been a major purpose of the unit since its start. Over the course of the project, the other two units (regular preschool groups) of the preschool came to also be included in the participatory actions.

Hypothetically, preschool education can provide children with opportunities for learning, language development, and participation. But at the same time, these opportunities are contrasted with a number of challenges when it comes to achieving the goals of the preschool curriculum (National Agency for Education, 2018), including ‘education should be of equivalent value regardless of where in Sweden it is provided’ (p. 6). Such challenges are connected to widening social differences and cultural and linguistic diversity, particularly in metropolitan cities. In some of the neighbourhoods in these cities, early childhood education faces serious problems when it comes to fulfilling the compensatory mission and principles of social, cultural, and linguistic diversity and equality. Moreover, at the same time, preschools in these neighbourhoods have the lowest rate of educated preschool teachers (Delblanc et al., 2021), a factor that also contributes to the lack of opportunities to provide a good education for children in such settings.

Global phenomena such as transience, migration processes, and linguistic diversity characterise contemporary societies, which has implications for societal institutions like ECE. Because of this, Swedish preschool can be said to be in a time of change; but what does that mean in regard to the conditions for preschools and preschool education for children today? Where do the opportunities lie, and what are the difficulties? These were our initial questions when we, a group of four researchers, met with educators, preschool managers, children, and their parents in a preschool unit situated in a culturally heterogeneous neighbourhood in one of Sweden’s major cities. Two of us had contacted the preschool manager after reading a preschool teacher student’s essay based on fieldwork in the unit and finding the challenges of this particular setting to be interesting to investigate further. The idea

¹Skolfi, 2016/147.

was to explore these challenges and opportunities and start a development process at the preschool, and not least to work in collaboration with educators, children, and their parents in this enterprise. The preschool manager at the time, who was also one of the initiators of the unit in question, was excited for the opportunity to initiate a project and invited us to conduct the participatory preschool practice development project there.

In this chapter, I will discuss the project with a focus on the process of participatory action research, and more specifically the possibilities for different actors to participate in these processes.

Participatory Action Research

As argued above, the opportunities to participate and co-construct knowledge were important for our project; this was why we chose a participatory approach. Moreover, one of the goals of participatory action research is to shift away from the binary of researcher/researched and co-construct knowledge in collaboration (Hawkins, 2015). Research from a participatory perspective is seen as a collaborative action carried out with and by participants, and an important aim is to empower and enable all participants in a project (Hawkins, 2015). The idea, following Kemmis et al. (2014), is that participants in a ‘community of practice’ encounter one another in intersubjective spaces² through dialogue, and this was why the research was carried out on-site, during the unit’s daily work. Nevertheless, participatory action research is not an easy undertaking for any participant, and it is often referred to as both messy and complex (Hawkins, 2015). Even though we were aware of this and anticipated some tensions, we did not fully understand what it would mean to work in collaboration, and above all, that participants may have completely different expectations about the outcomes of the research and very different preconditions for being active participants in the research process.

The research implementation followed a typical action research cycle, which includes planning, action, observation, and reflection (McNiff, 2002). The identified strengths and challenges, leading to action, were viewed from different perspectives, and group discussions were conducted, involving researchers and participants of different kinds (e.g. educators, leaders, parents, and children). The process was ongoing and iterative, and followed a timeline over the 3 years: The first phase (Year 1) involved exploring and identifying strengths and challenges as well as planning activities. In the second year, a number of actions were carried out, and in the third and final phase, the actions were evaluated and followed up, including plans for future development (Fig. 6.1).

²From this perspective, *space* should be interpreted metaphorically, referring to what makes intersubjectivity possible.



Fig. 6.1 Action research cycle

The purpose of the reflexive dialogues was to reflect on the daily practice in the unit, but also on the words used to describe it. We were especially interested in exploring different meanings that the same expression may take on in connection with the different practices the participants were involved in. All the dialogues were subsequently recorded and transcribed, which made it possible to go back and analyse the material. The dialogues occurred once a month for 2 years, and during this time, based on action research characteristics (Kidd & Kral, 2005; Braye & McDonnell, 2013), the researchers and educators together explored the challenges and possible actions in a dialogic space in which all participants could feel free to express their points of view. The ambition was to facilitate knowledge and change through shared exploration and analysis, rather than the researchers simply telling the educators what to do. Nevertheless, the dialogues were also characterised by some tension and frustration, from both parties. One such field of tension was the relatively open aim of the research and the different expectations regarding what the study would lead to for those involved. This meant that the process of reaching a common understanding of the strengths and challenges of the pedagogical practice and plan activities was time-consuming, and after some time the staff expressed frustration and asked why ‘nothing’s happening’ and why we were just ‘talking and talking’. Another challenge concerned the possibilities to take an active part in the project. Originally, the idea was to work in collaboration with staff, children, managers, and parents, first in homogenous groups and later creating transversal groups for a diversity of perspectives. This idea was exerted to some extent in one of the actions, involving the development of the preschool’s outdoor environment, but for

several reasons it was not possible to apply the approach in most of the project's actions. I will discuss these reasons later in the chapter.

Initiating a Transformation of Practices

As the transformation of preschool practice was one of the purposes of the project, the concept of 'practice' was used in order to find a way to explore and discuss with the educators what was going on at the site. In line with ideas of Mahon et al. (2017) concerning the notion that transformation of educational practices must occur at the local sites (as opposed to being ordered from above), we stressed the importance of carrying out the transformation of practice in close collaboration with the participants and on-site. According to Schatzki (2005), an easy way to delimit a practice is to simply ask people who are involved in something what they are doing. Their answer to this question is the specific practice they are involved in. In our case, the answers could sound like 'we're involved in circle time', 'we're playing in the sand pit', 'we're having lunch', or 'we're planning next week's activities', and so on, depending on *who was asked*. An interesting implication here is that different participants may perceive the same activity as different practices; so when a practice is delimited, there can be different perspectives on it. A number of practices were developed, such as *leading practice* (Harju, 2022), *outdoor practice* (Nordén, 2021), and several *pedagogical practices* (Andersson, 2021; Åkerblom & Salimi-Amlashi, 2021) of the preschool unit. Practices can be seen as being framed by the 'sayings' (what it is possible to say within the practice), 'doings' (what activities are possible), and 'relatings' (how those who are part of the practice relate to each other) going on at a site (Mahon et al., 2017). It could be argued that a distinction between 'sayings' and 'doings' is difficult to make, as sayings can also be perceived as activity. However, in this case the distinction is made for analytical reasons, whereby 'sayings' are connected to the use of language – the specific verbal expressions that are used and what they mean to the participants – while 'doings' refer to other activities and actions. The transformation of practices consequently involves a change in sayings (the verbal expressions used), doings, and relatings, so the analytical focus was accordingly aimed at identifying aspects of the practices in these terms and raising awareness among the participants about how their practices were framed.

A number of actions were subsequently planned, carried out, and evaluated over the project's 3 years. However, one challenge that stood out and was much discussed among the adult participants involved the pedagogical efforts needed to reinforce the children's language development. Thus, the focus in this chapter will be on the *process of participatory action research* connected to the *practice of supporting language development* in the introductory unit, and the possibilities for different actors to *participate in processes of sharing knowledge, transforming conditions to shape practice* (Fig. 6.2).

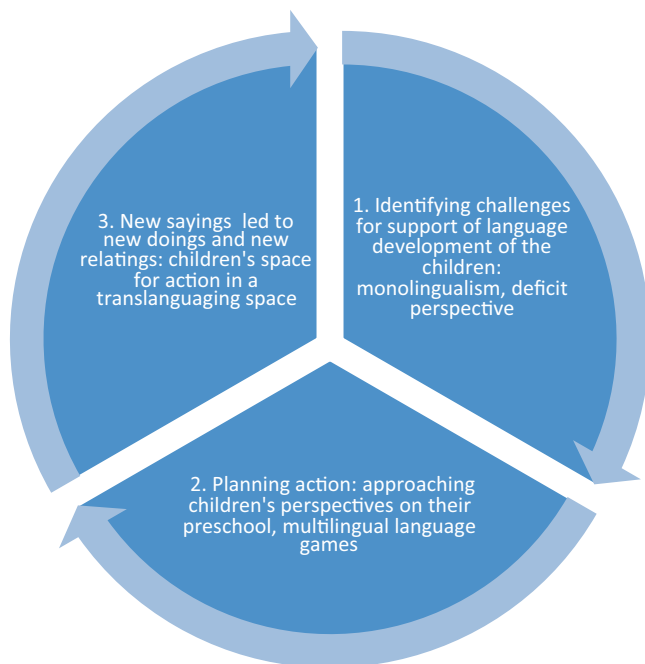


Fig. 6.2 Process of language practice development

Transformation of the Language-Development Practice

One of the objectives expressed by the preschool management was that they wanted the research to involve an examination of the pedagogical practice of supporting language learning in Swedish as well as work with trauma awareness in the tradition of the introductory unit where the project was initiated. In the quotation below, one of the managers reasons about the unit and her expectations regarding the research:

(In the) beginning of this unit, many years ago, they wanted a preschool unit where the children would feel safe and be immersed in the Swedish language by the staff/.../ who also dared to deal with the traumas they had brought with them/.../and this has followed the unit the whole time/.../And I have a wish that this research will show the result that this is a good concept...is it like this we should go on working? Is it good to mix children who don't know any Swedish at all in one unit? What do they do to teach them Swedish? Or should the children go directly into other units to mix with the Swedish children?

Moreover, in the preschool administration of the preschool where the introductory unit was situated, there was an unclear picture of the unit's specific aims, and when the project began, the management felt that they needed to review both the internal and external structures and transform the pedagogical practices, as the challenges had changed since the unit was initiated. These concerns, of course, had consequences for the design of the project: in one way favourable to the development approach since the preschool management agreed that something had to be done,

but at the same time challenging, as different actors had different ideas about what the transformation would include and what would happen to the unit.

The participating educators had been employed at the unit between 6 and 15 years and had all originally applied for positions there because of its focus on the integration of newly arrived children and families. Three of the educators themselves had experience of migration, arriving in Sweden as refugees during different periods. The educators agreed to work in a participatory way to explore the strengths and challenges of their daily pedagogical work (even though, in retrospect, they were likely not fully aware of what the participatory approach would mean to them). They could themselves see a number of challenges in connection to the perceived lack of clarity regarding the unit's purpose but at the same time were afraid to express their concerns as this could mean that the unit, if it did not serve its purpose, would be closed down. One of the challenges expressed by the educators was that, although they believed they were providing a good educational environment for the children, they also perceived the unit as being isolated in relation to the surrounding organisational, juridical, and economic structures, which they found to be inflexible compared to their needs.

Involving the Educators in Transforming the Practice of Language Development

The aim of the reflexive dialogues carried out between the staff members and two of the researchers was to reflect on the daily practice within the unit and on the words used to describe it. Kemmis and McTaggart (2005) claim that *communicative spaces* are opened by reflecting together on practices' conduct, character, and consequences as well as, with a focus on language use and expressions, reflecting on differences and ambiguities of the meanings of expressions used to describe the practices.

When the practice of language development support in the preschool unit was reflected on, it became clear that the fact that none of the children knew Swedish was, from the outside, considered a significant challenge for the educators and the children. The example below comes from one of the early discussions with some representatives of the administration of the preschool area where the unit was situated. Here, the participants were asked to express the aim of the work done there:

/It's difficult/...because language is always an obstacle. If the children can't make themselves understood through language, it isn't always easy before they find other ways.

Another challenge (identified from the analysis of the 'sayings' connected to this practice) was the discourse around the migrant children as 'lacking the language' and being seen from a deficit perspective (i.e. with a focus on what they lack instead of their assets) regarding their language development. The following quotation from one of the participants in the discussion with the preschool administration captures the view of the children in the introductory unit:

Those children have a ... many of them have really great needs. /.../ We have a special needs teacher attached to the unit, which is necessary considering the children who are there ... and that's unique, one might say – that there are specially trained staff who work a lot and intensively on language, who are used to dealing with children who don't know Swedish at all.

The implicit view of the children as lacking security and language was closely connected to the unit's original purpose and why it had been organised as it had. Although the ideas behind the unit might have been relevant at the time it was founded, it was challenging for us as researchers (and, as we would later see, for the educators as well) to accept the premises, especially in regard to the role of the majority language. We were afraid that this position would make it difficult to meet with the others, since the idea behind the participatory design was to find intersubjectivity and respect the knowledge of other participants. However, during the dialogues the educators also expressed that they saw their practice as positioned between the different ideas of the unit's aim. On the one hand, they were primarily expected to promote and support the Swedish language along unspoken monolingual norms; on the other, an idea expressed in the policy documents was that they were to support linguistic diversity as an asset for both themselves and the children. This notion is connected to a language norm based on multilingualism. The challenges of being in this position of perceived conflicting demands and ideals were often discussed in the dialogues concerning, among other things, the educators' own backgrounds as bilingual and having at some point been new to the majority language. They also identified that, although multilingualism was considered an asset on the policy level, it was very unclear how they were expected to support the children's various mother tongues besides teaching them Swedish. And although the educators strove to use a multilingual approach in their activities, their language practices were still based mainly on the assumed superior role of the majority language (Swedish), with the children's mother tongues seen merely as providing support for learning it (Harju & Åkerblom, 2020).

At the beginning of the research project, the structuring of daily activities and the talk about the children in the unit were generally more in line with the monolingual norm. This was highlighted by the idea that children with access to more than one language must master one of them before starting to learn another, and the practices were organised accordingly. This norm was present along with another idea evident in the unit, that because the children did not understand Swedish they should be provided with clearly structured days. In the unit, the practice of caring was strongly connected to making the children feel safe. In the practice of language development, the sayings about the children conveyed that they 'lacked the language', which affected the doings, so that the aim would be to compensate the children for a perceived lack. This compensatory pedagogy was based on strong structure and Swedish word training in small groups. The relationship between children and educators was characterised by teacher-governed activities. When these norms were identified in the sayings about the language practice, we (the researchers) considered it a great challenge. On the one hand, we did not want to accept the monolingual norms or the views on the children, but at the same time felt that we had to be

cautious and not diminish the educators' competence or work. Consequently, we were hesitant regarding how to express our thoughts, which we felt would be seen as our questioning the basis for the pedagogical idea of the unit.

However, as the structure of the practice was discussed during the reflexive dialogues it became clear that the educators themselves felt that their work was too strongly framed by compensatory pedagogy, and they reflected on the fact that the children's space for action was consequently limited in the language-development practice.

A turning point, and an opportunity for an encounter between the educators and a researcher around the children's competencies, occurred when one of the researchers took the initiative to take part in the daily work on some days. The original intention was to let the children get to know her and feel comfortable, so as not to visit the place as a stranger. This researcher has a background as a preschool teacher herself, and since the children had experience of adults other than their educators (such as temporary staff and trainees) in the unit, it was assumed that they would treat her as one of the staff. However, in relation to the daily activities and the educators she had no clear position or role, as she came not only as a preschool teacher but also as an adult from outside as well as a researcher. This lack of clarity started a reflection process within the researcher group concerning our roles and also led to an expectation from the staff that this researcher and the other researchers would participate more concretely in working with educational development within the unit. The fact that one of the researchers had been participating in the daily work led to direct questions from one of the staff, concerning what the researcher had observed and what could be developed. This question became an important *turning point*, signifying an invitation to start a dialogue about the unit's practices. The answer regarding what the researcher had seen and experienced in the unit led to the possibility to question the unit's compensatory approach and to a dialogue with the educators about how to transform it.

Children's Perspective

To involve the children in the participatory processes, one of the researchers, along with a person working as temporary staff, gave a group of children disposable cameras and asked them to take pictures of the unit. After the pictures had been developed, the researcher took them back to the unit and asked the children individually and in small groups to tell something about the pictures. These conversations were recorded and then transcribed. Some of the pictures then became part of an exhibition at the university library, which was an initiative by the library to show some of the research projects taking place at the university concerning space and place as well as methodologies of space and place. The library invited the children and the unit's staff to visit the exhibition, which was then designed to be interesting to them (with children's books in the various languages spoken by children in the unit and materials for drawing, as well as furniture and spaces of a size and design to be

interesting to children). The children's drawings then also became part of the exhibition. The visit was documented by the educators, and these pictures were placed on a wall at the preschool itself. The activity around how the children saw their environment thus also became visible to their parents. The process around the children taking pictures raised a great deal of interest from outside actors. The pictures and what the children explained about them served as a point of departure for discussions in various contexts, both related to the project and more generally, not least in reflective dialogues with the staff, who were impressed at how much the children knew and were able to express through and about the photographs. This became another *turning point*, with the educators starting to speak about the children in new ways, which meant that the relationships between staff and children also changed. The transformation of the language-development practice was triggered by new conceptions about children, their language assets, and learning in a linguistically rich environment. In turn, the new view on children could be interpreted as having been triggered by the new spaces for action that opened up as the children were invited to use the cameras and be part of an exhibition. Moreover, the notion of 'translanguaging' (Garcia & Wei, 2014) was introduced into the reflective dialogues by one of the researchers in order to help the educators verbalise their implicit notions about the children's linguistic capabilities. The new sayings were interconnected with new doings and relatings as the purpose of the practice became to create *translanguaging space*, with the aim of supporting multilingualism, and the use of languages perceived as a process for expression and meaning making rather than as a tool for mastering the majority language (Harju & Åkerblom, 2020).

Involving the Management

During the project, it became increasingly obvious how important the involvement of management is for the successful development of preschool practice (Harju, 2022). At the beginning of the project, the preschool administration in the area had been undergoing a large reorganisation. Following this, the preschool's management was new, had not worked together before, and, in relation to the project, was not those who had initially signed the project agreement. Consequently, they were not familiar with the project's aims and circumstances. This raised questions from the educators about what time and assets they could use for taking part in the project, and about their space for action (Harju, 2022). To involve the management, reflective dialogues were eventually initiated with the preschool manager, assistant manager, first preschool teacher (whose role was to serve as pedagogic leader for a number of preschools in the area), and one of the researchers. The following quotation illustrates the dilemma of feeling like an outsider:

Since we weren't here from the start of it, it's been a bit strange to become part of a project... great research here... fun, yes, but then... well, it was kind of confusing in the beginning as to what it means, really...

In addition, the vagueness of the project's aim (characteristic of participatory projects) was frustrating to the management, and in the dialogues one of them gave voice to this: 'I thought it was really vague from the beginning, I must say... what will this lead to and what is it, really?'

The aim of the dialogues was firstly to inform the management of the project, of developments, and to ask for active support to the staff involved in the project. Another aim was to actively involve the management in the project and the co-creation of knowledge and create a dialogic space between staff, management, and researchers.

By the end of the project, the members of the management group spoke differently about it in the reflexive dialogues and commented on the staff having been given more space for action and on the roles of the researchers:

...yes, that they (the staff) were allowed to go, that they were given their space too, that like, you come here and you're the researchers, it sounds like, my God! /Scary/ – this approach that you had was cautious, and I think one has to, in some way, have confidence in you. Moreover, that it's possible to talk to you! You're actually ordinary people.

A *turning point* arose when the management group started to recognise a change in the way the staff from the unit spoke about their work, using new vocabulary (Harju, 2022). At this point, the managers started to realise that the children and the staff (and themselves) could benefit from what was being done in the project. Here, this is expressed by two participants from the management group:

I can see that my co-workers have become so much surer of themselves from the pieces they got... support for playing, language games, and all that was done in these groups /.../
Yes, me too, and I think it's really important that their work has been questioned a bit...or, not questioned, but they needed to put words to it.

It is interesting to note that, at the beginning of these dialogues, when the managers referred to the project they used the pronoun 'your' – as in 'your project' (i.e. the researchers') – but by the end they talked about it as 'our' project, including themselves, the staff, and the children at the whole preschool as well as the researchers, which indicates that they saw themselves as co-creators of the project. However, it became obvious that, even though the managers felt they were part of the project, without the support of the external preschool administration it was difficult to pursue the development (Harju, 2022). The fact that most parts of the project were carried out on-site, during the unit's daily work and with no external funding for the participating staff, made the work costly for the management, who were to provide substitutes when there were meetings with the researchers and when members of the participating staff were invited to conferences and presentations involving the project. This had a negative impact on the preschool budget, which led to the manager being criticised when it did not add up (Harju, 2022). This shows that, for this kind of project to be successful and the development to be sustainable, it is not enough to deal with it at the workplace level alone.

Involving the Parents

The design presented to the school institute funding the project involved parents, with an intent to enable another type of development than that seen in projects centred entirely around staff at a workplace (Avery, 2021). This design was also consistent with a desire expressed by the educators to develop their collaboration with parents. The parents of the children enrolled in the unit at the beginning of the project were contacted and interviewed in their mother tongues by one of the researchers. This researcher is proficient in many of these mother tongues, such as Arabic, Dari, Parsi, and a number of other languages. When she did not know a language, interpreters were hired, and the interviews were carried out with their help. However, it was soon apparent that the conditions for involving parents were not favourable for any deeper commitment (Avery, 2021). The staff's expectations and ambitions primarily concerned daily communication with parents around their individual situations, rather than a shared reflection on structures, aims, or work forms. The parents lived in different parts of the city, spoke different languages, and had their children in the unit for short, limited, and sometimes unpredictable periods (as some were asylum seekers). They were busy working, looking for work, doing traineeships, taking language courses, dealing with Swedish administrative demands, trying to obtain necessary information, taking public transport between different parts of the town for various tasks, caring for younger siblings or older relatives, undergoing health treatment or attempting to access healthcare, and so on (Avery, 2021). Additionally, the parents who were contacted in the course of the project did not have expectations to engage in educational or organisational development. Opinions expressed by parents concerned things like having access to the unit over summer break, which was perceived as very long, and not being sent to another unit after a year. The issues they raised concerned the overall organisation and legislation of preschool and were therefore not anything the educators would be able to influence.

Discussion

The objective in this chapter has been to discuss and problematise collective processes that emerged in a 3-year participatory project in one neighbourhood of a major Swedish city between 2017 and 2019. Since the project was designed as participatory action research, a major aim was to empower and open up new spaces for action for all participants. Opening space for action was recognised as occurring after changes had been made to the practice; such changes would often be connected to some kind of turning point. In the chapter, I have addressed some of the spaces for action that were opened up for the educators, children, and managers at the preschool where the project was carried out, as well as the turning points that led to the changes.

One turning point that led to a discussion and negotiation about pedagogical development within the unit was when one of the researchers spent time in the unit and observed the daily work with the eyes of a preschool teacher. This led to an invitation by the educators for this researcher to work in the unit on a weekly basis, as well as to be part of the staff planning meetings. The process thus opened up new space for the staff to take more ownership of the project, take initiatives, and set agendas. However, it was sometimes obvious that researchers and staff participated under different conditions, and that when the ‘reality’ of the unit made itself known, the staff had to prioritise other things besides participating in dialogues with the researcher. The project being carried out on-site, during the unit’s daily work and with no external funding for participating staff, made the work costly for the management, who had to provide substitutes when there were meetings with the researchers and when persons from the participating staff were invited to conferences and presentations involving the project. The negative impact on the preschool budget, and the following criticism of the manager, shows how difficult it is to pursue preschool development without the support of the external preschool administration.

Another challenge addressed in this chapter was that, even though an important aim had initially been to involve the children’s parents, after interviews with them it became clear that they had very different priorities than participating in the preschool unit’s daily work. It was not that they were uninterested in participating in the preschool development; their lives simply often did not enable them to work with the preschool. What the parents expressed instead had to do with the insecurity of their position, above all as asylum seekers, and having relatives affected by war or displacement, which made the staff feel frustrated as they were not able to help them with this situation.

What space for action did open up for the children? Due to changes in the practices they were a part of, their space of action increased and in the course of the project they came to be more actively involved in the preschool activities. As their educators (and the researchers) realised that they were more competent language users than previously thought, the children’s photographs and reflections on the spaces they had depicted challenged the idea of them as ‘lacking language’. This was what eventually led to changes in the pedagogical practices formed around the children. The new sayings concerning children as competent users of multiple languages were interconnected with new doings and relatings as the purpose of the practice became to create a ‘translanguaging’ space where the children would be afforded more opportunities to express themselves in various modes and take an active part in the activities and development of their preschool environment.

However, there remain challenges that could never be dealt with on the level of a preschool development project but that have a profound impact on children’s lives and conditions. This was actualised one morning, when I came to the setting and found the educators sad and upset that one of the children had not come to the unit that morning. The reason for this was that, along with his mother and siblings, he had been deported the night before. What happened to this child shows a major structural discrepancy between a discourse stressing the needs of the child and the

protection of children's rights and equality on the one hand, and a policy that does not provide a stable and secure environment for families with young children on the other, where considerations for the child's wellbeing no longer apply when a family receives a negative decision in the asylum-seeking process.

References

- Åkerblom A., & Salimi-Amlashi, N. (2021). Att öppna upp rum för delaktighet och kommunikation genom transspråkande [Opening up spaces for participation and communication through translanguaging]. In Å. Delblanc, A. Harju, & A. Åkerblom (Eds.), *Möjligheter och utmaningar för förskola, i en tid av mångfald och rörlighet* [Opportunities and challenges for preschool, in a time of diversity and movement]. Studentlitteratur.
- Andersson, S. (2021). Barn som stöttar och förstår varandra i en utvecklande språkmiljö [Children supporting and understanding each other in a developing language environment]. In Å. Delblanc, A. Harju, & A. Åkerblom (Eds.) *Möjligheter och utmaningar för förskola, i en tid av mångfald och rörlighet* [Opportunities and challenges for preschool, in a time of diversity and movement]. Studentlitteratur.
- Avery, H. (2021). Vad spelar roll för föräldrarna? [What matters for the parents?] In Å. Delblanc, A. Harju, & A. Åkerblom (Eds.) *Möjligheter och utmaningar för förskola, i en tid av mångfald och rörlighet* [Opportunities and challenges for preschool, in a time of diversity and movement]. Studentlitteratur.
- Braye, S., & McDonnell, L. (2013). Balancing powers: University researchers thinking critically about participatory research with young fathers. *Qualitative Research*, 13(3), 265–284.
- Delblanc, Å., Harju, A., & Åkerblom, A. (2021). *Möjligheter och utmaningar för förskola, i en tid av mångfald och rörlighet* [Opportunities and challenges for preschool, in a time of diversity and movement]. Studentlitteratur.
- García, O., & Wei, L. (2014). *Translanguaging: Language, bilingualism, and education*. Palgrave MacMillan.
- Harju, A. (2022). Leading change of practice: A study of challenges and possibilities from the position of preschool management. *Educational Action Research*. <https://doi.org/10.1080/09650792.2021.2004903>
- Harju, A., & Åkerblom, A. (2020). Opening up new spaces for languaging practice in early childhood education for migrant children. *International Journal of Early Years Education*, 28(2), 151–161.
- Hawkins, K. (2015). The complexities of participatory action research and the problems of power, identity and influence. *Educational Action Research*, 23(4), 464–478. <https://doi.org/10.1080/09650792.2015.1013046>
- Kemmis, S., & McTaggart, R. (2005). Participatory action research: Communicative action and the public sphere. In N. Denzin & Y. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 559–603). Sage.
- Kemmis, S., Wilkinson, J., Edwards-Groves, C., Hardy, I., Grootenboer, P., & Bristol, L. (2014). *Changing practices, changing education*. Springer.
- Kidd, S., & Kral, M. (2005). Practicing participatory action research. *Journal of Counseling Psychology*, 52(2), 187–195.
- Mahon, K., Francisco, S., & Kemmis, S. (2017). *Exploring education and professional practice*. Springer.
- McNiff, J. (2002). *Action research: Principles and practice*. Routledge.
- National Agency for Education 2018 Skolverket (2018). *Läroplan för Förskolan: Lpfö18* [Curriculum for Preschool: Lpfö 18]. Skolverket.

- Nordén, B. (2021). Att öppna upp för delaktighet och naturvetenskap på förskolegården [Opening up for participation and science in the preschool yard]. In Å. Delblanc, A. Harju, & A. Åkerblom (Eds.) *Möjligheter och utmaningar för förskola, i en tid av mångfald och rörlighet* [Opportunities and challenges for preschool, in a time of diversity and movement]. Studentlitteratur.
- Schatzki, T. R. (2005). The sites of organizations. *Organization Studies*, 26(3), 465–484.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 7

Integrating Digital Technologies in Teaching and Learning Through Participation: Case Studies from the Xlab – Design, Learning, Innovation Laboratory



Eva Brooks, Anders Kalsgaard Møller, and Maja Højslet Schurer

Abstract Technology-rich creative and collaborative learning environments are believed to offer powerful settings for children to become acquainted with computational concepts through playful ways of learning. This chapter draws on a body of empirical research grounded in a Living Lab environment at Aalborg University in Denmark (Xlab – Design, Learning, Innovation), which functions as an educational mediator of playful workshops offering hands-on experience of technologies and creative approaches to experiment- and explorative-oriented activities, where children and teachers can play to learn. The chapter offers insights into understanding the tensions and potentials of such technology-rich environments for participatory-driven creative learning, providing information on practice-related possibilities for and constraints to implementing technology-rich educational designs in early years education.

Keywords Professional learning · Educators · Primary school · Preschool · Digital technology · Participation · Agency · Co-creation · Acquisition · Workshop

Introduction

Digital competence as a concept has gradually come to be addressed in early childhood practices and in policy documents. Recent updates to the curricula for pre-schools in Denmark as well as Sweden highlight that education should contribute

E. Brooks (✉) · A. K. Møller · M. H. Schurer
Department of Culture and Learning, Aalborg University, Aalborg, Denmark
e-mail: eb@hum.aau.dk

© The Author(s) 2023
C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_7

to children's ability to act in an increasingly digitalised society and develop their skills in using digital technology in their everyday lives (Ministry of Children and Education, 2020; Medierådet for børn og unge, 2019; Skolverket, 2011, 2018; Utbildningsdepartementet, 2017; Redecker, 2017). This concern relates to digital technology having come to be seen as an important source of support for educators and children's active participation in teaching and learning activities (Brooks et al., 2020; Fleer, 2019). The everydayness of digital technology (Danby et al., 2018) has offered educators access to a range of opportunities to include such tools (e.g. smartphones, tablets, and digital cameras) as part of everyday play and learning. Research shows that, for example, touch-screen tablets can offer children valuable learning experiences (Nilsen et al., 2021; Kjällander & Moinian, 2014; Clarke & Abbott, 2016). However, including digital technology as part of pedagogical endeavours is not simply a matter of educators' willingness to apply new ways of acting with or having access to digital tools; it is a multi-layered process of professional change that includes both the educator's mindset and pedagogical dispositions informing new teaching and learning strategies (cf. Redecker, 2017). This evokes questions of how educators can make sense of present complex demands on enhancing their digital competence to improve technological integration in their everyday educational activities. As Phelps et al. (2011) state, educational change should consider educators' diverse needs in order to avoid replicating historical and cultural practices. According to Bigum (2002), this would include a risk of assimilating, or domesticating, traditional educational approaches. This way of approaching new kinds of challenges may accomplish only temporary or ineffectual solutions. To avoid a replication of conventional ways of doing things, Dorst (2015) stresses that these present-day problems are a new breed, open, and complex and requiring different responses. The author further suggests a design-oriented approach to framing problems, focusing on an organisation's ability to create new avenues in relation to problem situations. In a similar way, Schön (1983, 1987) emphasises that designing and learning are closely coupled forms of investigating challenges and discovering new opportunities. In this way, learning happens by participating in and reflecting on actions carried out in socially well-organised settings, such as in collective situations. This illustrates how understandings of design-oriented approaches as a participative endeavour to support educators' professional learning and development may operate in tandem with individual and collective manners. Therefore, we contend that different understandings and goals when it comes to integrating digital technology in teaching and learning need not be mutually exclusive. The remainder of this chapter considers a participative design-oriented approach promoting educators' agency in and around the integration of digital technology in teaching and learning activities. The study on which this chapter is based included four teams of 12 early childhood educators who participated in a process of co-creative workshops, including individual or collective facilitation sessions along with the researchers. This was intended to encourage collaborative learning among the educators and researchers and to shape individual and collective reflection in and on specific practices, rather than seeking an optimal integration of specific content.

Background

This chapter has arisen from a 3-year project involving how preschool and primary school educators and children develop digital competence using the so-called DIA model: the Digi-DIA project. The abbreviation DIA stands for the Swedish words *delaktighet*, *inflytande*, and *ansvar* (in English: participation, influence, and responsibility).¹

The project is based on a partnership between a school and preschool district in a municipality in southwest Sweden and the (mobile) research laboratory Xlab – Design, Learning, Innovation at the Department of Culture and Learning at Aalborg University in Denmark. Xlab, founded in October 2016, applies a design-oriented and playful approach to learning, innovation, and digital technology. The lab offers design workshops within the field of education, providing tools and methods for implementing digital designs and technologies in teaching and learning, in order to cultivate ways for practitioners to develop their own approaches to design, learning, and innovation. To do this, the lab is equipped with state-of-the-art technology as well as creative material for exploration, experimentation, idea generation, and other creative methods and knowledge-sharing activities. In the context of the Digi-DIA project, Xlab served as a mobile laboratory where workshops and facilitation were used as tools for learning and knowledge sharing and also as a research method. This was done primarily through hands-on activities with digital technology and critical as well as creative considerations regarding how these could be used pedagogically. The chapter aims to reveal in some detail a description of the challenges and opportunities related to the participative learning processes that emerged within selected early childhood units. We will show how the moves towards integrating digital technology using design-oriented participative learning were gradual and supported by team-based discussions. We hope this chapter, promoting design-oriented approaches and participation, can contribute to new thinking and innovative paths for strengthening practice-based collaboration between educational practice and academia.

The rest of the chapter is organised as follows. We begin with a description of the study's context, followed by a theoretical discussion of the concepts of participation and agency. This is followed by a description of how the research unfolded. Next, we provide examples from the empirical studies within the four teams. Here we elaborate on how the educators on the two teams including children aged 1–3 years cultivated participative workshop expertise within their teaching activities. Furthermore, we address how the educators working with children aged 7–8 years co-created and extended the ways they applied digital technology in their teaching. Finally, we discuss our findings and specify the core challenges involved in the two case examples.

¹DIA is an abbreviation of the Swedish words *delaktighet*, *inflytande*, and *ansvar*. To help the reader grasp the meaning of this abbreviation, we will henceforth use the English terminology of and abbreviation for the words participation, influence, and responsibility (PIR). The concept of PIR was coined by the principal Tony Roth, from Sweden.

Study Context

We start this section with a further elaboration of the PIR model, followed by a description of how the partnership collaboration was organised in four phases (idea and definition, preparation, implementation, and concluding).

The Participation, Influence, and Responsibility (PIR) Model

The PIR model is a holistic co-creation-oriented leadership model that has served a guiding function for the preschool and school district for 10 years. The holistic perspective is grounded in a synthesis of leadership, experience, co-creation, and knowledge, which together shape the conditions for learning and development (Fig. 7.1).

The model targets a real influence by the educators (regarded as classroom leaders), and when used as intended, teams of educators jointly create goal-oriented teaching processes to be applied in their classroom. Co-creation (the real influence) as such should provide conditions for learning as well as motivation and commitment but should also supply conditions for the educator/leader along with the team to create forward-looking work processes based on the sharing of knowledge and experiences. Thus, in the co-creation part, knowledge and experiences are collectively disseminated to individuals, targeting the development of knowledge. To manage this, the teachers regularly develop the so-called PIR plans to support their pedagogical work. These plans have several functions but are primarily intended to function as a tool for the educators in their everyday teaching activities. The PIR planning consists of three levels (T. Roth, personal communication, August 2020):

Fig. 7.1 The synthesis of learning, which constitutes a holistic foundation for the PIR model



- Level 1: Goal-setting.
- Level 2: Planning of the work process.
- Level 3: Evaluation of the leadership.

In the goal-setting activity (Level 1), educators should involve children in the activity. This should open up for the children to participate in a process in which they, through collaborative and democratic processes, can influence their own learning undertakings. When planning the work process (Level 2), teachers should involve the children by asking them questions about their experiences and knowledge related to the specific topic they are going to deal with. In the evaluation of the leadership (Level 3), the educators should assess the ways the children experienced the lectures and what they learnt from the activities. Through this, the educator/leader gets indications of how the leadership has been received by the children. Through these three levels, educators systematically evaluate their own actions and leadership, which optimally can be related back to the learning synthesis (Fig. 7.1); i.e. leadership – co-creation – experiences – knowledge.

Organisation of the Project

The above-mentioned partnership collaboration began with discussions between representatives of the preschool/school district and Xlab, which were based on a genuine and common interest in working together on developing the preschools' and schools' work with digitalisation. These discussions progressed into concrete plans, resulting in a project plan consisting of four phases (Table 7.1).

In the project's first phase, *idea and definition*, the project management group met and had lively and fruitful discussions about our specific interests, wishes, and desires related to the collaboration. This resulted in a partnership agreement and a 3-year project plan detailing aims and research questions, which as such established a Swedish-Danish alliance focusing on educational challenges related to the integration of digital technology in teaching and learning. In connection with this, we established a project leader team consisting of the two principals of the preschool and school, respectively, two educators representing the district's preschools and schools, and a researcher from the Xlab research laboratory at the university. This group held regular physical and online meetings throughout the project's duration, as well as afterwards. During the process of establishing the partnership agreement, the project leader group from the preschool and school district visited Xlab and Aalborg University.

In the second phase, *preparation*, the researchers visited the preschools and schools on several occasions in order to provide information about the project, to learn about their ways of working and what they wanted to get out of the project, and to enable the educators to get to know us. The educators from the preschools and schools introduced their PIR model profile and explained how they approached it in their daily activities. The researcher from Xlab presented its design-oriented

Table 7.1 The four phases of the Digi-DIA project

Idea and definition phase Sept. 1, 2017– Jan. 31, 2018	Preparation phase Feb. 1, 2018–Aug. 31, 2018	Implementation phase Sept. 1, 2018–Dec. 31, 2019	Concluding phase Jan. 1, 2020–Aug. 31, 2020
Partnership agreement	Researchers from Aalborg University visited the preschool and school district on several occasions	Two baseline investigations including all educators, even those choosing not to participate in the project (August 2018, May 2019)	Final baseline investigation (June 2020)
Project plan	Interviews, informal conversations, and observations by the researchers	The researchers visited preschools and schools several times, carrying out workshops and facilitation along with project participants (individual and collective)	Summative analyses of baseline studies and other data
Visit by participants from the preschool and school district to Aalborg University	Distribution of literature to the project participants	Gathering of data and formative analyses (three times per semester)	Knowledge distribution to educators and municipality department
	Planning of the implementation phase	Writing of scientific articles and feedback to municipality department	Documentation of the project
	Information about the project to all staff members		
	Invitation to participate in the project sent to all educators		
	Project kickoff workshop, August 2018		

and playful approach to learning, innovation, and digital technology, and how we addressed this more concretely in educational practices as well as how this has had implications for teaching and learning among educators and children. These visits among the educators were a way for the researchers to get an understanding of the current state related to how they did or did not integrate digital technology in teaching and learning. We also distributed literature among the educators exemplifying different projects and approaches to working with digitalisation in preschools and schools. This gathering of information, viewpoints, and experiences resulted in insights that formed the basis for an initial project implementation plan. As participation in the project was voluntary, the educators were invited to be part of the project during this phase; 32 of them chose to participate and 17 chose not to. The second phase ended with a project kickoff workshop in August 2018 that included the participating educators.

The third phase, *implementation*, started with a baseline investigation (questionnaire) among all educators (including those who had chosen not to participate in the project). This investigation was carried out three times over the 3 years of the project (August 2018, May 2019, June 2020). During this phase, the researchers visited the preschools and schools several times and conducted workshops and facilitation (individual and collective) in the form of informal conversations, interviews, and demonstrations of different digital technology. It was decided that the PIR plans, which were already an established tool among the educators, should also be used in the project as a means for the educators to specify the use of digital technology in their teaching activities. The PIR plans were collected and analysed by the project leader team and in this way served as a resource, among other data gathered during this phase, to guide us when it came to implementing project activities. They also constituted one of the bases for choosing workshop topics, as well as for framing interviews, demonstrations, and discussions with the educators. Furthermore, data from interviews, observations, and informal conversations as well as from the educators' logbooks and video logs were gathered and regularly analysed within the project leader team. This comprised a formative basis for the implementation of workshops and facilitation and hence functioned as regular feedback to and knowledge sharing with the educators. The writing of a scientific article was initiated, as was the distribution of information at the principals' meetings with the municipality department.

Finally, the *concluding phase* focused on summative analyses of the collected data, including the baseline questionnaires. This was primarily carried out by the researchers but was discussed within the project leader team and communicated to the educators at a half-day seminar. The outcomes were also communicated with the leadership at the municipality level. It is important to note that, while not all of the educators participated in the project, the agenda of the project's activities was sent out to all educators in order to ensure that the project's presence was visible and clear to all. This included the communication of the project's final outcomes.

The project as a whole includes several cases in which teachers and children, facilitated by Xlab workshops and other forms of guidance, integrated different kinds of digital resources (e.g. tablets, Bee-Bot robots,² Ladibug document cameras,³ QR [Quick Response] code scanners⁴) in their teaching activities. The project consisted of 32 educators working with children aged 1–12 years. However, in this chapter, we have chosen to focus on four teams of a total of 12 early childhood educators and how they integrated digital technology in children's play and learning

²Bee-Bot is a programmable robot that can be used to introduce coding and problem-solving; see <https://www.tts-group.co.uk/blog/2019/01/25/bee-bot-the-story-behind-our-award-winning-programmable-robot.html>

³Ladibug is a portable document camera that can be connected to a computer and used as a learning and teaching tool, adding visual elements; see <https://www.mckeelschools.com/uploads/ibis/useyourdoccamera.pdf>

⁴QR codes contain data for an identifier or tracker that points to a website or an application.

activities, i.e. how they think about, implement, and plan for different ways of supporting children's digital learning.

Participation and Agency

Participation became a connecting node in the collaboration between the practice and research teams. One of the project's primary goals was to involve the educators at the preschools and schools by making them 'owners' of the situation that was causing them problems. We were thus interested in their input in identifying the current situation regarding problems and opportunities, as well as how they might be approached or sustained. Therefore, we spent 6 months preparing the project and included the educators through informal conversations while observing how their workdays unfolded, interviews, and a baseline questionnaire. The outcomes from this data showed, among other things, that the participants desired opportunities to participate in co-creative sessions together with their colleagues to make sense of and cultivate their professional learning when it came to integrating digital technology in their everyday teaching and learning activities (Brooks et al., 2020). These kinds of social, intersubjective processes can bind individuals, groups, and organisations together while at the same time unfolding values and habits and, accordingly, providing meaning to the participants' actions as well as fostering learning (Rikkerink et al., 2015; Wenger, 1998). In this way, negotiation and sensemaking through shared practices and experiences could create conditions for a fluid and change-oriented conceptualisation of integrating digital technology in play and learning. Hence, participation in collective sensemaking constitutes a crucial prerequisite for incorporating digital resources in teaching practices (Rikkerink et al., 2015). Expressed differently, engaging educators in participation-oriented and collaborative processes through which they can share knowledge and learn from each other is fundamental in providing them with resources to drive their own professional learning. We understand this as learning through participation which, in line with Andriessen et al. (2013), we view as being recognised at the level of 'how to', 'what to', or 'about what' issues (p. 208). Participating in professional learning thus becomes more than changing a classroom to make it appropriate for implementing digital technology or having access to or the skills to use such resources. This also implies different types of agency among educators. What goes on in such situations can involve agency related to participating in the elaboration of knowledge together with others, such as epistemic agency (Damsa et al., 2010), regulative agency (van der Puil et al., 2004), or relational agency (Edwards, 2007).

In the context of this chapter, the educators primarily strived for a participation metaphor for learning, highlighting co-creation as a key activity to elaborate their learning about how to integrate digital technology in teaching, what kind of technology to use, and what the pedagogical framing should be about. At the same time, co-creation could lead to a long-term community-building, bringing about a sense of belonging and new communicative pathways (Sfard, 1998). However, they also

partly emphasised an acquisition metaphor, considering individual enrichment to be a goal of their learning in terms of improving their individual skills (Sfard, 1998). Sfard (1998) distinguishes between these two metaphors for learning: the participation metaphor, focusing on the activity and context, and the acquisition metaphor, building on the metaphor of acquiring or accumulating knowledge. In the two subsections below, we will unfold these two metaphors, starting with the participation metaphor focusing on co-creation and then discussing the acquisition metaphor focusing on individual and collective efficacy.

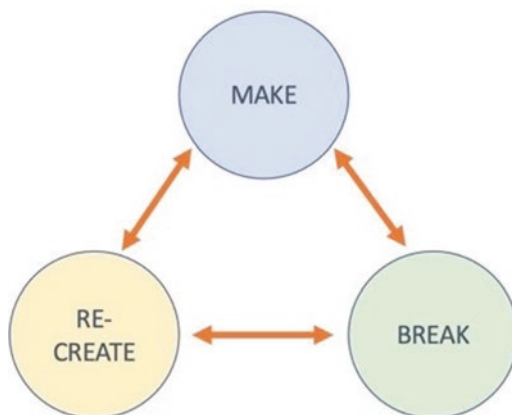
Co-creation Metaphor: The Collaborative Setting

Co-creation as a concept is based on a participatory ethos, which has increasingly come to be extended to the political, social, cultural, and scientific spheres (Sanders & Stappers, 2014). Even though co-creation has recently become a widely used term, it can be argued that the participatory ethos is a well-established aspect within participatory research approaches, e.g. in design and action research (cf. Bødker & Grønbæk, 1990). Ind (2013) states that the idea of ‘creation’ is not only about making things but also involves interpretation and meaning-making. This is an important comment in relation to this chapter, as the co-creation aspect included dimensions of educators’ collegial ‘making’ as well as ‘reflection’. For example, in creative workshop activities the participants experimented with different digital technologies and explored their pedagogical potential. Moreover, the workshops included reflective collegial discussions, during which the integration of such teaching and learning opportunities were critically scrutinised. Expressed differently, the reflection dimension can be seen as a ‘breaking apart’ activity – complementary to the ‘making’, i.e. in terms of ‘putting together’ something. This is comparable to what we do during analysis, finding relationships between the parts and the whole and then breaking these relationships apart into constituent pieces, followed by a re-creation of the parts into a new whole (Fig. 7.2). The make-break-re-create model describes the co-creation activities that take place when one investigates issues of *how to*, *what to*, or *about what*. The model combines making, breaking, and re-creating, each of them energising the next. This combination shapes what Sanders and Stappers (2012) term an opportunity space.

Acquisition Metaphor: Individual and Collective Efficacy

The acquisition metaphor describes learning as the acquisition and accumulation of knowledge. Underlying this are primarily cognitive models, in which concepts like transmission, internalisation, and appropriation are demonstrated. However, constructivist models are also represented with an acknowledgement of meaning construction. Some activities can be seen as more acquisition- or participation-oriented

Fig. 7.2 Analytical 'making-breaking-re-creating' cycle. (Inspired by Sanders & Stappers, 2012)



and as such draw on different foundations and viewpoints in regard to questions about, for instance, learning or knowledge construction; for example, the act of acquisition is often equal to that of becoming a participant. Sfard (1998) argues that it is possible to use elements from both metaphors. Bandura (1997) claims that the best way to acquire a new skill or improve one's performance is to practise. Part of learning a new skill or practice is a person's own belief that they are capable of doing it (self-efficacy). The interpreted experience or performance while taking on new challenges influences people's self-efficacy. Bandura (1997) refers to this as the mastery experience. Self-efficacy can also be enhanced through social relations. Observing others, such as colleagues or role models, succeed in a task or being complimented can also positively affect one's self-efficacy (Bandura, 1997).

Collective efficacy, defined as 'a group's shared belief', and explains how joint understanding can influence people's actions (Bandura, 1997, p. 477). According to Bandura (1997, p. 418), collective efficacy can:

influence the type of future [educators] seek to achieve, how they manage their resources, the plans, and strategies they construct, how much effort they put into their group endeavour.

In Bandura's understanding of individuals' collective efficacy, their shared belief plays a key role in reaching their goal (Bandura, 1995). Conversely, an individual who expects to master a given challenge will also be able to continue trying (Bandura, 2007).

The Research Unfolds

The substantive period of data collection for the research took place during the project's third implementation phase, from September 1, 2018, to December 31, 2019. Professional learning as a form of social participation is also subject to change, e.g. organisational, making it challenging to convey its complexities in standardised

ways. In studying the educators' processes of understanding and implementing digital technology over time, we hoped to bring some degree of authenticity to the research. A key part of understanding the influences of implementing digital technology in teaching and learning situations involved the explorative and reflective discussions between the researchers and educators during workshop activities, informal conversations, and semi-structured interviews. Our target was to build a shared understanding of what we were seeing or experiencing from our respective perspectives as insiders and outsiders and, obviously, this took time. We considered it both important and vital to allow time for 'slow' thinking and progressing. In her chapter, Mirza (2013) introduces the concept of 'thinking space', which she describes as a space where disagreements can be incorporated to become a meaningful activity. In the study discussed in the current chapter, slow thinking became a kind of a thinking space that nurtured the educators' creative and reflective thinking, which in turn step-by-step contributed to mastery and the educators' experience of progression.

The research emerged from a desire to better understand the impact of understanding the *how to*, *what to*, or *about what* relative to implementing digital technology in teaching and learning. When the research required participation of individual educators, e.g. when conducting interviews, supply educators were used to support the team. From this outset, we set up the work as a research project, with the participants supported by their principals. In a letter to the children's guardians, we informed them that we would be filming their children, but only for the purposes of the research. The guardians could return a slip to the preschool or school, stating whether or not they wanted their children to be filmed. Only a few did this, and their wishes were respected throughout the study. The children themselves also had the opportunity to choose not to participate in the video recording. The educators were interviewed individually about the development of their understanding and options in regard to implementing digital technology, as well as about how this was progressing in relation to their pedagogical intentions and other aspects, such as challenges, benefits, likes, and dislikes. They were assured confidentiality.

Workshop as a Research Method

We have mentioned workshops a few times as a co-creative approach to exploring and experimenting in unknown territories. In applying a collaborative action research methodology (Lofthouse et al., 2016), workshops became a key method within the project as we aimed to inspire and foster active participation and engagement among the educators, within as well as between the different workshops. This was not the only target, though; we also wanted to create conditions for sharing and collaboration between the researchers and educators in order to foster sustainable processes that could continue even after the project ended. The workshop method, as previously mentioned, was combined with other methods that were carried out between the different workshops. In this way, together we were able to address the

links between theory and practice in different ways, using workshops, observation, video-recorded material, children's productions, casual conversation, semi-structured interviews, logbooks, and educators' pedagogical planning.

The term 'workshop', often seen in combination with the term 'participation' (Ørngreen & Levinsen, 2017; Ødegaard et al., this volume, Chap. 5), is a method that over a 5-year period has been applied and developed within Xlab based on observations of and talking with different stakeholders. The Xlab researchers explore collaborative learning through playful workshops offering hands-on, reflective experiences of digital technologies and design-oriented approaches. This can be done in the laboratory, which is designed to support cross-disciplinary collaborations including different stakeholders, as well as outside the laboratory in the form of a mobile practice-based laboratory. In this chapter, the stakeholders are educators, children, and leaders of early years education practices.

Analytical Approach

The analysis method applied in this study is thematic (Fereday & Muir-Cochrane, 2010; Braun & Clarke, 2006). This means that it was the empirical data that drove the emergence of analytical concepts. Gathered data were transcribed and reviewed to find patterns in verbal and non-verbal actions as well as in the written documents. In this chapter, we analyse two cases involving four educator teams: (1) four educators working with 1- to 3-year-olds; (2) another group of four educators working with 1- to 3-year-olds; (3) two educators working with 7-year-olds; and (4) two educators working with 8-year-olds. The first case, cultivating participative workshop expertise to implement digital technology, is based on the educator teams working with children aged 7–8. The second case, child-initiated activities as a foundation for implementing digital technology, is based on the educator teams working with children aged 1–3. We present our analysis of each of the cases below by introducing excerpts that are representative of the respective cases. This is followed by our interpretation of what this means, using the analytical concepts related to participation and agency.

Case 1: Cultivating Participative Workshop Expertise to Implement Digital Technology

This case looks at how the educator teams began to make sense of implementing digital technology as part of their PIR planning. In doing so, they were inspired by workshop activities and reflective sparring by the researcher, through which new teaching ideas emerged. Two excerpts are shown below, the first of which involves Jane and Alice, who were initially inspired by workshop activities including

robotics, which afterwards led to iterative and reflective sparring sessions between the two of them and the researcher. This excerpt illustrates part of a conversation between Jane, Alice, and the researcher, in which they reflect upon workshop activities in terms of creative occasions that helped in structuring their own as well as their pupils' explorations with digital technology. The second excerpt focuses on Sofie and Freya, who started requesting sparring from the researcher about what kinds of digital tools they could use for teaching subjects or topics such as the Swedish language, mathematics, or programming. They wanted their teaching to be more child-driven and thought that a more digital and game-oriented approach might be an option. This sparring was followed by iterative mini-workshops at which different technologies were investigated. The first excerpt, below, focuses on the digital tool Osmo⁵ and how the educators elaborate on their position in a digitalised teaching context:

1. *Jane*: I've learnt a lot through the workshops we've had during the project. However, as I already use and have used digital tools in my teaching for a while, the sparring between the workshops has been a way for me to move forward. To develop my knowledge.
2. *Alice*: For me it's, in a way, the other way around. I haven't used digital technology a lot; of course I've used laptops and iPads in my teaching, but primarily for the student to search for information. But when we started working together [directed at Jane], I started getting more and more brave and also, perhaps through the project workshops, we started talking about implementing digital technology in another way than we used to do. Before, I didn't want to talk about it, because I didn't know what to talk about. But since we've tested different tools and we've heard from our colleagues about how they use certain tools in their teaching, I think the term 'digital technology' has become more accessible and possible to talk about. And the way we've worked with robotics [directed at Jane], I have a broader perspective, particularly when it comes to the pedagogical aspects of talking about the digitalisation of teaching.
3. *Jane*: I agree with you. The workshops, in a way, gave me a systematic way of... or rather, they triggered me to be more systematic in what I wanted to achieve. I can see that among my pupils as well. When they built their neighbourhood with creative material and the robots [Bee-bots and Ozobots] were the ones who were supposed to show the inhabitants how to use the different resources in the village to support different sustainability actions, it was when they created the houses, the recycling stations, and so on that they started to talk more elaboratively about this (Fig. 7.3). It was necessary for them to talk about it, to look online, to read, to identify the role of the robots and, based on this, code them accurately. Such a good, what should I say, good practice for my pupils.

⁵Osmo consists of tangible wooden pieces that can be used to play digital games – drawing, coding, spelling, etc. Link: <https://www.playosmo.com/en/>



Fig. 7.3 Children's creation of a 'green' neighbourhood, where Ozobot was to guide the inhabitants to sustainable living

Here the excerpt involving Jane and Alice ends and is followed by the excerpt below of Sofie and Freya's discussion:

1. *Sofie*: I thought I would struggle a lot with introducing new kinds of digital tools to my pupils. I've mostly used laptops or iPads. But this Osmo game was really a good way to do it. I could understand the principles behind the game quite easily, and the children just started using it and solved the technical issues themselves; the only questions they had for me were subject-related.
2. *Freya*: I agree. Have you ordered the programming game, Eva [researcher]?
3. *Eva*: Yes, it should arrive one of these days when I'm still here.
4. *Freya*: Great. Trying out robotics and this Osmo game and talking about them with Sofie and you [Eva], and not considering them *technology per se* but as pedagogical resources that can give my pupils more opportunities to enjoy learning, has /.../ yeah, it's changed my way of thinking about the digitisation of teaching. It's possible to handle. It's good that we [directed at Sofie] work together and talk about all the changes we have to deal with as teachers. I've learnt a lot about digitalisation. It's not a mountain to climb; step-by-step we've learnt about different tools and now I feel much more confident.
5. *Sofie*: Add to this the feedback we've received from the children. We've observed them and asked them questions about their use of Osmo. They liked it because they could collaborate with their friends, they thought it was fun but also tricky, and many of them said they had to think more and be very accurate when solving the tangrams.
6. *Freya*: I could see that they collaborated a lot – they didn't disturb others, but were very concentrated and determined.

7. *Sofie*: And engaged. We've used it for a few weeks now and they still ask to play it.
8. *Freya*: When they worked together, they helped each other. I could see who was more used to digital games than others. But as there are a few different kinds of games, the children can find how they want to work, for example by means of games or building tracks or solving puzzles.
9. *Sofie*: It was great to see how they worked with speech perception.

The first excerpt illustrates the ways co-creative making-breaking-re-creating activities inspired and cultivated the educators' sense of expertise (e.g. line 3). The second excerpt demonstrates how sparring and intersubjective processes provided the educators with resources to drive their own professional learning; this is exemplified in line 4, where Freya stresses that her conversations with Sofie have contributed to her now more relaxed way of dealing with digitalisation in the classroom.

The sense of expertise that the educators expressed in the first excerpt was growing by means of sparring and teamwork, and studying the children's interactions with the digital tools (lines 1, 4, 5, and 8) created an opportunity space for the educators (line 4). In this space, they experienced agency through exploring tools and reflecting upon them with colleagues: a sense of epistemic and professional agency.

In the second excerpt, the educators concretised how acts of making were similar as vehicles for inquiry. This making shaped conditions for reflection on how to accurately make something so that it represents what is required for representing the scenario. In this way, the features of the making-breaking-re-creating model established tensions between the constituents. In turn, these tensions led to an increase, either in understanding or in the number of possible solutions, thereby creating what seemed to be a comfortable relationship between the parties.

The two excerpts demonstrate more of a co-creation than an acquisition metaphor, showing tendencies towards a participatory ethos as well as demonstrating how the parts of the making-breaking-re-creating cycle (Fig. 7.2) spurred each other and created opportunities for agency and sensemaking by means of sharing.

Case 2: Child-Initiated Activities as a Foundation for Implementing Digital Technology

This case demonstrates that the educator teams regarded child-initiated activities as a foundation for implementing digital technology in the everyday activities of children aged 1–3 years. They strived to create an environment where the children could be introduced to digital technology through their own curiosity in exploring the surrounding world. In doing so, they were concerned with recognising and acknowledging the children's desires and questions, and with this as a foundation they introduced the children to different kinds of digital technology. This second case shows part of a longer discussion between four of the educators (Susan, Sofie, Emma, and

Tove), in which they attempt to unfold, in particular, the questions of *how to* and *what to*, as well as *what is required* to develop agency:

1. *Susan*: We've started using the Ozobot robot with the two- to three-year-olds. We experienced that the Ozobots had more to add for our young children; they were also simpler for us to use compared to Bee-bots, which we used to use.
2. *Sofie*: Yes, we started by introducing Ozobot to some of the children. We chose to let them draw their own tracks with coloured Sharpies on a big white piece of paper. However, we noticed that the thing with drawing the tracks on the paper was difficult, as the lines were often too thin. Because of that the robot couldn't follow the tracks. Another difficulty was that many of the children drew the lines very close to each other, and it was again difficult for the robot to follow the tracks.
3. *Emma*: We noticed that the children liked to draw paths with coloured Sharpies and then follow the robot's path and how the colour of the robot changed according to which colour code it was following. It was a wonder for the children.
4. *Susan*: These problems were the reason why we chose to change [from the analogue programming] to investigating apps, so that instead of paper and Sharpies we could use the iPad and the children could use their fingers as drawing tools.
5. *Tove*: It was a helpful shift. The children just loved it. In the apps, not only could the children draw lines, they could also paint – all by themselves. They painted by themselves with their fingers in different colours and then they placed the Ozobot on the iPad and could watch how it moved along the lines (Fig. 7.4).
6. *Susan*: In the program there are ready-made codes. We showed how to add them. This was something they then could sit and work with a little by themselves or with a friend.
7. *Emma*: The kids were very focused, but still laughed and enjoyed what they could do. There wasn't much need for support from us.
8. *Susan*: Another app we tried was one that supplied codes to make the Ozobot dance to the beat of different songs and also flash in different colours. Here, we worked together with several children and could use several robots. The children could choose songs they wanted the robot to dance to.
9. *Tove*: Yes, it was fun. When the Ozobots finished flashing, we could start the music again and all the robots danced at the same time. The children thought this was very funny. The combination of the robots dancing in funny ways and flashing in lots of different colours appealed to the children very much. In the program it was also possible to reset the Ozobot, which we showed the children how to do. In the same program, our older children could continue to work and create their own dances and choose the colours themselves.

Fig. 7.4 A 3-year-old coding tracks for Ozobot (robot) on the iPad while Ozobot is simultaneously using the tracks



10. *Susan*: It was a good learning practice for them. We've also tested other digital tools, like the Bee-bots and Tapioca,⁶ but it's the Ozobot that the children want to use repeatedly.
11. *Emma*: I don't know much about digital things. It's Susan and Sofie who find all these apps and [figure out] how we can introduce them to the children. We want the children to use these tools and learn. Like with the Ozobot, they learnt a lot and they had lots of fun. We're outdoors a lot, and then we let the children take photos with our smartphones or iPads. We then revisit the photos when we come back and talk about what we experienced. Most often it's photos of insects and birds, and then we use the Internet to learn more about them. When we sit around the table for lunch, it's by the window, we can see birds in the trees outside the window. Then the older children point and say, 'Look, a house sparrow'. They don't just say that it's a bird.
12. *Tove*: We try to be attentive to their interests. Right now, they're very interested in insects. So, we try to use that and explore further using, for example, the Internet and Bee-bots.
13. *Susan*: But we also want them to experience new digital challenges, so that they're introduced to it in pedagogical ways. They're not too young for that. But it's important to show the parents that we don't just use apps as a time-killer but that it's embedded in our learning goals.

⁶Tapioca is an interface, made of cardboard, which can be used to draw and play music. Link: <https://tapioca.toys/cardboard/>

14. *Emma*: I must say that I've learnt as much as the children and have probably had as much fun when we've tried these different robots and other digital tools I haven't used before. I would never have introduced this to the children by myself, as I wanted to learn about them first so that I know how they work and all the tricks. But by having done this together with my colleague and the children, I realise that 'I'll never have the time to explore beforehand as much as I thought I could or wanted, but need to challenge myself and just explore and learn from colleagues and our children. For me, this has been a challenging but rewarding learning curve. To learn that I'll never learn enough about the technology, but start using it anyway and become wiser about how I can use it so that it fits the study plan. It was a relief.
15. *Susan*: Well, that's important, but we also want the children to have fun by doing things together and having a good laugh.
16. *Emma*: But we don't want to rush it, either for us or for the children. What I've experienced is that it's okay that things take time. This has helped me to understand that it's not necessary to rush things just because society, the ministry, and other media stress that we'll be behind if we don't start. I don't mean that we should go on forever, but rushing slowly isn't bad.

In the excerpt, the team attempts to concretise the ways they, together with the children, have explored and implemented digital technology in their everyday teaching activities. They invoke this by acknowledging both an acquisition and a co-creation metaphor. When considering the questions of *how to*, *what to*, and *about what* in relation to the children, they primarily reference the acquisition metaphor and how they established situations for fostering the emergence of the children's coding skills. In their elaboration on how they used the Ozobot robot among the children, they emphasise causality as a driving force in the children's engagement and learning about the relationship between the lines (codes) and the robot's movement. This is exemplified in line 3, where Emma highlights that the children seemed to understand that the Ozobot changing or flashing a certain colour was an effect of the coding. In line 9, Tove connects this to self-efficacy, stressing that by now the older children were skilled enough to code and play with the Ozobot by themselves. Similarly, Emma (line 7) and Susan (line 6) stress that the children repeatedly practised with the Ozobot and coding and thus improved their coding performance.

This excerpt shows the teams' efforts to shape situations, in which the children's interests are essential. Relevant examples can be found in lines 3, 11, and 12, where Emma and Tove elaborate on their determination to take up the matters that the children express as being interesting in one way or another. The teams use this for further inquiries together with the children. Emma and Tove continue on this route, trying hard to address an emotional commitment on the children's part. This is shown in lines 5, 7, and 9, where they repeat references to the importance that teaching evoke enjoyment among the children. However, in line 13, Susan responds to this by noting that what they should transmit are digital challenges, indicating that there should be a balance between joyful and challenging teaching situations.

Finally, in lines 11, 14, and 16, Emma summarises another orientation within this case, which refers to the concept of thinking space, closely related to the concept of mastery experiences. The relationship between these two concepts suggests an experienced balance between the co-creation and acquisition metaphors. The thinking space, in this case, does not refer to disagreements but rather to the matter we have termed *slow thinking*. Susan, in line 15, expresses a slight resistance to the aspect of slow thinking, and Emma (line 16) responds by stating that ‘rushing slowly’ is not necessarily a bad thing.

Conclusions

The aim of the study discussed in this chapter was to reveal and describe challenges and opportunities related to educators’ integration of digital technology in their teaching. In this regard, we have highlighted learning through participation, understood and recognised at the level of *how to*, *what to*, or *about what* questions. The study, which is part of a larger project, included four teams of educators in early years education from a preschool and school district in southwest Sweden. The analysis revealed that the educators’ experiences could be described in terms of two opposite but complementary metaphors for learning: the co-creation metaphor, which focused on collaboration; and the acquisition metaphor, which shed light on individual and collective efficacy.

In the practices in which workshops and facilitation (or sparring) have been deployed, it has clearly had an impact on the nature of approaching digital technology in teaching and learning activities. It has also had an impact on relaxed, systematic, and enlightening intersubjective interactions at different levels: between the educators, between the schools and preschools, and between individual educators as well as educator teams and the researcher. We witnessed informal conversations as well as more profound connections being made through participation and agency. Most of the educators did not refer to any everydayness (Danby et al., 2016) of digital technology; however, during the project they developed a professional everydayness involving different kinds of digital tools.

The design-oriented set-up of the research, including observations, interviews, and conversations, helped us arrive at insights that have proven to be rich in terms of enabling us to get a stronger grasp on the phenomenon of the digitalisation of teaching and learning activities in the specific context of the preschool and school district. All in all, this approach had an enhanced participatory character, and by providing continuous feedback to the educators, we enabled them to mutually build upon a common ground (the PIR model).

The types of metaphors identified in the data can be regarded as rather generic. In relating the educators’ initial experiences to the use of digital technology in educational settings, they can be aligned with previous studies (Redecker, 2017; Dorst, 2015; Phelps et al., 2011) and as such be made possible to be understood and applied in similar research contexts. Our main contribution involves the benefits of the

making-breaking-re-creating model, with the three constituents together forming an opportunity space. This was more of a collective space compared to the thinking space, which was more applicable as an individual space. However, using Sfard's (1998) argumentation, the two spaces are not necessarily distinguished in this way; it is also possible for people to use elements from both.

Our main implication for the educational practice deriving from these conclusions relates to the organisational design of educational practices. If we want educators to better understand how to make digital technology integration productive, we need to cultivate them in regard to how participation and agency might work and how to deal with crucial aspects when collaborating about specific areas of their work. In our study, this concerned developing shared understanding and the co-creation of knowledge. Another important implication concerns the relationship between the institutional demands and goals, the participants' design and learning processes, and what they perceive as important with regard to participation in professional learning. All in all, we maintain that the different metaphors for learning – co-creation and acquisition – should enable educators to pursue their professional learning interests and advance their knowledge.

References

- Andriessen, J., Pardijns, M., & Baker, M. (2013). Getting on and getting along. Tension in the development of collaborations. In M. Baker, J. Andriessen, & S. Järvelä (Eds.), *Affective learning together. Social and emotional dimensions of collaborative learning (185–204)*. Routledge.
- Bandura, A. (2007). In A. Bandura, I. G. Lindzey, & W. M. Runyan (Eds.), *A history of psychology in autobiography* (Vol. 9, pp. 43–75). American Psychological Association. <https://doi.org/10.1037/11571-002>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman and Company.
- Bandura, A. (Ed.). (1995). *Self-efficacy in changing societies*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511527692>
- Bigum, C. (2002). Design sensibilities, schools and the new computing communication technologies. In I. Snyder (Ed.), *Silicon literacies. Communication, innovation and education in the electronic age* (pp. 130–140). Routledge.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Brooks, E., Bengtsson, M., Roth, T. & Tonby, L. (2020). To become digitally competent: A study of educators' participation in professional learning. In Brooks, A. & Brooks, E. (Eds.), *Interactivity, game creation, design, learning, and innovation. 8th EAI International Conference, ArsIT and 4th EAI International Conference, DLI (699–713)*. *Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*. Springer. <https://doi.org/10.1007/978-3-030-53294-9>
- Bødker, S., & Grønbaek, K. (1990). Cooperative prototyping: Users and designers in mutual activity. *International Journal of Man-Machine Studies*, 34(3), 453–478.
- Clarke, L., & Abbott, L. (2016). Young Pupils', Their Teacher's and Classroom Assistants' Experiences of iPads in a Northern Ireland School: Four and five years old, who would have thought they could do that? *British Journal of Educational Technology*, 47(4), 1003–1339. <https://doi.org/10.1111/bjet.12266>
- Dorst, K. (2015). *Frame innovation. Create new thinking by design*. The MIT Press.

- Damsa, C. I., Kirschner, P. A., Andriessen, J. E. B., Erkens, G., & Sins, P. H. M. (2010). Shared epistemic agency – An empirical study of an emergent construct. *Journal of the Learning Sciences, 19*(2), 143–186.
- Danby, S., Fler, M., Davidson, C., & Hatzigianni, M. (2018). Digital childhoods across contexts and countries. In S. J. Danby, M. Fler, C. Davidson, & M. Hatzigianni (Eds.), *Digital childhoods: Technologies and children's everyday lives* (International Perspectives on Early Childhood Education and Development, Volume 22) (pp. 1–14). Springer.
- Ind, N. (2013). The meaning of co-creation. *European Business Review, 25*(1), 86–95. <https://doi.org/10.1108/09555341311287754>
- Edwards, A. (2007). Relational agency in professional practice: A CHAT analysis. *Actio: An International Journal of Human Activity Theory, 1*, 1–17.
- Fereday, J., & Muir-Cochrane, E. (2010). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods, 5*(1), 80–92. <https://doi.org/10.1177/160940690600500107>
- Fler, M. (2019). Digitally amplified practices: Beyond binaries and towards a profile of multiple digital coadjuvants. *Mind, Culture, and Activity, 26*(3), 207–220.
- Kjällander, S., & Moinian, F. (2014). Digital tablets and applications in preschool: Preschoolers' creative transformation of didactic design. *Designs for Learning, 7*(1), 10–33.
- Lofthouse, R., Flanagan, J., & Wigley, B. (2016). A new model of action research: Theorising from inter-professional practice development. *Educational Action Research, 24*(4), 519–534.
- Läroplan för Grundskolan samt för Förskoleklassen och Fritidshemmen (Lgr 11). Stockholm: Skolverket (2011). <https://www.skolverket.se/undervisning/grundskolan/laroplan-och-kursplaner-for-grundskolan/laroplan-lgr11-for-grundskolan-samt-for-forskoleklassen-och-fritidshemmet>. Last accessed 14 May 2021.
- Läroplan för förskolan. Skolverket (2018). <https://www.skolverket.se/undervisning/grundskolan/laroplan-och-kursplaner-for-grundskolan/laroplan-lgr11-for-grundskolan-samt-for-forskoleklassen-och-fritidshemmet>. Last accessed 20 May 2021.
- Medierådet. (2019). *Digital Dannelselse i Børnehøjde: Del 2. Digitale medier i børnehaven*. Retrieved from: <https://bornsvilkar.dk/wp-content/uploads/2019/01/Digital-Dannelselse-Del-2.pdf>
- Ministry of Children and Education. (2020). *The strengthened pedagogical curriculum. Framework and content*. https://emu.dk/sites/default/files/2021-03/8077%20SPL%20Hovedpublikation_UK_WEB%20FINAL-a.pdf.
- Mirza, N. M. (2013). A sociocultural perspective on conflict in argumentative design. In M. Baker, J. Andriessen, & S. Järvelä (Eds.), *Affective learning together. Social and emotional dimensions of collaborative learning* (233–250). Routledge.
- Nationell Digitaliseringsstrategi för Skolverket. Stockholm: Utbildningsdepartementet (2017). <https://www.regeringen.se/4a9d9a/contentassets/00b3d9118b0144f6bb95302f3e08d11c/nationell-digitaliseringsstrategi-for-skolasendet.pdf>. Last accessed 14 May 2021.
- Nilsen, M., Lundin, M., Wallerstedt, C., & Pramling, N. (2021). Evolving and re-mediated activities when preschool children play analogue and digital Memory games. *Early Years, 41*(2–3), 232–247.
- Phelps, R., Graham, A., & Watts, T. (2011). Acknowledging the complexity and diversity of historical and cultural ICT professional learning practices in schools. *Asia-Pacific Journal of Teacher Education, 39*(1), 47–63.
- Redecker, C. (2017). European framework for the digital competence of educators: DigCompEdu. In Y. Punie (Ed.), *EUR 28775 EN*. Publications Office of the European Union.
- Rikkerink, M., Verbeeten, H., Simons, R.-J., & Ritzen, H. (2015). A new model of educational innovation: Exploring the Nexus of organizational learning, distributed leadership, and digital technologies. *Journal of Educational Change, 17*, 223–249.
- Sanders, E. B. N., & Stappers, P. J. (2014). Probes, toolkits and prototypes: Three approaches to making in codesigning. *CoDesign, 10*(1), 5–14.
- Sanders, E. B.-N., & Stappers, P. J. (2012). *Convivial toolbox. Generative research for the front end of design*. BIS Publisher. <https://doi.org/10.1080/15710880701875068>

- Schön, D. (1983). *The reflective practitioner: How professionals think in action*. Maurice Temple Smith.
- Schön, D. (1987). *Educating the reflective practitioner*. Jossey-Bass.
- Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. In P. Murphy, K. Hall, & J. Soplér (Eds.), *Pedagogy and practice: Culture and identities* (pp. 75–84). Sage.
- van der Puil, C., Andriessen, J., & Kanselaar, G. (2004). Exploring relational regulation in computer mediated (collaborative) learning interaction: A developmental perspective. *Cyberpsychology & Behavior*, 7(2), 183–195.
- Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge University Press.
- Ørngreen, R., & Levinsen, K. (2017). Workshops as a research methodology. *The Electronic Journal of e-Learning*, 15(1), 70–81.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 8

Interprofessional Dialogue and the Importance of Contextualising Children's Participation: A Collaboration Between Different Disciplines Around New Technology



Pernilla Lagerlöf

Abstract The MIROR Project (2010–2013) was a large-scale international research project financed by the EU, involving various researchers from six countries. It dealt with the development of an adaptive system (artificial intelligence, AI) for music learning and teaching in the context of early childhood music education. The project was based on a spiral design approach, involving coupled interactions between the technical partners and the research partners (from the disciplines of psychology and pedagogy/education). It raised methodological challenges concerning how the experiments and technology were designed, as they did not relate to Swedish pre-school tradition, which will serve here as the contextualised case from which more general issues will be discussed. Different ethical issues were also faced in regard to how the research was planned, and stemming from the fact that there were commercial interests involved.

Keywords Interdisciplinary research · Commercial interests · Methodological challenges · Contextualising · Children's participation

Introduction

Today, children live in a wide world and begin establishing numerous relationships already in their early years, for instance, through participation in preschool activities. Since it is in relation to particular (cultural) contexts that the child acts

P. Lagerlöf (✉)
University of Gothenburg, Gothenburg, Sweden
e-mail: pernilla.lagerlof@gu.se

© The Author(s) 2023
C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_8

competently and resiliently, it is important to study children's everyday actions and interactions with others in their life. In order to study an activity from the child's perspective or, alternatively phrased, from a participant's perspective, it is a prerequisite. This means seeing the participants as research subjects rather than research objects, as actors rather than informants, and as social beings rather than isolated individuals (cf. Sommer et al., 2010). As Pramling and Säljö (2015) argue, when doing research and attempting to adopt a child perspective, it is important to realise that children do not act in a vacuum. For instance, they are constantly seeking to adapt to adult initiatives. van Oers (1998) called this process contextualising, defining it as 'an intellectual activity by itself, embedded in a current sociocultural activity' (p. 482). Even though there might be issues that are normally seen as features of 'broader context', the meaning of action always needs to be understood with regard to the situation in which the child interacts.

This chapter highlights the importance of contextualising children's participation in research and of seeing children as research subjects. Having a research interest in studying children's perspectives may be challenging when participating in a large-scale, interdisciplinary EU-funded project with commercial actors. This is what this chapter aims to illustrate.

Recent years have seen a great focus on commencing large-scale, international, interdisciplinary research, emphasised and encouraged not least by the EU commission. A concrete example is Horizon 2020, EU's most comprehensive research and development programme innovation thus far, with nearly 80 billion EUR available to be applied for during the period 2014–2020. Horizon 2020 had the support of Europe's leaders and the European Parliament members, who agreed that investments in research and innovation are crucial for Europe's future. Research grants from the EU under previous framework programmes have brought researchers and industry actors together, from both the EU and other parts of the world, to find solutions to a number of problems (https://ec.europa.eu/info/strategy/research-and-innovation_en). This constitutes a strong incitement to apply for such funding, not least for commercial companies of educational technologies aiming to implement various technologies in preschools and schools.

The issue of implementing new technologies in educational practices has been studied from various perspectives for many years and 'has been shown to be a trying mission' (Lantz-Andersson, 2009, p. 15; cf. Crook, 1996; Latchem, 2014). One reason for this lies in the different views on children as research objects and in different assumptions held about learning. Research designs are often experimental, and the assumptions primarily stem from an individual psychological or behaviourist view of learning (Lagerlöf, 2016). For instance, Voogt and Knezek (2008) state that, although experimental (or quasi-experimental) research designs are appropriate for studying the potential of specific technology applications under controlled situations, it is not easy to transfer findings from such research designs to the reality of the classroom, and thus other research designs are needed to take account of the complexities of the classroom. Where there are failings and shortcomings in implementing educational technology theory or principles, this is largely not due to any

inadequacies in the tools but rather to too little attention being paid to the pedagogical, organisational, cultural, and other factors that merge in institutional work and that are decisive for what fails, what works, and what successfully transfers into other contexts. Selwyn with colleagues (2020) also discuss different concerns regarding implementing educational technologies in schools, as business companies tend to influence and shape education decision-making and primarily work to create a demand for their products, rather than responding to 'ideals of public education' (p. 3). This has implications for practices-developing research, as the importance of teachers' requests easily comes to be subordinated to the technologists' willingness to market their products.

The case presented in this chapter will illustrate and problematise these kinds of encounters; that is, the challenges that may arise when research is conducted in similar ways in different countries with different traditions in early childhood education and care (ECEC) settings, here when using an experimental protocol designed by technical partners with no experience of educational approaches. More specifically, the methodological challenges discussed in this chapter are the following:

1. Demands from the technological partners that the same experimental research be conducted in four different countries, despite different kinds of early childhood education systems.
2. Tension created between the argumentation for designing a technology to be beneficial in early childhood music education while not allowing the teachers to be part of the research process.
3. The fact that the design had to be rigid to be able to 'prove' something that supported the commercial framing.
4. The challenges of trying out, along with children in early childhood education (in a so-called natural setting), a prototype that needed a great deal of devices and technical support in order to work.
5. The ethical dilemma that emerged because the experimental situation differed fundamentally from what the children were familiar with from their ordinary Swedish preschool education.

This chapter, written as a narrative from an educational researcher's point of view, will present the background and procedures of the first part of the project used as an example. The example will highlight the challenges that arose in the interprofessional dialogue between the partners from different disciplines and countries and with different traditions of early childhood education. The tension between the views regarding the importance of contextualising children's participation in research and the consequences of the technological partners' commercial interests will be clarified. Finally, there will be a discussion of the lessons learned from participating in the project, and what implications the experience might have on conducting practices-developing research involving digital technologies, in which children participate.

The Project Example of Implementing a Music Technology in Early Childhood Education

The example presented here is from a large-scale and interdisciplinary EU-funded project called Musical Interaction Relying on Reflexion (MIROR, <http://www.mirorproject.eu>). The project, conducted during the period 2010–2013, consisted of pedagogical/educational and psychological researchers from five universities in Europe, as well as two commercial companies functioning as technological partners. The primary aim of the project was to develop a music technology that would be beneficial in early childhood music education. The project was based on a spiral design approach, which involved the technological partners developing the prototype for the technology and the psychological and pedagogical researchers conducting empirical research on its use in early childhood education and care (ECEC). It was organised around workshops every half year, at which the partners met to discuss their experiences with the intention to establish interprofessional dialogue (Table 8.1). Empirical research and further technology development took place between these workshops.

Table 8.1 Screenshot of descriptions of parts of the planned workshops^a

Milestone name	Lead beneficiary number	Delivery date from Annex 1	Comments
			User requirement. Set-up of activities.
Workshop n. 2	5	7	Presentation of prototyping implementation (MIROR Improvisation–first version D4.1/1) and plan the experiments on MIROR Improvisation (Task 5.1)
Workshop n. 3	3	13	Presentation of prototyping implementation of MIROR-Composition (first version, D4.2/1), and Body Gesture (first version, D4.3/1) and plan the experiments on Composition and Body Gesture (Task 5.2 and
Workshop n. 4	6	20	User requirement: Discussing and assessing the experimental protocols results on MIROR Improvisation-Composition-Body Gesture (D5) and how to implement them in the MIROR platform
Workshop n. 5	7	25	Presentation of prototyping implementation of MIROR second version (D4.1/2, D4.2/2, D4.4/2) and plan the pedagogical testing (Tasks 6.1, 6.2, 6.3).
Workshop n. 6	1	31	User requirement: Discussing and assessing the results of pedagogical experiments (D6.1) and implementation of the interface phase

^aThe first months of the project (September 2010–March 2011) were dedicated to preparing the first experimental design based on the DoW. All partners participated in discussing the first experimental design, notably during the kickoff meeting (Bologna, September 2010), the first workshop in Paris (November), the extraordinary meeting in London (February), and the second workshop in Gothenburg (March).

The technology consisted of a computer program that was connected to a keyboard/synthesiser. The reflexive interaction paradigm was based on the idea of letting users manipulate the so-called virtual copies of themselves, through specifically designed machine-learning software. The music technology was hence intended to adapt to the musical style and musical language of the person interacting with and utilising the technology. It was presumed that this would result in the creation of a dialogue between player and machine, with the latter providing feedback by introducing variation and serving as a musical mirror. It had the purpose of indirectly teaching music processes, particularly improvisation (Addressi & Pachet, 2005).

The empirical research was designed in an experimental way, with the children using the technology in ECE settings such as preschools, the first years of primary schools, and after-school centres in Italy, Greece, England, and Sweden. The psycho-pedagogical partners (i.e. the psychological and pedagogical/educational researchers) were to conduct experiments in the light of early childhood music education to study and evaluate the interaction between children and machine and the creative music processes expected to be produced through this. In spring 2011, the psycho-pedagogical partners conducted psychological case study experiments following a detailed protocol, according to which:

- The teacher/experiment leader must interfere as little as possible to enable the child to interact with the technology alone.
- The children, aged 4 and 8 years, will play the keyboard connected to *Mirror Impro* for three sessions each.

As these were psychological experiments, they were mostly concerned with the ways in which the prototype would promote specific cognitive abilities or states of mind (e.g. flow) in the child. This was why the experiments required that the teacher/experiment leader interfere as little as possible, enabling the child to interact with the technology alone. Another reason for the detailed protocol on how the experiments were to be performed was, as with any experiment, to ensure that they were conducted in the same way in all participating settings and countries, in order to make it possible to compare the results.

The prototype proved to be complicated to run in the preschool setting. The technology consisted of several devices: a computer, a synthesiser, a speaker, and many cords that had to be connected properly. The software that was under development was not particularly user-friendly, and the experiment leaders needed a great deal of technical support. It was thus a complex mission to achieve entry into the settings, detracting a great deal from the everyday activities when the researchers had to set up all the required equipment and the ECEC teachers had to save a whole room for the experiments. The ordinary preschool and after-school teachers were not present at the sessions, as the children, according to the original idea of the overarching project, were to interact individually with the technology. In addition, since the technology required so much knowledge in how it should be handled, it was not reasonable to ask the ordinary preschool staff to be involved in, or carry out, the experiments. For this reason, the researchers took on the role of teacher in these sessions and encouraged the children to try the system.

In this way, this research case differs substantially from the other examples in the present book (Wallestedt et al., [this volume](#)). It was not designed at the request of the preschools, and the ordinary teachers were not at all involved in the process, other than giving the researchers access and providing participants – that is, children – of appropriate ages for the experiment. As the researchers who acted as experiment leaders have an education, and have worked, as teachers, they were familiar with both the traditions of the setting and the role of the teacher at these institutions. I myself have worked as a preschool teacher at the preschool where some of the experiments with the music technology were conducted and therefore knew both the staff and the families, having taught many of the participating children's older siblings. Because the researchers had already worked with the preschool and after-school centre in other studies, we had established relationships and trust among the teachers, parents, and children.

At an early stage of the project, a number of tensions emerged in the interprofessional dialogue; that is, between the partners, foremost the pedagogical/educational on the one hand and the technological and psychological partners on the other. Even if the project is described as based on a spiral design approach, involving coupled interactions between the technical and psycho-pedagogical partners, it appeared that the rationale for how the initial phase of the project was planned to be performed had been decided beforehand by the technological and psychological partners. The studies proposed by the multidisciplinary project MIROR proved complicated when viewed from the tradition of pedagogical/educational research.

Studying Children Interacting with the Music Technology from a Pedagogical Perspective

It became evident that the children from the Swedish preschool reacted somewhat differently to what has been reported in previous studies conducted in a similar way in Italy (Addessi & Pachet, 2005). Instead of showing excitement when interacting with the system by themselves, the Swedish children continuously oriented towards, and tried to get the attention of, the adult. The children who showed enthusiasm at the sessions did so in regard to the adult rather than the technology, as they (in vain) tried to establish eye contact with the adult. They asked questions and wanted to communicate about what they were exploring while playing the instrument. As the experiment leader was instructed to turn her/his back to the children and pretend to be busy with paperwork, the task was perceived as contrary to the preschool teacher's ordinary role, and the situation was considered strange, compared to how activities are usually performed in Swedish preschool. Thus, it was contrary to what all children and teachers are used to in the setting of Swedish preschool, and not ethically defensible. It also became obvious that most of the children lost interest in participating in the experiment situations when they did not perceive the affirmation they sought (Wallerstedt & Lagerlöf, 2011; Lagerlöf, 2016).

As pedagogical partners, we argued that the experiences children have of music in early years education are related to their own decisions and their collaboration

with their peers (and teachers). For example, we have to be sensitive to children's own choices and willingness to participate, and it may be difficult to engage someone to do something they have never done before, particularly if they have to do it alone without a friend at their side. We proposed that studies of the technology in an authentic ECEC setting in Sweden would mean activities in which children could explore the technology with their peers and therefore decided that a different kind of study was needed to investigate the use of the technology in Swedish ECEC. As an 'extracurricular' activity, those of us on the team from the University of Gothenburg therefore also recorded other children (with their parents' consent) at the same preschool and after-school centre and conducted sessions with pairs of children together with a teacher, interacting with and in relation to the system. The participants were about 6 years old. In trying this alternative approach to the overarching project's protocol, we wanted to study children interacting more freely with the technology, friends, and an adult (Lagerlöf, 2015, 2016; Lagerlöf et al., 2013, 2014; Lagerlöf & Peterson, 2018). The basic rationale for this idea was a desire to let the children take part together rather than being tested individually, and with an adult (teacher) as a partner, communicating and interacting with the children and the technology. The adults' engagement was of a spontaneous and informal character and did not involve planned teaching situations. Conducting and studying these extracurricular activities arguably increased the study's ecological validity (Crook, 1996; Suthers, 2006) and thus also made the knowledge that was generated useful to teachers as well, rather than only the research community.

In analysing the video documentation, it was clear that the children who participated in these sessions contributed their ideas, and they were primarily the ones who decided the way in which they participated and how much they wanted to speak and otherwise act, in relation to how the activities unfolded.

Research Considering Contextualised Childhoods vs. the Individual Universal Child

Societies both constrain and afford individuals' actions. On an overarching level, one could say that children live in childhoods in which the social, economic, cultural, and political contexts intersect and have consequences for their lives, including informing how adults as significant others relate to them. This premise suggests that, on the one hand, children in a general sense growing up in the same context may have much in common compared to children growing up in another context, for example, another country with a different way of organising ECEC practices. On the other hand, the participants in the studies presented above (Lagerlöf, 2016) may all be members of Swedish ECEC and have access to the same musical choices but, even then, do not necessarily have the same experiences. Childhoods are thus understood as varied and contextual phenomena. With such an approach, children are studied here-and-now, with attention to how they are engaged in making sense in and of the situation in interaction with their surroundings. This has important implications for studying children. Particularly, when conducting transnational and

interdisciplinary research, it is important that variations in educational and sociocultural contexts between the different locations be taken into account.

A reason why the studies conducted in Sweden differed from previous studies with the technology, conducted in a similar way in Italy (Addressi & Pachet, 2005), may involve differences in ECEC approaches and systems as well as how children are socialised through participating in them. If children are used to interacting by themselves with no supporting teacher at their side, they might react differently compared to Swedish children. In Sweden, when performing activities they are not familiar with, children usually interact with peers and teachers. Another reason why the studies varied was the focus of analysis. If one has an individual psychological view of the universal child developing through exploring by her/himself, it might be possible to analyse the ways in which the prototype would promote specific cognitive abilities or states (e.g. flow) in the child. The research team from the University of Gothenburg instead argued for a sociocultural perspective. This affords a nuanced interpretation of young children using digital technology in ECEC settings, as the activities are studied *in situ*. Instead of focusing on what cognitive abilities the prototype might bring about in the child, we were interested in studying ‘What is the use of technology in educational settings actually like?’ (Selwyn, 2010, p. 70), that is, how the children interact with and around the music technology (Lagerlöf, 2016). The argumentation concerning the importance of contextualising children’s participation in research ‘highlights the need to analyse how participants, metaphorically speaking, weave together what they encounter in an activity with what they know or associate it with’ (Wallerstedt et al., 2022).

Although it was stated that the project was based on a spiral design and there was to be an interprofessional dialogue between the partners, the theoretical assumptions between the technological and pedagogical partners were so different that this made it difficult to come to an agreement. What we found when analysing the activities was that the children did not show enthusiasm when interacting with the prototype. This means that our studies did not align with the commercial framing; of course, the technology’s designers looked for evidence that confirmed success. The designers of the technology in focus in the example, have invested a great deal of effort in developing it and, of course, have a commercial interest in showing how useful it can be in early childhood education.

Implications for Doing Practices-Developing Research on Digital Technologies in ECE

Even if large-scale, international, interdisciplinary research, emphasised and encouraged not least by the EU commission, is beneficial in many ways, it also presents challenges when one is commencing practices-developing research. In this chapter, experiences from participating in a large-scale and interdisciplinary EU-funded project have been illustrated and discussed. The challenges were

evident, as the research has been conducted in similar ways in different countries with different ECEC traditions, using an experimental protocol designed by technical partners with no experience of early childhood educational approaches (or with pedagogical/educational as opposed to developmental psychological ways of conducting research). As mentioned, the idea of developing work in educational institutions through novel technologies is not a new idea. As Latchem (2014) writes, 'The concept of educational technology as a means of addressing the technical, managerial and institutional complexities of educational change as a whole began to coalesce in the 1960s and 1970s' (p. 4). However, in the half century since, what lessons have been learnt? Selwyn et al. (2020) discuss hopes and concerns for educational technologies in the future, and although they argue that commercial contribution is not inherently wrong, they claim that there is a need to ask critical questions in relation to it:

For example, should major 'big tech' corporations continue to exercise 'soft power' in influencing and shaping education decision-making, while all the time profiting from the decisions being made? How might we better ensure that commercial actors respond primarily to the ideals of public education rather than working to create demand for their products? How can educators be supported in maintaining their role in guiding and leading the development of our youngest members of society? What counter-narratives can be developed against the prevalent forms of high-tech behaviourism that companies are promoting through the development of data-driven personalised learning systems? Critical EdTech research has a key role to play in supporting educational communities to confront the challenge of preserving the past while adapting to the future. (p. 3).

In commencing practices-developing research, one of the necessary aspects is hence that the teachers maintain their role in the ECEC setting and do not let the commercial actors' interests shape the educational decision-making. These tools, like other novel tools (digital or otherwise) need to be recontextualised in ECEC; how to do this constitutes one important challenge for researchers – in collaboration with ECEC personnel – to take on when doing this kind of research. In an action research project, Willermark and Pareto (2020) studied participation work within a school development project in a Nordic elementary school using virtual classrooms. They explore 'how and why boundaries can play a role in computer-supported collaborative teaching and stimulate a transformation towards digitalized teaching practices' (p. 743). In the study, they found that the composition of boundaries of a technological, organisational, and cultural nature operated within and constituted a resource for the teachers' learning. As Willermark and Pareto (2020) further argue, boundaries imply conflict and frustration, but in a reflective practice and through negotiations this may lead to a transformation of work practices. In the example presented in this chapter, the boundaries we faced were not regarded or used as a resource in the interprofessional dialogue. The ordinary teachers were not at all involved in the studies, as the technology itself was intended to serve as an advanced cognitive tutor (Ferrari & Addressi, 2014). Although we as researchers conducted extracurricular activities during which we studied the children interacting more freely with the technology, friends, and an adult (Lagerlöf, 2016; Lagerlöf, 2015; Lagerlöf et al., 2013, 2014; Lagerlöf & Peterson, 2018), the teachers' perspectives were not

considered in the project. In participatory research, these are important aspects to problematise; for example, who is participating, in what ways, and why were the teachers' perspectives not given relevance?

This chapter has emphasised the importance of studying participants (in this case the participating children) as research subjects and as actors, rather than objects and informants. When conducting research in authentic ECEC settings, no matter if it is the child's or the teacher's perspective or how these different perspectives come into play in responsive actions that is analytically attended to, it is important that socio-cultural contexts be taken into account. As Wallerstedt with colleagues (2022) argue, context not only involves describing the setting as such but is also an analytical concept. When discussing participation in what has been referred in this chapter to as practices-developing research, teachers' (and perhaps researchers') participation is almost exclusively focused on. In contrast, in this chapter, I have focused on the matter of children's participation in such research, discussing the importance of contextualisation. Involving working not only with partners from research and ECEC settings but also with professionals representing different disciplinary traditions (such as technical partners), the research discussed here implies that there is no one-size-fits-all model that can simply be implemented in a straightforward manner to enable easy comparison across settings in various cultural contexts; rather, the implementation and the tools used need to be recontextualised in order to be able to say something productively about tool use in the investigated setting. Rather than a simple comparison, research in which the tool-in-use is studied recontextualised in the diverse contexts being investigated could provide contrasting cases, illuminating differences critical to how ECEC settings are organised, as well as commonalities that emerge despite these differences.

References

- Addressi, A. R., & Pachet, F. (2005). Experiments with a musical machine: Musical style replication in 3 to 5 year old children. *British Journal of Music Education*, 22(1), 21–46.
- Crook, C. (1996). *Computers and the collaborative experience of learning*. Routledge.
- Ferrari, L., & Addressi, A. R. (2014). A new way to play music together: The Continuator in the classroom. *International Journal of Music Education*, 32(2), 171–184.
- Lagerlöf, P. (2015). Playing in between: Three preschoolers' musical make-believe playing in the gap of a technological breakdown. *Early Years*, 35(3), 303–316.
- Lagerlöf, P. (2016). *Musical play: Children interacting with and around music technology*. PhD thesis, University of Gothenburg, Sweden.
- Lagerlöf, P., & Peterson, L. (2018). Preschool children's play and alignments in a bracketed framing of a music-technological breakdown. *Research on Children and Social Interaction*, 2(1), 120–142.
- Lagerlöf, P., Wallerstedt, C., & Pramling, N. (2013). Engaging children's participation in and around a new music technology through playful framing. *International Journal of Early Years Education*, 21(4), 325–335.
- Lagerlöf, P., Wallerstedt, C., & Pramling, N. (2014). Playing, new music technology, and the struggle with achieving intersubjectivity. *Journal of Music, Technology & Education*, 7(2), 199–216.

- Lantz-Andersson, A. (2009). *Framing in educational practices: Learning activity, digital technology and the logic of situated action*. PhD Diss. Acta Universitatis Gothoburgensis.
- Latchem, C. (2014). BJET Editorial: Opening up the educational technology research agenda. *British Journal of Educational Technology*, 45(1), 3–11.
- Selwyn, N. (2010). Looking beyond learning: Notes towards the critical study of educational technology. *Journal of Computer Assisted Learning*, 26(1), 65–73.
- Selwyn, N., Hillman, T., Eynon, R., Ferreira, G., Knox, J., Macgilchrist, F., & Sancho-Gil, J. M. (2020). What's next for Ed-Tech? Critical hopes and concerns for the 2020s. *Learning, Media and Technology*, 45(1), 1–6. <https://doi.org/10.1080/17439884.2020.1694945>
- Suthers, D. D. (2006). Technology affordances for intersubjective meaning making: A research agenda for CSCL. *Computer-Supported Collaborative Learning*, 1(3), 315–337.
- van Oers, B. (1998). From context to contextualizing. *Learning and Instruction*, 8(6), 473–488.
- Pramling, N., & Säljö, R. (2015). The clinical interview: The child as a partner in conversations versus the child as an object of research. In S. Robson & S. Flannery Quinn (Eds.), *The Routledge International Handbook of Young Children's Thinking and Understanding* (pp. 87–95). Routledge.
- Sommer, D., Pramling Samuelsson, I., & Hundeide, K. (2010). *Child perspectives and children's perspectives in theory and practice*. Springer.
- Voogt, J., & Knezek, G. (2008). IT in primary and secondary education: emerging issues. In J. Voogt & G. Knezek (Eds.), *International handbook of information technology in primary and secondary education* (Vol. 1, pp. 117–132). Springer.
- Wallestedt, C., Brooks, E., Ødegaard, E. E., & Pramling, N. (Eds.). (this volume). *Methodology for research with early childhood education and care professionals*. Springer.
- Wallerstedt, C., Kultti, A., Lagerlöf, P., Lantz-Andersson, A., Lundin, M., Nilsen, M., Peterson, L., Skantz-Åberg, E., & Pramling, N. (2022). Socioculturally-informed Interaction Analysis (SIA): Methodology and theoretical and empirical contributions of an emerging research program in early childhood education. *International Research in Early Childhood Education*, 12(1), 1–23.
- Wallerstedt, C., & Lagerlöf, P. (2011). Exploring turn-taking in children's interaction with a new music technology. *He Kupu*, 2(5), 20–31.
- Willermark, S., & Pareto, L. (2020). Unpacking the role of boundaries in Computer-Supported Collaborative Teaching. *Computer Supported Cooperative Work (CSCW)*, 29(6), 743–767.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 9

Mutuality in Collaboration: A Development Project for Teaching in Multilingual ECEC



Anne Kultti

Abstract The context of this chapter is a long-term collaboration within a development project for decreasing differences in young children's living conditions. The project aimed to take on this challenge through professional development about teaching and learning, as well as home-preschool collaboration, in multilingual preschool contexts. Participants were preschool teachers, preschool heads, and persons responsible for preschool education in a total of six municipalities, together with a researcher and a local region working for children's wellbeing. In this chapter, collaboration is seen as a dialogical activity between these actors. Experiences of conditions for and contributions of mutuality in a collaboration are reflected on and discussed from a researcher's perspective. A lesson learned involves the cruciality of practices of leading, in terms of organizing for ongoing professional development. This includes legitimizing the experiences of participating teachers and distributing leadership. These aspects are understood as adding to the ownership of participating teachers and contributing to the development of content.

Keywords Collaboration · Dialogue · Early childhood education · Ownership · Practices of leadership · Professional Development (PD)

A. Kultti (✉)
University of Gothenburg, Gothenburg, Sweden
e-mail: anne.kultti@ped.gu.se

© The Author(s) 2023
C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_9

Introduction: A Long-Term Collaboration

In this chapter, I will reflect upon mutuality in a collaboration for professional development (PD) within early childhood education and care (ECEC) from my perspective as a researcher within this field.¹ A development project, entitled *Children's Wellbeing and Learning: Focus on Multilingualism and Home-Preschool Collaboration in Preschool*, aimed to contribute to decreasing differences in the living conditions of young children through knowledge of and support for teaching and learning multilingually in preschool (Kultti et al., 2016; Kultti, 2021). The project was initiated and funded by the local region working for wellbeing, Region Västra Götaland,² and it was offered to municipalities in the region. The planning and carrying out of the project were grounded in research. Kirsch et al. (2020) have pointed out that there is a gap in research when it comes to multilingual teaching and learning in ECEC as content of PD. During a period of six years, four–six preschool teachers, the preschool heads, and (some) preschool education officers/people in charge of quality work in each municipality (a total of six) participated in the collaboration. Collaboration in the project is seen as a dialogical activity between the actors: not only preschool teachers and the researcher but also the stakeholders in the municipalities as well as the local region (cf. Lendahls Rosendahl & Rönnerman, 2006; Olin et al., 2021). The collaboration came to include mapping, in-service training, and follow-up (see Fig. 9.1).

Mapping, In-Service Training, Follow-Up

Training, reflection, and coaching have been shown to be useful and valuable tools in long-lasting PD (Kirsch et al., 2020). The project started with a mapping of the experiences and needs in the participating municipalities, in order to create mutuality through grounding the project in content of relevance to be developed in the participating municipalities (cf. Kirsch et al., 2020). This was done through a questionnaire: for preschool children aged 5 years as well as their teachers, their guardians, the preschool heads, and the leaders responsible for preschool education, in four municipalities with different characteristics of socio-economy and setup (Kultti et al., 2016). The questionnaires were developed together with, and tested by, some of the participants as well as preschool teachers and guardians outside the group. Based on the analysis of the results and discussions between the participants,

¹The role played by the researcher(s) in and establishing mutuality in collaboration (Olin et al., 2021) is not related to in the actual text. Yet, this delimitation is not to be understood as a sign of denying or diminishing the researcher's role in how mutuality in collaboration unfolds.

²Region Västra Götaland (VGR) is one of Sweden's popularly elected regions with responsibility for, among other things, healthcare and the provision of conditions for good public health (<https://www.vregion.se/en/about/>).

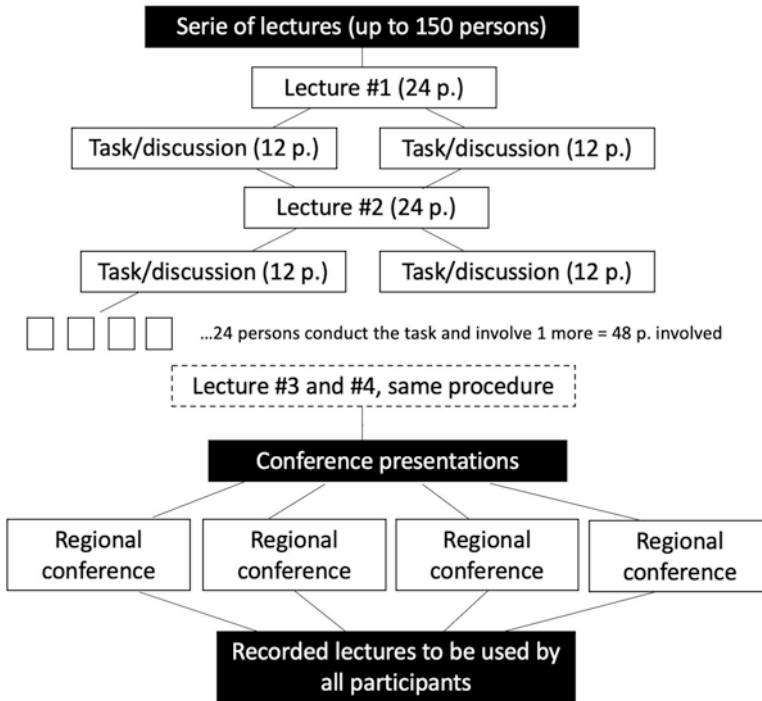


Fig. 9.1 Design of the in-service training

extensive in-service training was planned by a researcher and offered to preschool teachers in the six municipalities, of which five chose to participate (Kultti, 2021).

The in-service training held at the university included four lectures for a large number of staff from the preschools and coaching for 24 preschool teachers from the five municipalities. The specific aims of the coaching were (i) to increase theoretical knowledge of teaching and learning multilingually and (ii) to help participants practice these skills in teaching; (iii) to help participants develop skills for reviewing and analyzing their own approach to multilingual children’s learning; and (iv) to develop a dialogical approach to home-preschool collaboration. Support for disseminating and grounding the content in the municipalities included (i) a conference with all the participants, (ii) a regional meeting with the participants in each municipality, and (iii) two recorded lectures.

The researcher conducted a 2-year follow-up at the end of the in-service training (Kultti, 2021). The follow-up included an evaluation but mainly entailed further guidance of the teachers’ pedagogical work (cf. Kirsch et al., 2020), showing the positive effects of external support in PD, this time even more closely related to the practices of each preschool (see #2 later in the text). The researcher met with the

preschool teachers³ in each municipality twice a year for developing reading activities to support multilingual children's learning.

At the beginning of the follow-up, increased dialogue with guardians in the municipalities (one of the aims) was clearly evident. However, the aims of teaching with support for multilingual children's learning and metacommunication in reading activities were developed by only some of the teachers. This outcome is in line with the study by Kirsch et al. (2020), which showed that teachers' development of attitudes and knowledge in PD does not automatically lead to changed practices.

At the follow-up, it was evident that two of the municipalities were implementing and evolving the project content. At the same time, two municipalities were fading off (cf. Kirsch et al., 2020; see #3 later in this chapter). This opposite way of evolving the project content shed light on aspects of promoting preschool teachers' opportunities to become and be recognized as genuine contributors to mutual knowledge-building practices in collaboration, such as (i) the preconditions for PD in the preschool/municipality; (ii) the engagement of the leaders (preschool heads; leaders of ECEC/quality work) and the organization of the project participation; as well as (iii) the external support for PD. These aspects will be reflected on and discussed below as lessons learned.

Lessons Learned

The chapter content relates to the field of research on *professional learning communities* (PLC: *terminology* in O'Brian and Jones (2014) and Lendahls Rosendahl and Rönnerman (2006); *continuing professional development (CPD)* in Stoll et al. (2006); *models of CPD* in Kennedy (2014); *professional learning* in Boylan et al. (2018); *PD in a multilingual ECEC* in Kirsch et al. (2020); and *practices of leading* in Grootenboer et al. (2015)). The present text is directed towards an aspect within this field of research: collaboration. A characteristic of collaboration in the preschool context, for example, in a development project, is two professions (preschool teachers and researchers) coming together (Lendahls Rosendahl & Rönnerman, 2005) within a frame, which can (also) be understood as the one reviewing/evaluating the work of the other, aiming to bring about improvement (cf. Gustavsson & Löfving, 2020; Liljenberg & Nyman Alm, 2020). Even though it helps in understanding the development of one's own practice in positive terms, a collaboration grounded in a need to develop someone's profession involves unequal relations and power aspects. For example, in a study of practice-based research (Olin, Almqvist & Hamza, 2021), these aspects are analyzed using recognition as a concept for understanding the other's and one's own contributions as equally important.

³Including teachers who became involved in the work during the process but had not participated in the coaching at the university.

1. Teacher Ownership Through Dialogue and Organization for PD

A dialogue between participants has been shown to be essential for mutuality in projects including teachers and researchers (Gustavsson & Löfving, 2020; Lendahls Rosendahl & Rönnerman, 2005; Stoll et al., 2006). Yet, the character of dialogue is not to be taken for granted. For example, depending on the project initiator and how the project is grounded in the participating preschools (cf. top-down/bottom-up), dialogues might have different meanings and functions for the various participants. Another aspect that is important but not unproblematic is the leadership role in PD (Grootenboer et al., 2015; Lendahls Rosendahl & Rönnerman, 2005). *Without* the preschool head involved, teachers are left alone in the actual project and/or in PD (and the opportunities for preschool improvement can be diminished). However, *with* the preschool head involved, teachers are expected to reflect on possible shortcomings in their work and/or lacking competencies in front of their superior (e.g., the preschool head), or the participation can be experienced as controlled. I will exemplify this with my experiences based on the collaboration described here.

How to support the application or integration of the content of the in-service training in the preschool practices, while also disseminating it to other preschools within the municipality, was considered at the beginning of the project. Concretely, each municipality was asked to nominate a coordinator with organizational responsibility. Another effort entailed encouraging the preschool heads to involve at least one more teacher already during the coaching phase. This was done not only in case the original teacher later became unable to participate but also to enable a shared responsibility for the integration. In addition, the expectation that the preschool heads would disseminate and establish the content was repeatedly communicated. Thereby, the preschool heads were invited to participate in the lectures within the coaching as well as the two conferences: to share the ideas about dissemination in the municipality with each other and to discuss the content in relation to the actual municipality – where they were in their process and what their needs and challenges were. When the collaboration was evaluated at the end of the follow-up, there was an evident connection between these initial ideas and the teachers' reflections. For example, the teachers expressed that it was important for the staff to know about the project and its aim(s); that the preschool head legitimated the teachers' participation in the project; and that they received support for the collegial learning for which they had become leaders (see #3 later in this chapter). In other words, the importance of the preschool head when it came to dialogue and, in PD, strengthening the teachers' ownership (cf. Hyppönen & Melin, 2020) was noted by the participants, in line with previous research⁴ (Grootenboer et al., 2015; Lendahls Rosendahl & Rönnerman, 2005).

A lesson learned was that a shared understanding of project content and organization, and thereby mutuality and ownership among teachers, cannot be taken for granted. For example, even if all actors agree on the need for a coordinator in a project, this might not come to pass for different reasons. Therefore, instead of

⁴Most of the research is conducted in comprehensive schooling.

(only) encouraging participants in this regard, an explicit agreement involving the responsibility for supporting, integrating, and disseminating emerged as important. In addition, as there will likely be changes within the leadership in a long-term collaboration, there is a need for at least one person corresponding to each level of leadership (cf. systemic leading, principal leading, and middle leading, in the terms used by Grootenboer et al., 2015): in our case, a preschool education officer in the municipality, a person with a mandate to work with development/quality issues in preschool (cf. a coordinator), and a preschool head took on these roles.

2. Teacher Ownership Through External Support for PD

PD in preschool involving external agents, such as a researcher, can be understood as someone supplying something to a receiver (Lendahls Rosendahl & Rönnerman, 2005). Neither a perspective seeing “the new” as contributing and evolving nor one that sees it as colliding and defending, will necessarily contribute mutuality in collaboration, based on the experience of the project discussed here. Instead, activities closely connected to the participants’ practices as well as educational research seemed to create a shared focus in the discussions between the teachers from different units/preschools and the researcher. This can be illustrated by the following. The observations at the beginning of the follow-up showed that the content of the in-service training – metalinguistic awareness – was not appropriated as part of the teaching in reading activities. Therefore, the content was (again) focused on through coaching during the follow-up. This time the discussions were grounded in the shared observations of reading activities. This kind of close relationship with the teachers’ own teaching practices (see Lendahls Rosendahl & Rönnerman, 2005, regarding the importance of collaboration in closely related practice) contributed to creating a common ground for the discussions. It was followed by changes expressed through the observations and dialogues, such as (i) languages as assets, fun, and enriching; (ii) developing teaching and knowledge of language development; (iii) bilingual communication and dialogue with guardians; (iv) cooperation with mother tongue teachers; and (v) awareness in the use of digital tools (teaching) in multilingual reading activities. The activities and discussions opened up for not only reproducing something but also going beyond the in-service training, thus implying teachers’ ownership of the knowledge generated. In other words, the insights and knowledge that were developed, and the teaching activities that were elaborated, became visible through the facilitation of PD externally, relating it closely to the teachers’ own practices.

A change in approach and/or practice takes time and effort (Lendahls Rosendahl & Rönnerman, 2005; Stoll et al., 2006), indicating the importance of PD of relevance to the practice at hand. A continuous process (instead of independent activities), understood to support mutuality in collaboration through the time aspect – a long-term process – for people to know each other and their practice, to develop understanding of the process/content at hand, and to handle the content in several ways, emerged as useful and critical in the project. Expressed in other words, external support for PD integrated in the actual practice is interpreted as opening up for teacher ownership: intersubjectivity and meaningfulness, as well as confidence and

trust in mutuality. This in turn involved equalizing discussions in terms of everyone contributing from and with their own perspectives and experiences.

3. Teacher Ownership Through Internal Support for PD

According to the Swedish Schools Inspectorate (Skolinspektionen, 2018), external PD that includes only a small number of staff is not followed up by either colleagues or the preschool head. For the part of the project discussed here, PD was externally supported (in-service training and follow-up), through organized implementation of the content at hand as part of the everyday work in the preschools. That is, the external support occurred simultaneously with internal support/work in the preschools/municipalities where the project was integrated and elaborated (cf. teacher ownership). As an example, the preschool(s) in the two municipalities that actively participated until the end of the follow-up are characterized by a task- and process-driven organisation, to phrase it in Nehez et al.'s terms (2017):

Certain generative mechanisms were found to have important impact on the emergence and growth of task and process driven organisations. The generative mechanisms are: staff opens for visibility, cooperation across borders, improved deliberative structure of meetings, better coupling between leadership and staff, getting staff ownership from many tasks and wide participation in activities, more systematic developmental processes, improvements visible for children and students, in-take of news from other sites and research. (Nehez et al., 2017, p. 6)

At the organizations in the two municipalities, the teachers did not separate the projects they were involved in but rather referred to them, and took them on, as integrated aspects of their work. Another reflection at these organizations was that PD seemed to open up for the staff to develop knowledge of the content in the project. In saying this, I am arguing that legitimacy and intersubjectivity are not guaranteed by the fact that the entire staff participate in each and every part of PD but rather the opposite and that it is necessary to share the responsibility for the PD through both external (such as lectures) and internal (such as collegial learning – see below) efforts. In addition, these preschools were shown to have an interest in research-based PD after the follow-up, for example, through participating in doctoral projects and practice-developing research.

In the two municipalities where the project content was elaborated, the PD was distributed through *collegial learning* (Grootenboer et al., 2015). In other words, collegial learning presupposes distributed leadership through preschool teachers having the role of middle leaders. As a middle leader, a teacher has an acknowledged leading position next to their teaching commitment. It is argued here that this type of position “‘bridg[ing]” both the work of institutional leadership/management and the development of classroom teachers’ (Grootenboer et al., 2015, p. 525) contributes to the understandings of *practices of leading*. To give an example, the terms used for the participating teachers were *learning/process leaders* for collegial learning. When describing their tasks and responsibilities, the teachers expressed legitimacy and intersubjectivity for participating in the project and implementing the content. In addition, in their teaching as well as their guidance of their colleagues’ work, they had to put effort into understanding and implementing the content of the

in-service training. In this way they became owners of the content, which was expressed, for example, through discussing issues they considered and experienced in their practice (as opposed to expectations regarding the researcher's input). Thereby, ownership can (also) come to entail balancing power aspects in the collaboration between actors in different positions.

Closing Thoughts

Mutuality in collaboration as an issue of practices of leading, including systematic and principal leading as well as collegial learning and preschool teachers as middle leaders (cf. Grootenboer et al., 2015), is based on the experiences gained through a 6-year collaboration. Practices of leading within the collaboration are interpreted as having contributed not only to ownership among the participating teachers but also to the continuity and evolvement of the content at hand. Evolving knowledge of practices of leading for mutuality in ongoing PD in ECEC is regarded as a field for further research.

References

- Boylan, M., Coldwell, M., Maxwell, B., & Jordan, J. (2018). Rethinking models of professional learning as tools: A conceptual analysis to inform research and practice. *Professional Development in Education*, 44(2), 1–20. <https://doi.org/10.1080/19415257.2017.1306789>
- Grootenboer, P., Edwards-Groves, C., & Rönnerman, K. (2015). Leading practice development: Voices from the middle. *Professional Development in Education*, 41(3), 508–526.
- Gustavsson, S., & Löfving, C. (2020). Att identifiera och hantera spänningsfält som handledare i förbättringsarbete. In A. Olin & Å. Hirsh (Eds.), *Samverkan genom uppdrag; Lärdomar för universitetet och samverkande partners i utbildnings- och forskningsuppdrag* (pp. 32–52). RIPS: Rapporter från institutionen för pedagogik och specialpedagogik.
- Hyppönen, T., & Melin, P. (2020). Med reflektionen som motor – att stärka det distribuerade ledarskapet på en skola. In A. Olin & Å. Hirsh (Eds.) *Samverkan genom uppdrag; Lärdomar för universitetet och samverkande partners i utbildnings- och forskningsuppdrag* (pp. 56–76). RIPS: Rapporter från institutionen för pedagogik och specialpedagogik.
- Kennedy, A. (2014). Understanding continuing professional development: The need for theory to impact on policy and practice. *Professional Development in Education*, 40(5), 688–697. <https://doi.org/10.1080/19415257.2014.955122>
- Kirsch, C., Aleksić, G., Mortini, S., & Andersen, K. (2020). Developing multilingual practices in early childhood education through professional development in Luxembourg. *International Multilingual Research Journal*. <https://doi.org/10.1080/19313152.2020.1730023>
- Kultti, A. (2021). *Barns välbefinnade och lärande: fokus på flerspråkighet och samverkan i förskolan* (Slutrapport). Västra Götalandsregionen. <https://gup.ub.gu.se/file/208569>
- Kultti, A., Pramling Samuelsson, I., & Harju-Luukkainen, H. (2016). *Rapport av pilotstudien: Förskolan som resurs för barns välbefinnande och lärande*. https://gupea.ub.gu.se/bitstream/2077/42470/1/gupea_2077_42470_1.pdf
- Lendahl Rosendahl, B., & Rönnerman, K. (2005). Med fokus på handledning i skolors förändringsarbete. *Pedagogisk forskning i Sverige*, 10(1), 35–51.

- Lendahls Rosendahl, B., & Rönnerman, K. (2006). Facilitating school improvement: The problematic relationship between researchers and practitioners. *Journal of In-Service Education*, 32(4), 497–509.
- Liljenberg, M., & Nyman Alm, A. (2020). Att samverka i samverkan. In A. Olin & Å. Hirsh (Eds.), *Samverkan genom uppdrag; Lärdomar för universitetet och samverkande partners i utbildnings- och forskningsuppdrag* (pp. 10–28). RIPS: Rapporter från institutionen för pedagogik och specialpedagogik.
- Nehez, J., Gyllander Torkildsen, L., Lander, R., Olin, A., & Blossing, U. (2017). *På väg mot uppdrags- och processdrivna organisationer: Uppföljning av införandet av processledare i förskolor och skolor i Helsingborg*. University of Gothenburg. <http://hdl.handle.net/2077/52289>
- O'Brian, J., & Jones, K. (2014). Professional development in teacher education: European perspectives. *Professional Development in Education*, 37(5), 645–650. <https://doi.org/10.1080/19415257.2011.616108>
- Olin, A., Almqvist, J., & Hamza, K. (2021). To recognize oneself and others in teacher-researcher collaboration. *Educational Action Research*. <https://doi.org/10.1080/09650792.2021.1897949>
- Skolinspektionen. (2018). *Förskolans kvalitet och måluppfyllelse*. Skolinspektionen.
- Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional learning communities: A review of the literature. *Journal of Educational Change*, 7(4), 221–258. <https://doi.org/10.1007/s10833-006-0001-8>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Part III
Theoretical and Conceptual Discussions
and Tools

Chapter 10

The Importance of De-reifying Language in Research with Early Childhood Education and Care Professionals: A Critical Feature of Workshop Methodology



Niklas Pramling and Louise Peterson

Abstract A common observation at workshops in collaborative research between ECEC personnel and researchers is that the educational professionals express an expectation that the research partners should tell them what to do and how something is. This clashes with a foundational premise of research – that research entails generating new knowledge – and thus we cannot say beforehand how it is or what should more specifically be done by teachers. In this chapter, the discussion moves beyond this identified challenge, through theoretical analysis of the language used in interprofessional communication. It is argued that the linguistic process of transforming verbs into nouns (i.e., nominalisation) and its ensuing reification (making-into-things), recontextualised in relation to researcher-ECEC personnel collaboration, needs to be problematised through metacommunicating. This is critical in order to avoid constituting knowledge as objects existing beforehand to simply be transmitted from knower (researcher) to receiver (ECEC personnel). Such a view constitutes the latter group as lacking knowledge. In order to recognise different participating groups' contributions, more active and dynamic metaphors of knowledge – in this text, the notion of *knowledging* is suggested (cf. languaging and knowing) – are needed in order to promote mutual recognition and agency among participants, an issue at the heart of interprofessional collaborative work.

N. Pramling (✉) · L. Peterson
University of Gothenburg, Gothenburg, Sweden
e-mail: niklas.pramling@ped.gu.se

© The Author(s) 2023
C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_10

Introduction

The kind of research in which ECEC personnel (which can include preschool teachers but also other personnel such as development leaders and preschool heads) and researchers collaborate to conduct research has many different approaches, even different theoretical underpinnings. As will be explored further in this chapter, there are many methodological challenges in this kind of research, and there is a growing body of literature on them (see, e.g., Hanfstingl et al., 2019; Pramling Samuelsson & Pramling, 2013; Wallerstedt et al., [this volume](#), for more general discussions). But approaches in the research addressed in this volume also share some features. One common feature in many approaches is that it is taken for granted that the research method has great implications for the kind of knowledge the research generates. A common observation at workshops in collaborative research between ECEC personnel and researchers is that educational professionals express an expectation that the research partners should tell them what to do and how something is. This clashes with a foundational premise of research – that research entails generating new knowledge – and thus we cannot say beforehand how it is or what should more specifically be done by teachers. If the discussion of collaborative research between ECEC personnel and researchers is to be advanced, a better understanding of the challenges in workshop methodology needs to be identified. In this chapter, the discussion moves beyond this identified challenge, through theoretical analysis of the language used in interprofessional communication.

Identifying and Clarifying a Recurrent Challenge

In this text, we add to the emerging literature on research with educational professionals by analysing and theorising on how to take on a frequently observed occurrence: participants' different expectations regarding what participation in such projects entails in terms of learning and knowledge-building (John-Steiner et al., 1998). These different expectations can readily be observed at the workshop, which can take different forms but which will be integral to any researcher-educational personnel collaborative project.

The workshop is a nexus in researcher-educational personnel cooperative research projects, as it is the activity at which the participating groups interact and concretely carry out collaborative work. Being an activity characterised by interprofessional interaction, issues concerning language, communication, and metacommunication inevitably come to the fore. These may therefore require analytical consideration and theorisation in order to further develop the methodology of research with educational institutions/professionals, which could be referred to as *practice-near* or *practice-development research*. Here, we will highlight and

discuss some particular features of this kind that we have experienced in our projects with ECEC personnel.¹

A recurring observation at workshops is that participating personnel from ECEC institutions express that they want the researchers to say *what they should do*, and *how it is*. Some examples relevant to the project referred to here are ‘How should we teach in a way that doesn’t exclude play?’, ‘What does it mean for teaching to be responsive to play?’, ‘What is play?’, and ‘What is socially and culturally sustainable ECEC?’ These are all matters that this project aimed to contribute novel insight into, and could therefore not be clarified beforehand.² The expectation of such clarification clashes with the researcher taking the stance that in the nature of a research study – as distinct from simply a development project – generating new knowledge constitutes its *raison d’être*, and that if we already knew, there would be no point in conducting the study (the project).

Rather than simply observe *that* different *participants have different expectations*, we can analyse and conceptualise this recurring empirical observation in terms of patterns of languaging, communicating, and metacommunicating. This enables us to theorise a recurring feature of workshops: that there would be value in having tools for metacommunicating in these kinds of projects in order to coordinate participants’ perspectives and thus establish some degree of necessary intersubjectivity (Linell, 2014; Marková, 2003) regarding the preconditions for collaborative work (knowledging).

Nominalising and Reifying

A common action in speech is what is sometimes referred to as nominalisation, that is, turning a verb into a noun (Billig, 2008; Halliday & Martin, 1993; Pramling et al., 2019). This transformation is evident not only in everyday discourse but also in scientific vocabulary (Säljö, 2002). This phenomenon of language transformation

¹The research discussed here was funded by the Swedish Institute for Educational Research (Skolfi 2016/112), which is gratefully acknowledged.

²Meanwhile, some expectations from ECEC personnel regarding researchers telling them how it is may concern the state of the art of a research field. It is, of course, reasonable to expect researchers in the field to be able to clarify this. Of the examples given here, the question ‘What is play?’ could be construed as being of this kind. However, in the project we use here as the empirical foundation of our discussion, how to understand play (i.e. how to theoretically specify it conceptually) was actively avoided, in order to be open to play as multifaceted, and especially to be open to play as the participants’ concern (Pramling et al., 2019). The latter ambition led to conceptualise how it is possible to empirically access and make sense of what children (and teachers, if participating) perceive, as they clarify to each other, what they see *as* play and non-play. Hence, what can be expected to be clarified beforehand is contingent on what the topic of investigation and development is more specifically. This in itself is a matter that warrants metacommunicating when initiating a project of this kind.

is not new. In the specialised literature on the scientific vocabulary of psychology, in a classic introduction to this field of study Woodworth (1940) notes:

Instead of ‘memory’ we should properly say ‘remembering’ or ‘*O* remembers’; instead of ‘sensation’ we should say ‘seeing’, ‘hearing’, etc.; and instead of ‘emotion’ we should say some one feels eager or angry or afraid. But, like other sciences, psychology finds it convenient to transform its verbs into nouns. Then what happens? We forget that our nouns are merely substitutes for verbs, and start hunting for the *things* denoted by the nouns – for substances, forces, faculties – but no such things exist; there is only the individual engaged in these different activities. Intelligence, consciousness, the ‘unconscious’ belong with such terms as skill and speed. They are properly adverbs, the facts being that the individual acts intelligently, consciously, or unconsciously, skilfully, speedily. A safe rule, on encountering any abstract psychological noun, is to make it concrete by changing it into the corresponding verb or adverb. Much difficulty and unnecessary controversy can thus be avoided. (p. 18f., italics in original)

Nominalising – turning verbs into nouns – thus means *reifying* what are, in fact, processes or activities. Through this process of transformation, what is dynamic is made into a thing. Through reifying what we speak about we re-establish a particular discourse – theoretically speaking, ‘things ontologies’ (Shotter, 1993) – according to which what exists does so as things (Säljö, 2002).

Another influential scholar who has emphasised the importance of ‘de-reifying’ (Nachmanovitch, 2009, p. 13) scientific vocabulary is Gregory Bateson. In his classic *Steps to an Ecology of Mind* (originally published 1972, reissued in 2000), he argues that this is a common feature of communicating and that we are ordinarily not aware of it. This is due to communicative and psychological economy. ‘The economy’, he further argues, ‘consists precisely in *not* re-examining or rediscovering the premises of habit every time the habit is used’ (p. 274, italics in original). However, as he also notes, in order to develop new knowledge, it is critical to do so, that is, to re-examine and rediscover the premises of our communicative habits.

Why Nominalisation and Its Associated Reification Matter for Workshop Methodology

One consequence of reifying³ is that it hides or mystifies who is doing that which is referred to (cf. Billig, 2008). What has been transformed into a thing appears as if it speaks for and by itself. This is problematic for various reasons. One problem in the context (yet another example of reification) of the kind of research we intend to

³In passing, we can note that the very term ‘reification’ itself constitutes a case of reification, that is, transforming an activity – reifying it – into a noun. (Some other examples relevant to our discussion would be ‘language’ (instead of languaging), ‘communication’ (instead of ‘communicating’), ‘context’ (instead of ‘contextualising’), and ‘knowledge’ (rather than knowing or, as we propose using, ‘knowledging’).

contribute to the methodological discussion of here is that it is important to clarify who (e.g. which participating partner) says and in other ways does what in order to work together and to clarify different responsibilities and roles. Mystifying processes and activities into things that speak and do things by themselves thus also makes it impossible to analyse issues such as power hierarchies, since the world merely speaks for itself, as it were, rather than researchers and/or ECEC teachers or heads saying and doing this or that. Hence, there is a form of ethical problem with reification, we argue, as follows: ensuring that all participants have a voice and can contribute to evolving knowledging, we cannot hide who is doing the talking, arguing etc., which we severely risk doing if we use reified language at our workshops.

Reifying, for example, knowledge – which itself can be seen as a case of reification, which is why we (Wallerstedt et al., [this volume](#)) instead speak of knowledging – constitutes this as something that exists beforehand, as some kind of object. This view of knowledge is further harmonious with another figure of speech, in the form of a metaphor for communication, evident in everyday speech as well as in the specialised discourses of science: communication as information transmission (see Reddy, 1993, for a conceptual analysis of this metaphor, which he calls the conduit metaphor). Hence, we argue that metacommunicating at workshops – in the sense of talking about different ways of understanding knowledge, language, and communication not as static ready-made and transmittable, and as conduits for such transmission, but instead as actions carried out by people in dialogue, emerging through coordinating and conflicting perspectives in co-constituted activities – is decisive for working towards establishing some degree of intersubjectivity (Rommetveit, 1974; Marková, 2003). Such intersubjectivity enables participants to go on with a joint activity – mutual knowledging – rather than being engaged in parallel and uncoordinated ones. The latter would maintain fundamentally different conceptions of what participation in these kinds of projects would entail, which would be detrimental to collaborative, mutually developing, knowledging. Hence, critical to the methodology of the workshop in research with educational professionals are metacommunicating and particularly de-reifying the tools of discourse with which we think and communicate. Doing these things(!) is decisive for ensuring that all participants have a voice in contributing to mutual knowledging and for avoiding hiding power hierarchies, two important features actualised in these kinds of projects.

Conclusions

To summarise, contributing to an important feature of workshop methodology, we argue the following. In order to collectively learn, we cannot be content with merely observing or stating that participating ECEC personnel express an expectation that knowledge is there beforehand to be transmitted to them. To conduct research, we

need to have theoretical tools that enable us to move beyond the specific here-and-now of each such project. Developing such tools is instrumental to collective knowledging and to further developing the kind of research with educational institutions that is, under various headings, prevalent in contemporary society.

Emphasising the importance of de-reifying key terms in research on learning and development, it is important to realise that we cannot avoid reification. The attentive reader will have seen many examples of it in this very text. Hence, while we cannot avoid reification, we argue that it is important to be mindful and communicate about (i.e., metacommunicating) key concepts in these kinds of projects, such as knowledge, language, and communication. We do not suggest that people are commonly aware of these features of language use; much communication follows the path of least resistance. Hence, we are not aware of much of our language use and what it implies, taking for granted that this is what we say or this is what it is (Bateson, 1972/2000; Nachmanovitch, 2009). Still, our languaging semiotically mediates (Wertsch, 2007) our thinking and perceiving. Thus, changing our ways of communicating changes how we think about and perceive the world. In communicating, Shotter (1993) argues, ‘what matters is not so much the conclusions arrived at as the terms within which arguments are conducted. For to talk in new ways, is to “construct” new forms of social relation’ (p. 9). Hence, new ways of speaking also mean constituting new social relationships, which is integral to achieving mutual knowledging among different professional groups such as ECEC teachers and researchers.

While the phenomena of nominalisation and the associated reification are not new to scientific theory (Bateson, 1972/2000; Woodworth, 1940), in the present text, we have *recontextualised* them in relation to collaborative research between educational personnel and researchers. In doing so, we have suggested some unfortunate consequences of this process:

- That it constitutes a perspective on knowledge as if it is already there beforehand.
- That this knowledge can be transmitted from one (group) to another (sender to receiver).
- That it hides authoring, thus hiding participants’ voices (agency) and potentially also hiding power hierarchies that need to be made visible and be managed in order to facilitate all participants’ possibilities to be genuine contributors to mutual knowledging.

Communicatively constituting, simply through unreflectively reproducing common ways of speaking about, *knowledge as objects that are already there* (as things these are localisable in space) and available, through *communication as a conduit*, to be *transmitted* or *transferred* from knower to receiver, means positioning ECEC personnel – and the members of this group positioning themselves – *as receivers, lacking knowledge*. Such a (self-) view of participants is entirely *contrary* to the ambitions of research collaboration and *antagonistic to promoting the*

empowerment of ECEC personnel to be recognised and able to take on the role of professionals with *collective agency* over their profession.⁴

In response to this analysis, in this text, we have suggested *knowledging* as a term to avoid the reification of knowledge. This mirrors other attempts to find ways of speaking that are more responsive to the dynamic features of reasoning and knowledge-building, such as *linguaging* (Linell, 1998, 2014) and *knowing* (Dewey, 1938/2008). In this text, through theoretical analysis, we have contributed to the methodology of a particular and critical part of collaborative research between researchers and ECEC personnel: the workshop. In doing so, we have built on insights from philosophy and theory of science, concerning nominalisation and reification – that is, the processes of transforming verbs or adverbs into nouns, and the ensuing transformation of activities and processes into things. Here, we have *recontextualised* these processes and argued that it is decisive to be mindful of, and metacommunicate about, them in research in which different professional groups collaborate. We have argued that metacommunicating about nominalisation and reification and why these transformations are problematic is instrumental in demystifying knowledging, by avoiding making knowledge and language into things that are already there to be transmitted and taken over, and in acknowledging participants' contributions, issues that are decisive for research projects co-constituted by different participating groups.

References

- Bateson, G. (2000). *Steps to an ecology of mind*. University of Chicago Press. (Original work published 1972).
- Billig, M. (2008). The language of critical discourse analysis: The case of nominalization. *Discourse & Society*, 19(6), 783–800.
- Dewey, J. (2008). Logic: The theory of inquiry. In J. A. Boydston (Ed.), *The later works of John Dewey, 1925–1953: Volume 12: 1938*. Southern Illinois University Press. (Original work published 1938).
- Halliday, M. A. K., & Martin, J. R. (1993). *Writing science: Literacy and discursive power*. University of Pittsburgh Press.
- Hanfstingl, B., Rauch, F., & Zehetmeier, S. (2019). Lesson study, learning study and action research: Are there more differences than a discussion about terms and schools? *Educational Action Research*, 27(4), 455–459.
- John-Steiner, V., Weber, R. J., & Minnis, M. (1998). The challenge of studying collaboration. *American Educational Research Journal*, 35(4), 773–783.
- Linell, P. (1998). *Approaching dialogue: Talk, interaction and contexts in dialogical perspectives (Studies in Language and Society, 3)*. John Benjamins.

⁴In this chapter, we discuss a particular feature of importance to metacommunicate about. Hence, metacommunicating is, per implication, of more general importance to collaborative research between ECEC personnel and researchers: If there is no metacommunicating about the premises (including, importantly, participants' expectations of each other and of their own roles), there is a risk that important questions and processes at workshops and in the collaboration more generally will be overlooked to the detriment of cooperation and mutual knowledge-building.

- Linell, P. (2014). Interactivities, intersubjectivities and language: On dialogism and phenomenology. *Language and Dialogue*, 4(2), 165–193.
- Marková, I. (2003). Constitution of the self: Intersubjectivity and dialogicality. *Culture & Psychology*, 9(3), 249–259.
- Nachmanovitch, S. (2009). This is play. *New Literary History*, 40, 1–24.
- Pramling, N., Wallerstedt, C., Lagerlöf, P., Björklund, C., Kultti, A., Palmér, H., Magnusson, M., Thulin, S., Jonsson, A., & Pramling Samuelsson, I. (2019). *Play-responsive teaching in early childhood education*. Springer. <https://link.springer.com/book/10.1007%2F978-3-030-15958-0>
- Pramling Samuelsson, I., & Pramling, N. (2013). Orchestrating and studying children's and teachers' learning: Reflections on developmental research approaches. *Education Inquiry*, 4(3), 519–536.
- Reddy, M. J. (1993). The conduit metaphor: A case of frame conflict in our language about language. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed., pp. 164–201). Cambridge University Press.
- Rommetveit, R. (1974). *On message structure: A framework for the study of language and communication*. Wiley.
- Säljö, R. (2002). My brain's running slow today – The preference for “things ontologies” in research and everyday discourse on human thinking. *Studies in Philosophy and Education*, 21, 389–405.
- Shotter, J. (1993). *Conversational realities: Constructing life through language*. Sage.
- Wallerstedt, C., Brooks, E., Ødegaard, E. E., & Pramling, N. (Eds.). (this volume). *Methodology for research with early childhood education and care professionals*. Springer.
- Wertsch, J. V. (2007). Mediation. In H. Daniels, M. Cole, & J. V. Wertsch (Eds.), *The Cambridge companion to Vygotsky* (pp. 178–192). Cambridge University Press.
- Woodworth, R. S. (1940). *Psychology: A study of mental life* (12th ed.). Methuen.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 11

Responding to Wicked Tensions and Problems in Practices-Developing Research



Elin Eriksen Ødegaard

Abstract Experiences from practices-development research, as presented in Part II of this book, identify what we call *wicked tensions and problems* (Bentley J, Toth. Exploring wicked problems: what they are and why they are important. ArchWay Publishing, 2020). The experienced team from Sweden, Denmark, and Norway have collaborated for many years with early years teachers and the early childhood education and care (ECEC; i.e. in these national contexts, preschool/kindergarten) sector in their efforts to respond to societal problems alongside practitioners. Enhancing meaningful practices in the ECEC sector by creating relevant academic knowledge for and within this sector is a policy expectation in response to the wicked problem of societal problems. In the effort to do so, our experience is that even if this effort is rewarding and new knowledge is created and practices are transformed, a range of tensions occur already from the start of new projects, and we encounter problems we cannot solve as they lie outside our immediate responsibility. Additionally, collaboration can risk violating the standards of research and the traditions of education. This chapter draws on examples from Part II of this book (Wallerstedt, Brooks, Ødegaard & Pramling, this volume). While the projects reported on vary in pedagogical themes, sites, and participants, they share a participatory research design in their efforts to respond to challenges and develop practices while undertaking research. The chapter first elaborates on the nature and challenges of wicked tensions and problems and thereafter identifies some of the tensions and problems reported. The aim of the chapter is to articulate the tensions and problems on a meta-level for further efforts of partnership research. The vision for knowledge development entering practices-development research from the reported projects is clear and similar across the projects. The common vision is to nurture practices for long-term knowledge gains. In this chapter, we suggest that experiences and reflexivity from the collaborative Scandinavian milieus across these proj-

E. E. Ødegaard (✉)

KINDknow –the Kindergarten Knowledge Centre for Systemic Research on Diversity and Sustainable Futures, Western Norway University of Applied Sciences, Bergen, Norway
e-mail: elin.eriksen.odegaard@hvl.no

© The Author(s) 2023

C. Wallerstedt et al. (eds.), *Methodology for Research with Early Childhood Education and Care Professionals*, International Perspectives on Early Childhood Education and Development 38,
https://doi.org/10.1007/978-3-031-14583-4_11

153

ects can articulate some wicked tensions and problems and improve knowledge in this regard. The chapter provides a summary list of recommendations for stakeholders to consider when planning and conducting participatory design research.

Introduction

While the co-creation of knowledge between different stakeholders, such as academics and staff at early childhood education and care (ECEC) institutions, does not come easy, efforts to do so can be rewarding (Coburn & Penuel, 2016; Von Heimburg et al., 2021; Ødegaard, 2021). Even if there is a long tradition of including ‘practices’ in the domain of ‘knowledge’ through methodologies like experiments, observation, notetaking, and descriptions, there is a range of stumbling stones in the jungle of history knowledge (Burke, 2016). This history has articulated that, even if practices are connected to habits and traditions, they are subject to continuous change. With the professionalisation of teachers follows the development of a professional ethos: a pride in one’s occupation and a loyalty to colleagues before others. Professionalisation is also accompanied by a technical language and a new regime of ignorance to certain kinds of knowledge, especially tacit knowledge – the knowing of *how* as opposed to the knowing of *what*. This chapter will further articulate the knowledge of how in practices-development research by analysing the studies presented in Part II of this book.

These projects share designs of participatory research, referred to here as practices- development research. In their efforts to respond to challenges and develop practices while undertaking research, the experienced team from Sweden, Denmark, and Norway have collaborated for many years with early years teachers and the preschool/kindergarten sector in their efforts to tame the ‘wicked problem’ (Bentley & Toth, 2020) of supporting early childhood education. Even if the studies vary in pedagogical themes, local sites, and number of participants, they share the approach of collaborating efforts to change practices while creating new relevant practices and knowledge. The vision for knowledge development entering practices-development research from the reported projects is clear and similar across the projects: to nurture collaborative practices for long-term knowledge gains. Considering the rather large holes in the existing knowledge base in this area (e.g. Bærheim et al., 2022), we argue that, to move forward, it is necessary to name and tame the tensions and problems in the ECEC arena.

In this chapter, we suggest that a descriptive meta-analysis searching for learning points across these studies can identify some common and unique wicked tensions and problems found in them. This meta-analysis will increase knowledge in this regard and enable us to sum up the learning points. Based on our findings, we present recommendations for future projects involving teams of collaborative partners in the ECEC sector. The chapter starts by briefly elaborating on the nature and challenges of wicked tensions and problems, and thereafter identifies some of the tensions and problems reported. The chapter ends with a summary of the efforts made

to overcome the tensions and tame the problems and presents the responses in regard to further efforts.

A Long-Term Effort to Find Solutions to Wicked Tensions and Problems

Many contemporary problems in policy and management literature are increasingly characterised as ‘wicked problems’, meaning that they are difficult to solve (UNESCO, 2017; Alford & Head, 2017; Termeer et al., 2019; Bentley & Toth, 2020). Wicked problems present us with a number of difficult challenges. As we grapple with them, it is easy to be impatient, because wicked problems tend to be messy, ill-defined, connected to tacit aspects, and complex to understand. These problems tend to resist our attempts to solve them (wicked tensions and problems are neither discovered nor uncovered; they exist as messes, chaos, confusions, and uncertainties until somebody articulates them, takes ownership of them, and brings them into discourse). Naming tensions and problems ‘wicked’ will not make them disappear or solve them, but it provides a way to address them. Such efforts, made in Part II of this book, are further analysed and discussed in this chapter.

As described in the chapter ‘A retrospective view on researchers’ and preschool teachers’ collaboration: The case of developing children’s learning in preschool’ (Pramling Samuelsson, this volume, Chap. 2), pioneering work was conducted in Sweden from around the 1970s and with a boost in the 1980s and the years that followed. This was a time when laboratory studies were criticised on the grounds that results could be biased due to children’s many reactions to an unfamiliar laboratory milieu. At this point in history, the topics of children’s rights and gender equality were upcoming discourses in Scandinavian milieus, leading to a move away from research in laboratories in favour of observing real-life events and activities at ECEC institutions. Arguments were raised regarding the importance of developing knowledge about children in settings where they were familiar with the environment and in contexts other than their homes. The inclusion of early years institutions in research led to a critique of blind spots in research methodologies and the development of new ones (e.g. Arvidsson, 1976; Jalmert, 1981). Traditional work in child development was said to be based on notions of an individual and decontextualised child, and a new contribution to the rethinking of ‘development’ was progressed. Children’s perspectives were documented through their interactions with others in situated practices, across social contexts, and in the loci of early years institutions (preschool, kindergartens, and nurseries). This change in methodology can be noted early on among Scandinavian early years pioneers (see, e.g. Hedegaard et al., 2018; Sommer et al., 2010).

Based on her experiences of collaborations with teachers, Pramling Samuelsson (this volume, Chap. 2) described these first years as involving two parallel processes: (1) the researcher worked in a way according to which she

metacommunicated about the teachers' work with the children, just as the intention was to inspire the teachers to work with metacommunication with the children in practice. By conducting research inside the institution, Pramling Samuelsson developed (2) research designs in which the notion of the children's perspective as an expression of their views on their learning were made into research questions. As these new ideas could be challenging for the teachers, in these first collaboration efforts, the researchers served as experts, modelling and challenging the staff. The staff were involved in discussions, developing the didactic method and participating in the metacommunication with children and staff.

Even though we can find pioneering projects on practices-developing research in Scandinavia, more than 40 years later one of the dominant problems currently facing the Scandinavian preschool/kindergarten sector is the low degree of interdisciplinarity and collaborative practices, especially across academic and societal stakeholders in the ECEC sector. Research and policy documents now mention the transformative power of the co-creation of knowledge. Today, the co-creation of knowledge is often described as altering the roles of citizens, users, and professionals in ways that support sustainable public value outcomes (Ødegaard, 2021; Bærheim et al., 2022; OECD, 2018; Wals, 2010).

For years, the OECD has noted the need for continuous professional development, pointed to schools as learning organisations, and promoted their participation in research learning communities (OECD, 2016). The OECD has identified evidence in external research findings that the improvement of day-to-day practice is far from common practice. Many schools find it difficult to become 'research engaged'; reasons for this have involved a lack of necessary skills in staff, resources, or motivation. The OECD has defined a new wicked problem: How do schools become more research-engaged and confident in using research data, and how do they ensure that staff have the capacity to analyse and use data to improve and, where necessary, transform existing practices (OECD, 2016, p. 9)? They also claim that the capacity to systematically collect, analyse, and exchange knowledge and learning – whether using ICT or not – is underdeveloped.

In a literature review of research-practice partnerships in education (Coburn & Penuel, 2016), the authors claimed that we need critique from studies that attend to unintended or negative outcomes. For example, they reported that studies conducted in specific contexts focus on a narrow range of important issues (Coburn & Penuel, 2016). Although the research may inform a specific district, it may not contribute to educational improvement in a broader context.

The ECEC sector has its wicked problems, as recently noted by Cameron and Moss (2020) in the context of the UK; however, the following challenges would be recognisable in many countries internationally: (a) a system that remains split between childcare and early education, creating inequalities, divisions, and discontinuities; (b) a split and devalued workforce, overwhelmingly female, consisting mostly of 'childcare workers' with low status and qualification and low wages; and (c) a standardised, one-size-fits-all curriculum that is narrowly focused on preparing children for primary school at the expense of diversity and context, with a pedagogy

that is measurement-driven and fails to recognise or value many subtle and fleeting signs of learning that are difficult to easily measure.

The Scandinavian countries can be viewed as a contrast to the UK, as the Scandinavian ECEC sectors have succeeded in more or less taming these wicked problems, even though they cannot be completely resolved. As the following lists show, many of the recommendations by Cameron and Moss (2020, pp. 223–227) are currently mainstream policies in the Scandinavian context, while some remain a problem:

- (a) The creation of a public system of early childhood education that is fully integrated, covering policymaking, administration, curriculum, regulation, access, funding, workforce, and type of provision, and is underpinned by an integrative concept and a broad concept of education working with an ethics of care, built on values of participatory democracy, cooperation, and solidarity. This is achieved in Scandinavia at the policy level.
- (b) Staffed by graduate professionals specialising in work with children from birth to 6 years, having parity of status and conditions with compulsory schoolteachers, and accounting for at least 60% of staff working directly with children. This recommendation is not yet fully achieved in the Scandinavian countries, despite hard work by unions and professionals. Staff are specialised in working with children from birth to 6 years, but their status is not yet fully paired with that of teachers of higher ages.
- (c) Closely connected to local authorities, who would have a rejuvenated role in planning, coordination, and support, the central government would play a reduced but important strategic role. This has been achieved in the Scandinavian countries; in fact, the research reported in Part II of this book is financed, facilitated, and encouraged strategically by the countries' governments and anchored in local authority initiatives.

As Bentley and Toth (2020) also pointed out, in the past some countries have tamed many of the wicked problems that remain in other countries, e.g. an end to child labour and the acceptance of people with different sexual and gender orientations. Comparing the UK and Scandinavian examples, we can see that the Scandinavian countries are at the forefront of working with taming the wicked problems connected to the ECEC sector, and we continue this story by examining this team of researchers' projects and identifying the kinds of tension and problems that exist.

The Creation of Tensions and Problems

Through pioneering research, reported in Part II, the authors have created a series of tensions and problems based on their own experience as leaders of and participants in a variety of participant research and in dialogue with the international literature on topics such as design research, action research, continuous professional

development, workshop methodology, etc. In the following, we discuss several tensions and problems narrated in Part II.

The Risk of Violating the ECEC Tradition in Large-Scale Interdisciplinary Research

In the chapter ‘Interprofessional dialogue and the importance of contextualising children’s participation: A collaboration between different disciplines around new technology’, Lagerlöf (this volume, Chap. 8) reports on the MIROR Project (2010–2013), a large-scale international research project funded by the EU. The project, aimed at developing an adaptive system (using artificial intelligence, AI) for music learning and teaching in the context of early childhood music education, was based on a spiral design approach involving coupled interactions between the technical and interdisciplinary research partners. Lagerlöf reports on her experiences of partners who did not relate to Swedish preschool tradition, raising methodological challenges in the design of the experiments and technology. She also reports a tension connected to economic interest by a business partner, suggesting the presence of a crack in the underlying expectations for the project. While the Swedish partners saw children as research subjects and therefore expected the children’s participation to be recognised in the methodological design of the project, this was ignored by the business partners. Thus, the partners clashed in their view of the children’s role in the research. Contradictory views of children as research objects or subjects came to the surface, which led to differing assumptions about education. In large-scale EU-funded projects, the research designs are often experimental, and the assumptions presumably lie in an individual psychological or behaviourist view of learning (Lagerlöf, 2016). Research grants from the EU under previous framework programmes have brought together researchers and industry actors, from the EU and from other parts of the world, to find solutions to some problems (https://ec.europa.eu/info/strategy/research-and-innovation_en). Lagerlöf (this volume, Chap. 8) points to the dilemma of the researcher whose motives are idealistically driven, with the best interest of the child at the forefront, and business partners who are economically motivated. The issue of implementing new technologies in educational practices has been studied and found to be challenging. Lagerlöf mentions that, although experimental (or quasi-experimental) research designs are appropriate for studying the potential of specific technology applications in controlled situations, it is not easy to transfer findings from such research designs to the reality of the classroom in a preschool setting and that other research designs are needed to take account of its complexities. She claims that, when failings and shortcomings are found in implementing educational technology theory or principles, this is not necessarily due to any inadequacies in the tools; rather, too little attention has been paid to the pedagogical, organisational, cultural, and other factors that merge in institutional work and are thus decisive for what fails. What Lagerlöf (this volume, Chap. 8)

points out is that what works in education is complex and, therefore, what transfers successfully into other contexts will come with uncertainty. Business companies tend to influence and shape education decision-making and primarily work to create demand for their products, rather than responding to pedagogical ideals. This approach has implications for practices-developing research, since the teachers' requests are subordinate in importance to the technologists' desire to market their products.

The Problem of Paradoxical Mechanisms in the Migration Area

In the chapter 'Opening up new spaces for action: Challenges of participatory action research for preschool practice transformation in an introductory unit for immigrant children', Åkerblom (this volume, Chap. 6) reports from a participatory preschool practice development research project carried out between 2017 and 2019, funded by the Swedish Institute for Educational Research. The aim of the project was to, in collaboration with the participants, explore conditions for early childhood education in a migrating world by identifying the challenges facing a preschool in a linguistically heterogeneous neighbourhood of a major Swedish city. Åkerblom reports on a clash of practices and emotional grief when having worked closely with families for some time to support language and all-round development and then risking the experience of the family being sent back to their country of origin after being denied asylum. One day you're working to fulfil society's aims of supporting children and families, and the next this relationship is broken by a contrary aim of society: limited access to permanent stays (Åkerblom, this volume, Chap. 6). For societies, asylum seekers are statistics; for the kindergarten personnel and peers, refugees and immigrants mean relationships filled with emotional tensions and ties.

Another challenge addressed in this chapter was that, even though an initial important aim had been to involve the children's parents, it became clear after interviews with them that their priorities involved very different things from participating in the daily work of the preschool unit. It was not that they were uninterested in participating in the preschool development; but their lives often did enable them to work with the preschool. The parents expressed insecurity in their position as asylum seekers and as families with relatives affected by war or displacement, and the staff felt frustration at having no power to help the families in these situations.

However, challenges remain that could never be dealt with on the level of a preschool development project, but that have a profound impact on the children's lives and conditions. This situation was actualised one morning when Åkerblom came to the setting and found the adults sad and upset because one of the children had not come to the unit that morning. The reason for his absence was that he had been deported the night before, along with his mother and siblings. What happened to this child shows a major structural discrepancy between a discourse underlining the

needs of the child and the protection of children's rights and equality on the one hand, and a policy that does not provide a stable and secure environment for families with young children on the other, whereby considerations of the child's wellbeing no longer apply when a family receives a negative decision in the process of asylum-seeking.

Challenging a Superficial Collaboration by Allowing a Deep and Slow Process

In the chapter 'Mutuality in collaboration: A development project for teaching in multilingual ECEC', Kultti (this volume, Chap. 9) describes tensions and problems connected to the relationship and character of dialogue between the party who initiates the research and the participants. In her study, the initiative came from the researchers and local authorities in the region, and the participants were preschool teachers, preschool heads, and persons responsible for preschool education and children's wellbeing in six municipalities.

Kultti's text discusses the lessons learned by reflecting on the experiences of conditions for and contributions of mutuality in the collaboration. One of the lessons learned involves the cruciality of leadership, in terms of both organising for *continuing professional development* and the art of leading in ways that legitimise the experiences of the participating teachers. These aspects are understood as adding to *ownership* among the participating teachers. When evaluating the collaboration at the end of the follow-up, she describes a connection between the initial ideas and the teachers' response to these ideas. The teachers expressed a wish to have known more about the project and its aims. This project had a top-down initiation that failed to anchor the aims of all participating staff. There are lessons to be learned here about leadership, how to anchor a project, and how to strengthen ownership of topics and problems.

Kultti (this volume, Chap. 9) summarises another lesson learned, saying that a shared understanding of the project content and organisation, and thereby mutuality and ownership, cannot be taken for granted. She refers to the importance of mutual dialogue among the participants, as dialogues might have different meanings and functions for the various participant groups (Kultti, this volume, Chap. 9). From this 6-year project with six preschools in the region, Kultti has deep experience in regional collaboration, and her main point is that the leadership of a project must be systemic, meaning that it brings all groups of participants into the mutual collegial learning process in all steps and over time.

As we learn from Brooks (this volume, Chap. 7) and her team in the chapter 'Integrating digital technologies in teaching and learning through participation: Case studies from the Xlab – Design, Learning, Innovation laboratory', a project was designed as a slow and deep process. The chapter builds on experiences from a 3-year project examining how preschool and primary school educators and children

develop digital competence using key elements such as *participation*, *influence*, and *responsibility*. The design of the project involved an action research approach based on a partnership between a preschool and school district in a municipality in Sweden and Xlab – Design, Learning, Innovation, a mobile research laboratory at Aalborg University in Denmark. The approach involved explorative and reflective discussions, casual conversations, and semi-structured interviews. The point of departure was an ontology whereby professional learning was considered a form of social engagement, always subject to change, which therefore made it challenging to convey its complexities in standardised ways. Design work is perceived as a fuzzy process that emerges from and strives for co-creative ‘making and breaking’. Such workshop activities are associated with active participation, in which the expressing of thoughts and ideas evolves from social demands in practice-based activities designed for creativity and collaboration.

One of the project’s primary goals was to make the educators at the preschools and schools ‘owners’ of the situation that was causing them problems. Their efforts to solve problems were similar to those identified by Kultti (this volume, Chap. 9). The researchers aimed to understand the participants’ problems and opportunities and identify how these could be approached and sustained. They spent 6 months preparing the project and included educators via casual conversations while observing how their workdays unfolded, as well as interviews and a first baseline questionnaire.

These methods enabled negotiation and sensemaking through shared practices. The researchers strived for a fluid and change-oriented conceptualisation of integrating digital technology in play and learning and thus encouraged and studied participating in collective sensemaking. Engaging educators in participation-oriented and collaborative processes through sharing knowledge and learning from each other was considered fundamental in providing the educators with tools to drive their professional learning through ‘doing’. Nevertheless, the tensions identified entailed a strain between professional learning as being self-directed, which was the aim, and professional development as something that is done for them, a practice that also occurred. What we can learn from Brooks and her team is that they achieved success by taking their time and ensuring ownership of the project among the educators. It takes time to develop self-directedness and a shared ownership of problems and to identify a process of working to solve or tame them.

Power Balancing: The Tension Between Co-learner and Co-expert

In the chapter ‘Managing the tension between the known and the unknown in knowledge-building: The example of the Play-Responsive Early Childhood Education and Care (PRECEC) project’, Wallerstedt (this volume, Chap. 4) highlights a challenge in how to deal with the ‘unknown’ in a practice-based research

project, i.e. not only reproducing knowledge (further education) but also developing new knowledge (research). The Swedish Institute for Educational Research funded the project, and a premise for this funding was that the research address the teachers' questions. The project's aim was to take on the challenge of developing a *didaktik* approach designed for preschools through collaboration and empirical and theoretical contributions. While digging into the research, it became evident that the teachers had a variety of concerns and wishes: one that typically involved searching for the unknown (how play and learning can be integrated into teaching), and one that concerned searching for clarifications on what was already known – they wanted the researcher to spread (teach) the established knowledge (cf. Pramling & Peterson, this volume, Chap. 10). As the dissemination of knowledge did not constitute a research problem, the researchers were trapped in ambivalence regarding whether to fulfil the teachers' wishes or to confront and find ways to manoeuvre in a field of ambivalence: How should they deal with the teachers' wishes between the known and the unknown? Wallerstedt understood this ambivalence in connection to the wicked problem of how to generate research with findings that are useful for teachers and that will be of pragmatic validity? The problem raised by Wallerstedt is that asymmetries of power exist in educational research.

There is a long-term power relation between researchers (academics) and teachers, in which the researchers have the right to define the problems of their investigations. This situation leads the teachers to take on a subordinate role; they accept and express a wish for the research to continue, and the researchers are given the role of experts, who can share established knowledge. She points out that, in the end, the PRECEC project was led by the researchers, who invited the teachers to participate. Wallerstedt (this volume, Chap. 4) discusses ways forward, grounded in looking back at the experiences of the PRECEC project and relevant research. As Brooks (this volume, Chap. 7) and Kultti (this volume, Chap. 9) also pointed out, one should recognise that successful research partnerships across sectors depend on mutual trust, and it takes time to build this. To build trust, she suggests providing *task support*. This means that participants must have enough time to engage in the project and commit to a fair workload. They will also need *team support*, e.g. the support of group dynamics, mutuality, and cohesion.

Lessons learnt from this self-reflective chapter on the PRECEC project might also raise awareness about the researcher's role: When practitioners assign themselves the role of the party in need of competence and the researchers the role of the expert, who can disseminate established knowledge, the researchers need to be aware of this mechanism and plan for this power distribution. This does not mean that researchers should avoid being experts on established knowledge, because they are such experts; rather, they should encourage deep dialogue between the unknown and the tensions and problems of the teachers and explore how established knowledge can or cannot be met when challenged by the unknown.

Similar self-reflections can be found in the chapter 'Exploring mixed roles and goals in collaborative research: The example of toddler mathematics education', by Björklund and Palmér (this volume, Chap. 3). This chapter, however, brings up problems concerning the validity of data generation when teachers are involved.

This project was carried out by 2 researchers, 3 preschool teachers, and 27 toddlers, on the topic of mathematics: toddlers' number sense. It was funded by an agency that emphasised collaborative research between teachers and researchers to develop educational practices. Therefore, the teachers and researchers collaborated in the planning stage of the project to formulate research questions and outline the design of the project. The experiences are grounded in a 3-year iterative process of recurring meetings every fortnight. During these meetings, activities were planned and evaluated and possible learning outcomes and shortcomings were discussed, as were different interpretations of toddlers' communicative acts. The project resulted in revisions to teaching acts and activities, new ideas for how to conduct or develop an activity, and plans for a continuance of practice development. One important key for generating scientifically solid results was measuring the toddlers' learning progress. The goal of the project was to determine whether the teaching had the intended effects. To accomplish this, the process of generating valid data on the toddlers' knowledge was crucial (albeit difficult). The project's aim challenged how we can design for valid data generation. They designed play-based tasks based on the theoretical principles of variation theory of learning (Marton, 2015; Marton & Pang, 2006). The children were invited to participate, and based on video recordings of their actions, they explored the toddlers' understanding of numbers and identified what content the teaching should emphasise. The teachers were crucial in orchestrating the investigation. Björklund and Palmér make a convincing case in illustrating how collaboration between teachers and researchers can tame the problem of validity in data generation. It is not reasonable to believe that an outside researcher, who does not know the toddlers, will be able to interact and communicate with them in a way that offers them the best conditions for demonstrating their knowledge. As toddlers' expressions are often subtle and thus demand exclusive knowledge of the individual child's ways of expressing him/herself, the teachers' knowledge of the children made it possible to design for an everyday life study. The chapter illustrates how collaboration between researchers and teachers provides opportunities to bring to the fore both outsider and insider perspectives. One could say that, through exploration and negotiation, the researchers and teachers developed a co-learning agreement (Björklund & Palmér, this volume, Chap. 3).

The issue of balancing power relations was also prominent in the study of Exploration and Pedagogical Innovation Laboratories (EX-PED-LAB), discussed in the chapter 'Success of and barriers to Workshop Methodology', authored by Eriksen Ødegaard et al. (this volume, Chap. 5). This chapter reports on the emerging findings during the first year of a design- and inquiry-based research project called *Kindergarten Teacher as a Researcher*. The project was funded by the Research Council of Norway as a starting grant to support early childhood educational leaders and staff in enhancing the quality of kindergartens in close collaboration with researchers, at the same time as both partners were researching three areas of common interest: the play, exploration, and learning environment; collaboration with families; and leadership and governance. The chapter identifies a set of features for success and takeaway points for the further development of the workshop methodology. Among the tensions identified, one stands out as dominant and similar to what

is discussed in this book by Kultti (this volume, Chap. 9), Wallerstedt (this volume, Chap. 4), and Björklund and Palmer (this volume, Chap. 3): the tension connected to balancing power relations. In the chapter by Ødegaard et al., these tensions were articulated as being connected to understanding the open project approach and the participants' role in a co-creative design. The participants all had previous experience of a collaborative approach with different stakeholders; however, shared responsibility was new to them. Thus, it was challenging for the participants to find a way to take responsibility for actions and take on the role of an initiating and an actively responsive partner. Although some were self-governed and started rich in initiatives, others had an unclear association with the main projects, while still others awaited instructions and asked for a clearer design. Operationalising democratic processes based on a belief in valuing and validating teachers' and researchers' perspectives and knowledge is challenging. This difficulty was illustrated by one of the participants in this project, who stated that without the expertise in analysing the problems and the ability to develop a problem into research questions, they would have been helpless; they appreciated the responses from and initiatives by the researchers.

A finding highlighted in this chapter (Ødegaard et al., this volume, Chap. 5) is that the analytical competence of the co-researcher can be diverse; the staff found it difficult to analyse empirical data beyond the first step of locating what was going on in the data. This finding calls for an understanding of collaboration and co-creation as not necessarily doing the same thing but rather exploiting the various expertise of the different participants. A trained researcher will have the expertise to scientifically and conceptually analyse data, but when engaging in a practices-developing research project, the researchers and their competencies must fit into the new context, which can be challenging for them. As reported in this chapter, analytic competencies can be self-constrained by the researchers, for instance, avoiding lecturing, or by an uncertainty as to whether these competencies will fit into the unique context. Furthermore, the roles of the participants are intertwined and thus need to be negotiated between the partners.

The Problem of Language

In the chapter 'The importance of de-reifying language in research with early childhood education and care professionals: A critical feature of workshop methodology', by Pramling and Peterson (this volume, Chap. 10), the authors discuss tensions and problems concerning language. As we have learnt through the previous chapters, mentioned above, tensions and problems occur in the space of unequal roles and responsibilities, in the long historical tradition and discourse of researchers as the experts on established academic knowledge and teachers as the experts on everyday life and the child. Pramling and Peterson, who saw these power relations through the lens of language, point to observations experienced in workshops that are similar to those raised as a problem in many of the chapters in this book: ECEC

personnel express an expectation that the research partners should tell them what to do and how something is. According to Pramling and Peterson (this volume, Chap. 10), this expectation clashes with a foundational premise of research: that research entails generating new knowledge, which means that we cannot say beforehand how it is or what teachers should specifically do. In their chapter, they go beyond this identified challenge to theoretically analyse the language used in interprofessional communication, arguing that the language problem needs to be problematised through metacommunicating the linguistic process. It is essential to avoid constituting knowledge as objects existing beforehand to simply be transmitted from the knower (researcher) to the receiver (ECEC personnel). In other words, such a view constitutes the latter group as lacking knowledge. They make the important suggestion not only to recognise different participating groups' contributions but also to more actively and dynamically use metaphors of knowledge. They suggest that we use the notion of *knowledging* (Pramling & Peterson, this volume, Chap. 10). This concept, a verbalisation of the concept of 'knowledge', follows the academic thinking of the new concept of *linguaging*, which means 'doing language'. *Knowledging* is therefore a concept that fits well in practices-developing research, entailing a collaborative dialogic activity or a process of making meaning and building knowledge through language to tame wicked tensions and problems.

The Way Forward: Revisiting Reflexivity, Balancing Narrative Knowing, and Logo-scientific Knowledge

Taming the wicked tensions and problems means acting in ways that gain some measure of control over the critical variables of difficult issues of our concern and finding how to take action that narrows the gap between the current situation and future, more desirable ones (Bentley & Toth, 2020). Through a series of long-standing project experiences across three Scandinavian countries and touching base with European projects, we have illustrated that the tensions and problems we faced in collaborating across the academic and professional fields can be summed up in five main areas:

1. A risk of violating the ECEC tradition in large-scale interdisciplinary research
2. The problem of paradoxical mechanisms in the migration area
3. Challenging a superficial collaboration by enabling a deep and slow process
4. Power balancing – the tension between co-learner and co-expert
5. The problem of language

These tensions, risks, challenges, and problems are never quite solved, fixed, or finished, or fully tamed (Bentley & Toth, 2020). We can conclude that working with practices-developing research requires that we continue to reduce the risks, disclose the paradoxes, balance power relations, and manoeuvre the tensions and problems.

In relation to tackling the wicked problems, Bannink and Trommel (2019) suggest (1) living with the problem and (2) conducting trial and error or iterative

development. The principles underpinning each of these approaches may well apply to practice-developmental teams. In our context, this suggests that staying with the trouble, adjusting it, breaking it down to smaller areas, and fine-tuning new practices as we go along can be a way forward, rather than simply claiming failure or low quality. For example, Termeer et al. (2019) suggest that identifying small wins and achievable successes, which indicate progress towards an ideal outcome, can help in this regard. The above-mentioned projects all described small wins and highlighted experiences of challenges, problems, and tensions.

Bannink and Trommel (2019) suggest that ‘intelligent governance requires reflexivity, in the sense that it considers other problem definitions than the ones suggested by administrative reason’ (p. 17). We could say the same from the point of departure of academic research and from practice. It is too simple to say we did things wrong or that it did not work out, just as it is too simple to claim success. A meta-level with a reflexivity of processes will benefit all partners.

Czarniawska (1997) builds on Lyotard (1979) and Polkinghorne (1987) in her claim that narrative knowing enables the negotiation and renegotiation of meaning through the mediation of narrative interpretation. Narrative knowing must stand beside logo-scientific knowledge in explanations and understandings of the mechanisms of organisations and institutions. Also, rules and traditions should be balanced with change and transformation.

Having discussed experiences of tensions and problems from a range of Scandinavian partnership projects, from small-scale to large-scale international multidisciplinary ones, in Table 11.1 we provide a list of recommendations. In addition to our experiences in the Scandinavian and European projects mentioned, we are inspired by Bentley and Toth (2020), Digmann et al. (2012), and Czarniawska (1997), among others.

These recommendations can be a helpful tool in future project planning. In pointing the way forward, we create spaces for opportunities to include future successful

Table 11.1 Recommendations for taming wicked tensions and problems

Action on the meta-level	Action in research practices
Stay with the messy nature of tensions and problems – locate and articulate the risks, tensions, problems, and paradoxes – identify the spaces of opportunity	Each participant keeps a research notebook to note small and big wins (spaces of opportunity) as well as small and big tensions and problems. These can be analysed during the evaluation sessions with all partners to look for risks and paradoxes and identify tensions and problems
Own the wins and problems	All partners should care about both the wins and problems. When tensions and problems arise, blaming the other party is a dead end. When the other party successfully identifies spaces of opportunities, everyone should celebrate
Language work – create the problem	Wicked problems are not discovered or uncovered; they exist as messes, chaos, confusions, and uncertainties until somebody brings them up for discussion. It is only when the problem is created as an articulation that it will be possible to take action to make things better

(continued)

Table 11.1 (continued)

Action on the meta-level	Action in research practices
Language work – define the tensions and problems	We need to extract tensions and problems from the confusions and the chaotic messes. Defining a problem begins with clearly describing the present situation, as demonstrated in Part II
Language work – name the tension and problems	To understand and appreciate the nature of the problem, we need to communicate with others. Naming, disagreeing, and agreeing in the naming of a tension opens up thinking and understanding and creates <i>knowledging</i>
Identify the obstacles	Before we can act to improve, we need to identify the barriers to the changes
Rules, even bureaucratic ones, can be changed	Rules, even those made by authorities, are made by people and can be changed by people. If an obstacle is a rule, mitigate the risks and outline the gains for a change
Recruit, enlist, and engage others	With wicked problems, one might need to recruit persons to enact a transformation, so we need to find those who care about the emerging problems, are affected by them, have expertise and knowledge about them, and have the authority to make the necessary changes to remove the obstacles: motivated partners. Change cannot be made without engagement on all levels, or without authority
Train a mentality of perseverance, positive imagination, and grit	Real-life clashes can be emotionally demanding and need to be resolved and debriefed. Obstacles can also involve mental blocks in individuals. People can become anxious and foresee unnecessary risks, or people can be low in energy and have a reduced willingness to challenge themselves. Imagining scenarios can offer both discouragement and encouragement, depending on the character of the person's imagination. We need to understand and accept that changes to wicked problems might never happen, but that taming them can be achieved. Working with huge societal problems that we cannot control can be hard and exhausting. However, hard work can also be rewarding and meaningful; therefore, perseverance, energy, reflexivity, and actions by individuals should be recognised and encouraged. Useful tools in this endeavour include optimistic imaginations and scenario thinking and critical constructive thinking and action
Create and implement an action plan	Making good plans involves craftsmanship and must be taken seriously. The group must work together to get control over the variables in the situation and make constructive changes. These changes should be evaluated and adjusted
Create new narratives and those of innovation	People can be given new spaces of action and new tasks, which can open for new narratives. Narratives create actors with certain personal traits and spaces of action. Institutions can recognise narrative modes of knowing. Institutions can also consider whose voices and which events are currently heard and seen, and whose are ignored, and can thereby create new narratives to inspire and document innovative practices and transformation
Document, share, and engage in further dialogues and discourses	Research must always be done systematically. Designs need to involve practice-developing research partner collaborations, with meeting points and validation. Sharing stories of success and failure will not only enrich others' understandings; the process of doing so is also a learning journey in itself

transformations and pedagogical innovations. An acceptance of the messiness of real-life troubles and paradoxes is crucial, as are collaborative skills, strategies for the co-creation of knowledge, awareness of language, and perseverance mentalities, not only among the actors in the field such as researchers and practitioners but also among policymakers and partnership participants outside the ECEC field.

References

- Åkerblom, A. (this volume). Opening up new spaces for action? Challenges of participatory action research for preschool practice transformation. In C. Wallerstedt, E. Brooks, E. E. Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- Alford, J., & Head, B. W. (2017). Wicked and less wicked problems: A typology and a contingency framework. *Policy and Society*, 36(3), 397–413. <https://doi.org/10.1080/14494035.2017.1361634>
- Arvidsson, T. (1976). *Barnobservationer i förskolan*. [Observations of children in preschool]. LiberLäromedel.
- Bærheim, A., Ødegaard, E. E., & Næss, J. (2022). Team reflexivity and the shared mind in interprofessional learning. *Policy Futures in Education*. Published online first 03.05.2022.
- Bannink, D., & Trommel, W. (2019). Intelligent modes of imperfect governance. *Policy and Society*, 38(2), 198–217. <https://doi.org/10.1080/14494035.2019.1572576>
- Bentley, J., & Toth, M. (2020). *Exploring wicked problems: What they are and why they are important*. ArchWay Publishing.
- Brooks, E., Møller, K., & Højslet Schurer, M. (this volume). Integrating digital technologies in teaching and learning through participation – Case studies from Xlab design, learning and innovation laboratory. In C. Wallerstedt, E. Brooks, E. E. Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- Burke, P. (2016). *What is the history of knowledge?* Polity Press.
- Cameron, C., & Moss, P. (Eds.). (2020). *Transforming early childhood in England: Towards a democratic education*. UCL Press.
- Coburn, C. E., & Penuel, W. R. (2016). Research-practice partnerships in education: Outcomes, dynamics, and open questions. *Educational Researcher*, 45(1), 48–54.
- Czarniawska, B. (1997). *Narrating the organisation – Dramas of institutional identity*. Chicago University Press.
- Digmann, A., Jensen, K. E., & Jensen, J. P. (2012). *Vi er på vej – Offentlig innovasjon 2.0*. København/Gyldendal Public.
- Hedegaard, M., Aronsson, K., Hojholt, C., & Skjaer Ulvik, O. (2018). *Children, childhood, and everyday life: Children's perspectives* (Revised ed.). Information Age.
- Jalmert, L. (1981). *Små barns sociala utveckling: en granskning av forskning om spädbarn, mammor, pappor, könsroller och daghem*. [Young children's social development: A syntheses of research about Babies, Mother, Fathers, Gender and Daycare]. Folksam.
- Kultti, A. (this volume). *Ownership for mutuality in collaboration*. In C. Wallerstedt, E. Brooks, E. Eriksen Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- Lagerlöf, P. (2016). *Musical play: Children interacting with and around music technology* (Gothenburg Studies in Educational Sciences, 385). Acta Universitatis Gothoburgensis.
- Lagerlöf, P. (this volume). Interprofessional dialogue and the importance of contextualising children's participation in research. In C. Wallerstedt, E. Brooks, E. Eriksen Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.

- Lyotard, J.-F. (1979). *The postmodern condition: A report on knowledge* (G. Bennington & B. Massumi, Trans.). Manchester University Press.
- Marton, F. (2015). *Necessary conditions of learning*. Routledge.
- Marton, F., & Pang, M.-F. (2006). On some necessary conditions of learning. *Journal of the Learning Sciences*, 15(2), 193–220.
- Ødegaard, E. E. (2021). Reimagining “collaborative exploration”—A signature pedagogy for sustainability in early childhood education and care. *Sustainability*, 13(9), 5139.
- Ødegaard, E. E., Oen, M., & Birkeland, J. (this volume). Success of and barriers to workshop methodology. In C. Wallerstedt, E. Brooks, E. Eriksen Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- OECD. (2016). *What makes a school a learning organisation? A guide for policy makers, school leaders and teachers*. OECD.
- OECD. (2018). *Future of education and skills 2030. Position paper*. OECD.
- Polkinghorne, D. E. (1987). *Narrative knowing and the human sciences*. State University of New York Press.
- Pramling Samuelsson, I. (this volume). To develop children’s learning in preschool – Together with teachers. In C. Wallerstedt, E. Brooks, E. E. Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- Sommer, D., Pramling Samuelsson, I., & Hundeide, K. (2010). *Child perspectives and children’s perspectives in theory and practice*. Springer. <https://doi.org/10.1007/978-90-481-3316-1>
- Termeer, C. J. A. M., Dewulf, A., & Biesbroek, R. (2019). A critical assessment of the wicked problem concept: Relevance and usefulness for policy science and practice. *Policy and Society*, 38, 1–13. <https://doi.org/10.1080/14494035.2019.1617971>
- UNESCO. (2017). *Education for sustainable development goals: Learning objectives. The global education 2030 agenda*. United Nations Educational, Scientific and Cultural Organization.
- Von Heimburg, D., Langås, S. V., & Ytterhus, B. (2021). Feeling valued and adding value: A participatory action research project on co-creating practices of social inclusion in kindergartens and communities. *Frontiers in Public Health*, 9, 604796.
- Wals, A. E. J. (2010). Mirroring, Gestaltswitching and transformative social learning: Stepping stones for developing sustainability competence. *International Journal of Sustainability in Higher Education*, 11(4), 380–390. <https://doi.org/10.1108/14676371011077595>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Chapter 12

Terminological and Conceptual Meta-commentaries on Practices-Developing Research



Niklas Pramling  and Cecilia Wallerstedt

Abstract In this commentary concluding this volume (Wallerstedt, Brooks, Ødegaard & Pramling, this volume), we discuss three principal matters: (i) what constitutes problems in research carried out in collaboration between researchers and ECEC personnel, (ii) limitations and ethical dilemmas that we find particular to such research, and finally (iii) the very terminology employed for this kind of research and its participating groups of collaborators.

Introduction

In this final chapter of this volume (Wallerstedt, Brooks, Ødegaard & Pramling, this volume), we will discuss three principal matters.¹ The first concerns what constitutes problems in collaborative research between researchers and ECEC professionals, and we emphasise the importance of not regarding problems as self-evident or as existing facts; simply put, problems need to be problematised. The second issue of consideration involves limitations and ethical dilemmas that we find are specific to this kind of research. The third issue we discuss, and end the volume with, is the very terminology used to refer to participants in research conducted in collaboration between researchers and ECEC personnel and how to refer to and conceptualise this

¹The reasoning in this chapter in part builds on work conducted with funding from the Swedish Institute for Educational Research (Skolfi 2016/112), which is gratefully acknowledged.

N. Pramling (✉)
University of Gothenburg, Gothenburg, Sweden
e-mail: niklas.pramling@ped.gu.se

C. Wallerstedt
Department of Education, Communication and Learning, University of Gothenburg,
Gothenburg, Sweden

kind of research. These strands of reasoning are examples of the semiotic mediation (Wertsch, 2007) and possible re-mediation (Nilsen et al., 2021) of languaging, that is, how language use does not merely refer to the pre-existing but is also a part of constituting the objects of reference as being of a particular kind – and, consequently, re-mediating implies re-constituting what something is taken *as*. Furthermore, since languaging has material consequences, re-mediating implies a shift in what follows from our language, for instance, in research, concerning how we go about studying addressed phenomena and how relationships between participants are formed (cf. Pramling & Peterson, this volume, Chap. 10; Shotter, 1993).

Problematising the Problems Addressed in Collaborative Research

An issue that is almost always raised in relation to collaborative research between researchers and teachers (in our case, ECEC professionals) is the origin of the questions posed and the problems addressed. Even if approaches to such research differ – with action research clearly taking a stand for and, amongst other things being defined by, addressing teachers' questions and problems – they all discuss and relate to this issue. The reason for addressing this issue is that knowledge generated through such research should be relevant to the key participants from educational institutions, primarily teachers. This issue is therefore related to the matter of pragmatic validity. This quality assurance (validity) is sometimes taken quite far in methodological discussions. For example, Nuthall (2004) clarifies: 'By the pragmatic validity of research, I mean research that actually answers the question of how teaching is related to learning in a way that is comprehensible and practically useful for teachers' (p. 273). A key question here is what it means for knowledge to be 'useful': practically applicable, perceived by teachers to be relevant to understanding a part of their work, something that leads to measurable results in children's learning and/or something else. It is critical, we argue, to not reduce (this kind of) research to simple instrumentality and 'deliverability', that is, as input-output models; this would be very unfortunate and would severely restrict the potential value of collaborative research. There are many issues that are not of this kind that are, arguably, just as relevant to generating new knowledge about what is of interest and relevance for both the research community and the agents of educational institutions, such as preschool teachers and preschool heads.

It is pivotal that the knowledge generated through collaboration between researchers and ECEC professionals be relevant not only to the research community but also to the agents of educational institutions. What is more problematic is the premise that the questions (and the problems they address) need to come from the teachers (or other personnel at educational institutions), which indicates an assumption that posing researchable questions does not presume having a research education. However, learning to pose fruitful and theoretically motivated research

questions is an important part of a research education. Hence, even if the questions and problems addressed in such research stem from the agents of educational institutions, researcher contribution is needed to shape these into questions that can be answered through empirical research. Closely related to this and also, we argue, in need of more careful consideration is what problems are addressed by posing particular questions. In the next section, we will take a detour of sorts to arrive at a number of points in relation to this matter.

What Problems to Address and What Does It Mean to Solve Them?

While addressing the problems of the agents of educational institutions – often referred to with the everyday notion of ‘the practice’ (cf. below) – is integral to collaborative research in which researchers and teachers participate, what constitutes a problem and what it means to address it – or, in more common terms, solve it – tend to remain unreflected on. What problems are, we argue, is not often discussed. That the question of what constitutes a problem to address in research is left unscrutinised is reflected, we argue, in the focus being directed towards solutions to problems. However, as argued by Schön (1993), there would be a point in paying more attention to what he refers to as ‘problem-setting’ rather than merely focusing on ‘problem-solving’. The concept of problem-setting denotes accounts of ‘what is wrong and what needs fixing’ (Schön, 1993, p. 138). That is, how we constitute something *as* a problem sets the frame for, and is generative for, our investigation; it directs our attention (i.e., makes us pay attention to some things while making us rationally blind to other things). Neglecting to reflect on what we constitute as problems to address in research and only focusing on how to solve – unproblematised – problems is therefore problematic (!). One simple example would be whether we constitute a teaching problem in terms of teachers (teachers’ planning, carrying out, and evaluating), children (children’s capabilities, talents, interests, and attention or lack thereof), or relationships (communication between participants) or in some other terms. How we constitute problems in research is inherently related to our theoretical point of view (theoretical premises, principles, and concepts). It is vital to critically scrutinise what we set as problems to be solved and not merely take them for granted in finding solutions.

Having argued the importance of participants in collaborative research paying more attention to problem-setting (Schön, 1993) and not jumping ahead to problem-solving, we would also like to render some inspirational reflection on the latter; that is, what it means to solve a problem. In their classic treatise on the *Metaphors we Live By* – that is, the metaphors that are formative of and generative for how we conceive of and conceptualise phenomena – Lakoff and Johnson (1980) render a fortuitous example. An exchange student at the University of California at Berkeley attending a seminar on metaphor mentioned a ‘wondrous’ metaphor he kept hearing

on campus: ‘the solution of my problems’ (p. 143). The student understood this expression as a chemical metaphor and was surprised to learn that other participants did not see it as a metaphor (in this way). While stemming from a form of misunderstanding, this way of understanding the expression of solutions to problems, as Lakoff and Johnson discuss, is worth pondering over:

It gives us a view of problems as things that never disappear utterly and that cannot be solved once and for all. All of your problems are always present, only they may be dissolved and in solution, or they may be in solid form. The best you can hope for is to find a catalyst that will make one problem dissolve without making another one precipitate out. And since you do not have complete control over what goes into the solution, you are constantly finding old and new problems precipitating out and present problems dissolving, partly because of your efforts and partly despite anything you do. (p. 143f.)

Understanding the ‘solution to a problem’ as such a chemical metaphor, they further argue, implies that ‘problems are not the kind of things that can be made to disappear forever. To treat them as things that can be “solved” once and for all is pointless’ (p. 144). Understood in this sense or, in Lakoff and Johnson’s terms, ‘liv[ing] by this metaphor’ implies:

direct[ing] your energies toward finding out what catalysts will dissolve your most pressing problems for the longest time without precipitating our worse ones. The reappearance of a problem is viewed as a natural occurrence rather than a failure on your part to find ‘the right way to solve it’. (p. 144)

What we set as problems to be researched and, indeed, what we understand a problem to be – as cogently illustrated by the chemical metaphor example – are generative for how we go about knowledging. The language we use, with its inherent metaphoricity and perspectivity – theoretically captured in the concept of semiotic mediation (Wertsch, 2007) – is constitutive rather than reflective of pre-existing reality (problems). Re-mediating and thus re-constituting what *is* the problem is a vital part of ‘solving’ *it*. Problems can therefore not simply be addressed as if they were unquestionable facts (the allegedly ‘actual’ problems teachers face); rather, problem-setting is an important part of knowledging and a practice that is contingent on theoretical resources (tool-kits, cf. Wells, 1999) allowing shifting perspectives.

Limitations and Ethical Considerations

What we have considered in this chapter so far is how problems are constituted. We have touched upon an aspect of an ethical nature that is also visible throughout this anthology. This aspect is twofold. Firstly, conducting relevant research is an ethical responsibility of researchers, and in this case, it means that research should be relevant to preschool teachers and other educational actors and, in the long run, should also benefit children. Secondly, the process of problem-setting and problem-solving in research and collaboration projects, as discussed in this book, is a

power-balancing act. When doing research in close collaboration between academia and preschools, there should be an ambition to strive for equal conditions for participation among researchers as well as teachers.

We want to underline that the kind of research we discuss in this book is just *one* branch of research within the field of educational science. What we describe here cannot be considered an all-encompassing development of the discipline. There will still be a need for experimental research, collaborations with other disciplines besides preschools, philosophical discussions, and other scientific contributions. One reason for this is that theoretical development is as important as the development of methods in educational practice. There might be an emerging tendency towards an overemphasis on the latter (i.e., practice development). Acknowledging *practices-developing* (in the plural; see below) *research* as *one* particular form of research on its own terms can help in tackling other ethical dilemmas. Eriksson (2018) points to two ethical problems that arise when one tries to adopt traditional ethical standards in action research of different kinds. The first concerns anonymity. To not expose the identity of the participants in research is normally a basic rule; but when teachers choose to participate in a research collaboration, they might want to post information about the project on the preschool's website and may write their own texts and make presentations about the project in different fora – not allowing them to do so would, arguably, be unethical. It should be self-evident that they are to be given full credit for their work. The second problem that Eriksson discusses is voluntarism. When a school (e.g., through the preschool head) decides to participate in a research and development project, it is not, of course, necessarily the case that all the teachers there have the same interest in participating. Research is voluntary, but practice development in a school is mandatory. There is an obvious risk that these boundaries will become blurred, and they need careful consideration when one is setting up and carrying out a project.

We want to add another problem that occurs in relation to newly developed restrictions and forms of ethical review of research that are now often required (in order to later be published in a research journal, for example). These reviews generally require a clear plan for the research in which all steps are well defined and described, in good time before a project starts. However, as could be learned from the examples offered in this book, *practices-developing research* projects often develop in a different way. If one allows the process of collaboration to be dynamic and dialogical, not every aspect of a project can be defined in advance. A collaboration typically lasts a long time, and it can sometimes be hard to determine where it crosses the border from an initiative of collaboration to a research project in need of ethical review. We want to emphasise that these issues of ethical consideration do not entail a suggestion to relieve *practices-developing research* from ethical responsibility, rather the opposite. This anthology provides many examples of how an ethical awareness is critical in all steps, from the first contact between participants, through the process, to after the project is finished. It should also be considered that teachers and researchers may have different ethical guidelines, rules, and education. These differences should be communicated and coordinated.

Labelling and Conceptualising Collaborative Research Between Researchers and ECEC Professionals

In this volume, examples of, experiences from, and insights into research with early childhood education and care (ECEC) professionals have been presented and discussed. Drawing on many examples of actual projects, the intention has been to contribute to informing the methodology for such research. The individual chapters provide ample examples of how such research can be designed and organised and, most importantly, what knowledge contributions it can make to research and to the development of ECEC institutions. In this final chapter, we will take a meta-perspective on the terminology of this research and draw some conclusions that can inform further conceptualisation.

Looking at the terminology used for the kind of research in which researchers and representatives of educational institutions (e.g., ECEC teachers) collaborate, we can see that different names are used, which is also discussed in this volume's introductory chapter (Wallerstedt & Nilsen, this volume, Chap. 1). Widely used terms are '*practice-near research*' and '*practice-developing research*'. Other terms used are 'combined research and development project' (Pramling et al., 2019; Stavholm et al., 2021), 'praxeology' (Pascal & Bertram, 2012; Winterbottom & Mazzocco, 2016), 'researcher-practitioner cooperation' (Wagner, 1997), 'practice-oriented' (Björklund & Palmér, this volume, Chap. 3), and 'participatory preschool practice development project' (Åkerblom, this volume, Chap. 6). These are all, of course, legitimate names for the research they denote. Since language as a cultural tool-kit (Wells, 1999) not only refers to what is spoken about but also provides a perspective – theoretically labelled semiotic mediation (Wertsch, 2007), as we have already discussed – it may be useful to briefly address what perspectives these different names constitute and what their implications are. Here, we will focus particularly on the use of 'practice' in these names.

The name 'practice-based research' clearly states that such research needs to start in 'practice'. Building on a traditional distinction between 'practice' and 'theory', this implies that the grounding is taken in ECEC rather than in research (state-of-the-art empirical knowledge and/or theoretical advancement). Such a stance, starting in and with 'practice' and, more specifically aligned with such a perspective, the teachers' questions, is a hallmark of action research.

The name 'practice-near research' differs from the previous one, remaining open as to where the incentive (and questions and problems) for such research stems from. The specification of 'near practice' implies that research of this kind could not be conducted in a laboratory setting but has to relate to – be in the proximity of – the educational institution (or 'practice') being researched. The name 'practice-oriented' lies close to these two names and, like them, implies that the 'practice' is there and known beforehand; and its singular form implies that it can be equated with the educational institution (e.g., preschool) addressed.

What remains unconceptualised in these names is what concept of 'practice' is employed. Rather, both formulations imply a common-sense or everyday notion of

‘practice’, as a contrast to ‘theory’ and as more or less synonymous with what goes on at the ECEC institution. We do not suggest that ‘practice’ is defined in a name, of course, but merely that the form of the labels *implies* that ‘practice’ is a term without theoretical specification. Based on these simple observations and comments, here we will elaborate on the inherent perspectivity (semiotic mediation) of the names employed for research with ECEC personnel and their implications. Finally, we will suggest an alternative term that, we argue, avoids some of the problems inherent in the other alternatives, as a way forward for conceptualising collaborative research between researchers and ECEC personnel.

On the Distinction Between ‘Researcher’ and ‘Practitioner’ and the Label of ‘Practice-Developing Research’

Questioning the usefulness of labelling participants in practice-near research in terms of the distinction ‘practitioner’ (teacher) and ‘theoretician’ (researcher), Alexandersson (2006) argues:

The distinction ‘practitioner’ and ‘theoretician’ is questionable if this difference refers to anything other than teachers and researchers having different work. Their actions are different as their work is of different kinds and has different aims. Teachers are responsible for pedagogical work: They teach/lead children’s and adults’ learning. Researchers study work: They research. The two therefore have different knowledge interests. Knowledge building may also differ. Research, in contrast to pedagogical work, is of a public character, but rarely do teachers need to make their work processes public – that is, in text for someone else to formulate their premises, approaches, and results. This is, however, necessary in researchers’ work. (p. 365, our translation)

By labelling participants in practice-near research as if one group were concerned with practice and another with theory, we reproduce a societal hierarchy according to which theory is higher (metaphorically speaking, that is, better, more advanced; Lakoff & Johnson, 1980) and practice lower (see also the next section of this chapter). Such a distinction risks making us rationally blind to the fact that theory in science is grounded in practical (empirical) investigation, and practice (e.g. teaching) is informed by theory (whether this is explicit or implicit, and whether or not the individual is aware of this).

In the above quote, Alexandersson also argues that clarifying premises and communicating principles, while integral to the work of researchers, are not a part of the work of teachers. However, it may be questioned whether this is still true (Alexandersson’s text is from 2006). Arguably, today teachers are expected to be able to formulate – to both children’s guardians and preschool heads as well as each other within the work team – the principles and foundations of their work with children. Hence, we argue that the work of teachers – in our case, preschool teachers – has also become more public, with demands on the ability to make known and explicit one’s professional knowledge. With this emerging, or more emphasised, contemporary trend, practice-developing research becomes even more important.

Such research, we suggest, does not simply reproduce the traditional practice of preschool teachers on the one hand or of researchers on the other. Rather, other practices are constituted, whereby teachers and researchers take on roles and tasks that have traditionally not been particularly included in their professional work.

The Politics of Representation

Naming and categorising participants in research are not neutral processes. How research participants – whether they be teachers collaborating with researchers and/or children or other participants – are referred to can be seen as exemplifying what Mehan (1993) has labelled the politics of representation. This concept captures the fact that there is a perspective inherent in our terminology, even in the language of research. In the context of discussing research conducted in collaboration between researchers and ECEC personnel, it is vital, we argue, that the latter participants be referred to in terms of ‘preschool teachers’, which is their professional denomination (in Sweden and in many other countries), rather than with the more common term ‘practitioner’. The problem with the term ‘practitioner’ in this context is that it is part of a tradition of argumentation (Billig, 1996) according to which it is in opposition to ‘theoretician’. There are additional problems with this distinction in referring to ECEC teachers and researchers, but here we restrict the discussion to one. In Alexandersson’s (2006) elaboration on the relationship between research and the development of educational practice, he argues, ‘when the teaching profession is labelled as a practical profession, this ends up far down on a professional hierarchy. Teacher can then, as a profession, be held back – economically as well as when it comes to influence over the development of [preschool or] school’ (p. 357, our translation). Phrased differently, when labelling ECEC teachers as ‘practitioners’, researchers unintentionally contribute to suppressing the profession of preschool teachers and thereby keeping them not only from being recognised as having a voice in the public debate and as agents driving the development of ECEC but also, in fact, from gaining standing as members of a profession per se. In combination with conducting research with ECEC personnel, how these participants are labelled in research is critical to how others perceive this group (and all that this entails, such as societal status and salary) as well as how members of the group perceive themselves and their possibilities to develop their collective agency. If research is to support young children through informing quality ECEC, researchers need to recognise the ECEC professionals by giving them appropriate acknowledgement as a professional group.

Practices-Developing Research

In a continuation of our reasoning on the politics of representation in research collaborations between ECEC professionals and researchers, there is an additional terminological issue we would like to raise. Having reflected on the texts in this volume

(Wallerstedt et al., this volume) as well as other research in this tradition, we suggest using the name '*practices-developing theory*' (i.e. in the *plural*) rather than 'practice-developing theory'. The rationale and reason for this suggestion is as follows. The word 'practice' is used both in an everyday sense and in a theoretical sense. According to the first alternative – that is, 'practice' as an everyday concept – preschool is described as a 'practice'. When taking this perspective – or using the word in this way – preschool is constituted in contrast to 'theory', according to a prevalent and long-standing tradition of argumentation (cf. Billig, 1996, and above). However, there are fundamental problems with this, as well as its ensuing image of preschool teachers as 'practitioners', as we have discussed. The word 'practice' is also used in research/theoretical language. In such cases, it refers to institutionalised activities (i.e. activities for which there are more or less established traditions that 'go beyond' the present activity; cf. Linell, 2014). Understood in this sense, Initiation-Response-Evaluation/Follow-up (IRE/IRF) would be a practice typical of schooling, and singing songs including all the children's names at circle time would be a practice in preschool, to give two examples. It is not only theoretical development, on an empirical basis, but also the development of educational practices (e.g., how teachers can contribute to imagination and play, inclusion, social justice, and many other important practices) that the knowledge-building of the kind of research this book discusses the methodology of arguably contributes to. In using the plural form – 'practices' – rather than the singular, we indicate that we are using the word in its theoretical sense rather than its everyday sense, in order to avoid re-constituting a common dichotomy between practice (preschool) and theory (research), a dichotomy that is arguably counterproductive to the kind of collaborative knowledge-building we give examples of and discuss the principles of, challenges with, and gains from here. This is an important meta-comment that we think should be kept in mind in the conducting of further research.

On a final note, the reasoning presented in this chapter can also be seen as a reflection on the topic of this book – *methodology understood as developing the practices of conducting research* with early childhood educational institutional personnel. This, consequently, entails an additional sense of '*practices-developing research*' in the plural.

Acknowledgement This work builds on research funded by the Swedish Institute for Educational Research (Skolfi, 2016/112), which we gratefully acknowledge.

References

- Åkerblom, A. (this volume). Opening up new spaces for action: Challenges of participatory action research for preschool practice transformation in an introductory unit for immigrant children. In C. Wallerstedt, E. Brooks, E. E. Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- Alexanderson, M. (2006). Praxisnära forskning och läraryrkets vetenskapliga bas. In B. Sandin, & R. Säljö (Eds.), *Utbildningsvetenskap – ett kunskapsområde under formering* [Educational science – A field of knowledge in formation] (pp. 355–376). Carlssons.

- Billig, M. (1996). *Arguing and thinking: A rhetorical approach to social psychology* (2nd ed.). Cambridge University Press.
- Björklund, C., & Palmér, H. (this volume). Exploring mixed roles and goals in collaborative research: The example of toddler mathematics education. In C. Wallerstedt, E. Brooks, E. E. Ødegaard & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- Eriksson, I. (2018). Lärares medverkan i praktikinrä forskning: Förutsättningar och hinder [Teachers' participation in practice-near research: Conditions and obstacles]. *Utbildning & Lärande*, 12(1), 27–40.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. University of Chicago Press.
- Linell, P. (2014). Interactivities, intersubjectivities and language: On dialogism and phenomenology. *Language and Dialogue*, 4(2), 165–193.
- Mehan, H. (1993). Beneath the skin and between the ears: A case study in the politics of representation. In S. Chaiklin & J. Lave (Eds.), *Understanding practice: Perspectives on activity and context* (pp. 241–268). Cambridge University Press.
- Nilsen, M., Lundin, M., Wallerstedt, C., & Pramling, N. (2021). Evolving and re-mediated activities when preschool children play analogue and digital memory games. *Early Years*, 41(2–3), 232–247.
- Nuthall, G. (2004). Relating classroom teaching to student learning: A critical analysis of why research has failed to bridge the theory-practice gap. *Harvard Educational Review*, 74(3), 273–306.
- Pascal, C., & Bertram, T. (2012). Praxis, ethics and power: Developing praxeology as a participatory paradigm for early childhood research. *European Early Childhood Education Research Journal*, 20(4), 477–492.
- Pramling, N., & Peterson, L. (this volume). The importance of de-reifying language in research with early childhood education and care professionals: A critical feature of workshop methodology. In C. Wallerstedt, E. Brooks, E. E. Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- Pramling, N., Wallerstedt, C., Lagerlöf, P., Björklund, C., Kultti, A., Palmér, H., Magnusson, M., Thulin, S., Jonsson, A., & Pramling Samuelsson, I. (2019). *Play-responsive teaching in early childhood education*. Springer. Open access: <https://link.springer.com/book/10.1007%2F978-3-030-15958-0>
- Schön, D. A. (1993). Generative metaphor: A perspective on problem-setting in social policy. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed., pp. 137–163). Cambridge University Press.
- Shotter, J. (1993). *Conversational realities: Constructing life through language*. Sage.
- Stavholm, E., Lagerlöf, P., & Wallerstedt, C. (2021). Appropriating the concept of metacommunication: An empirical study of the professional learning of an early childhood education work-team. *Teaching and Teacher Education*. <https://doi.org/10.1016/j.tate.2021.103306>
- Wagner, J. (1997). The unavoidable intervention of educational research: A framework for reconsidering researcher-practitioner cooperation. *Educational Researcher*, 26(7), 13–22.
- Wallerstedt, C., & Nilsen, M. (this volume). Enabling knowledge development relevant for ECEC. In C. Wallerstedt, E. Brooks, E. E. Ødegaard, & N. Pramling (Eds.), *Methodology for research with early childhood education and care professionals*. Springer.
- Wells, G. (1999). *Dialogic inquiry: Towards a sociocultural practice and theory of education*. Cambridge University Press.
- Wertsch, J. V. (2007). Mediation. In H. Daniels, M. Cole, & J. V. Wertsch (Eds.), *The Cambridge companion to Vygotsky* (pp. 178–192). Cambridge University Press.
- Winterbottom, C., & Mazzocco, P. J. (2016). Reconstructing teacher education: A praxeological approach to pre-service teacher education. *European Early Childhood Education Research Journal*, 24(4), 495–507.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

